

The Development of a Practical Model for the Editing of Theses and Dissertations

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Declaration

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Abstract

Theses and dissertations constitute a substantial platform for the documentation and dissemination of research findings, and the professional presentation of such findings is crucial for maintaining scientific integrity. Highly effective fact finders may lack writing skills and experience, or they may simply encounter barriers when expressing ideas, and thus perhaps inadequately present what they have so adequately found. In short, *adequate* editing of theses and dissertations is essential.

Whereas a multitude of guidelines is available for thesis and dissertation writing, there is little guidance available on the editing of such works. Thus, with the latter objective in mind, this thesis is dedicated to developing a practical model to editing postgraduate research papers.

Despite a notable lack of theory in the field of thesis editing, which became apparent while reviewing the respective literature, the most suitable sources of theory were selected to provide a basis for developing a model for thesis editing. These sources, combined with insights from a practical dissertation editing assignment, allowed for the design of a model for the practical editing process of postgraduate research texts.

The editing model is based on a process-oriented approach, i.e. one which focuses on the learning process of the student. Moreover, the model promotes a level of editorial intervention that conforms to the current perception of ethical intervention in thesis editing. Ethical intervention is currently being negotiated against the backdrop of such standards as the purpose of thesis writing as well as the requirement of originality of theses and dissertations.

In a testing phase the model was applied in a thesis editing assignment and emerged as a valuable guide in the process of editing. It also proved practicable in all its major aspects. Nevertheless, since a single testing assignment is not sufficient to prove the general practicality of any model, the model is still to be considered a prototype and may have to undergo further refinement after additional comprehensive testing.

Opsomming

Tesise en verhandelinge is 'n belangrike basis vir die optekening en verspreiding van navorsingsbevindinge, en die professionele aanbieding van sodanige bevindinge is noodsaaklik vir die behoud van wetenskaplike integriteit. Tog is kom hoogs doeltreffende navorsers soms minder bedrewe of ervare skrywers, of hulle bloot voor hindernisse te staan wanneer hulle hul gedagtes moet verwoord, wat tot die ontoereikende aanbieding van bevredigende bevindinge lei. Kortom die *toereikende* redigering van tesise en verhandelinge is van die allergrootste belang.

Hoewel daar etlike riglyne vir die skryf van tesise en verhandelinge bestaan, is daar weinig leiding beskikbaar vir die redigering daarvan. Gedagtig hieraan is hierdie tesis daarop toegespits om 'n praktiese model vir die redigering van nagraadse navorsingstekste te ontwikkel.

Ondanks 'n merkbare gebrek aan teorie op die gebied van tesisredigering, wat baie duidelik uit 'n oorsig van die betrokke literatuur blyk, is die mees toepaslike teoretiese bronne as grondslag vir die ontwikkeling van 'n model vir tesisredigering gekies. Met behulp van hierdie bronne, tesame met die insigte verkry uit 'n praktiese redigeeropdrag, kon 'n praktiese model vir die redigering van nagraadse navorsingstekste ontwerp word.

Die redigeermodel berus op 'n prosesgerigte benadering, dit wil sê 'n benadering wat op die student se leerproses konsentreer. Daarbenewens argumenteer die model ten gunste van redaksionele ingrepe wat met huidige opvattinge oor etiese tesisredigering strook. Dit geskied teen die agtergrond van die huidige gesprek oor etiese intervensie, wat onder meer teen die agtergrond van standarde soos die doel van die tesis sowel as die oorspronklikheidsvereiste vir tesise en verhandelinge gevoer word.

Die model is tydens 'n toetsfase in 'n tesisredigeringsopdrag toegepas en blyk nuttige riglyne vir die redigeerproses te bied. Ook het al die kernkomponente daarvan geblyk prakties bruikbaar te wees. Aangesien 'n enkele toetsopdrag nie voldoende is om die algemene bruikbaarheid van 'n model te bewys nie, word die model steeds as 'n prototipe beskou en dit sal waarskynlik ná bykomende omvattende toetsing verder verbeter word.

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Chapter 1: Introduction

1.1 Background

This thesis documents the development of a practical model for the editing of postgraduate research texts. The focus of the study is on theses and dissertations, since these documents usually present the final steps of a postgraduate student's career. Nevertheless, the model developed in the course of this research project is equally intended for the editing of all other types of postgraduate research texts that might require the services of an editor, such as essays, academic articles, research reports, research proposals and so on.

1.1.1 The lack of a theoretical basis

So far, little has been dedicated to the provision of practical guidance for editors of theses and dissertations. A multitude of style guides and manuals exists for the writing of such texts, but such manuals only allude to the editor as perhaps a user of a particular writing style rather than giving procedural guidance to the editor.

A general problem underlying this absence of practical guidance in such a rather specific sub-field of editing seems to be that the overall editing industry is still largely unregulated (Du Plessis and Carstens 2000 in Law 2011: 275). The statement that “text editors [are] also called proof readers, language editors, or copy editors” (Kotze and Verhoef 2003 in Van de Poel 2003: 36) testifies to the fact that there is still confusion about what editors actually are. Much recent work in the field is still concerned with the professionalisation of editing in general by developing standards and guidelines with a strong focus on determining the tasks of professional editors in the first place;¹ more specific problems such as those arising in the context of the editing of postgraduate research writing are still to be addressed.

Even though initial attempts have recently been made to define vital concepts such as the role and the tasks of editors of theses and dissertations,² research seems not to have arrived yet at the point of providing concrete guidance for the realisation of these concepts in immediate practice.

¹ Such as in Blaauw (2001), the “Australian standards for editing practice” (CASE 2001), Law and Kruger (2008), the “Professional editorial standards” by the Editors’ Association of Canada (EAC 2009), as well as in Law (2011).

² Such as in the “CASE editing standards: National policy on editing theses” (CASE 2004), the “Guidelines for editing theses” (EAC 2006), the “Guidelines for editing research theses” (IPEd 2010), the “Guidelines for ethical editing of theses / dissertations” (EAC 2012), well as by individual authors such as Van Aswegen (2007) or Kruger and Bevan-Dye.

1.1.2 A practical guide for the editing of postgraduate research writing

Despite this “immature” state of the art in editing theory, and even though there are clearly gaps to be filled in this theoretical field, the practical editing of postgraduate student writing is being done every day. Research texts need to be processed and thus need to be improved and amended so that they can be utilised in further research. Dissertations and theses are produced in large numbers every year, and the quality of such writing has an influence on the professional future of the authors of these texts as well as on the reputation of the respective institutions in which they are produced, as well as on the integrity of the field in which the thesis is written.

Furthermore, and perhaps even more importantly, academic writing caters for the documentation and dissemination of research findings. Those who conduct research, however, might experience diverse barriers to expressing themselves in writing. The pivotal role of editing in research documentation is obvious; editing helps to reduce writing-related barriers to the clear and unfalsified presentation of research outcomes – and thus helps to deliver as authentic an account of the research project as possible.

The unregulated state of the editing industry in South Africa (Law and Kruger 2008: 479) and the lack of theoretical guidance counteract the professional and accurate editing of research documentation rather than promoting it. In addition to that, the absence of a theoretical basis in the form of practical guidance for the editing of such texts further diminishes the scientific integrity of thesis editing. It is obvious that the regulation of a professional field cannot happen overnight and that there will be “no quick and easy solutions” to such problems; they can only be solved with “solutions suited to the particular situation” (Law and Kruger 2008: 491).

To promote the scientific integrity of thesis editing, the specific field of academic editing can be enhanced with a tailored solution: a practical model for the editing of postgraduate research writing. Such a model can be understood as both a provisional guide for editors of theses and dissertations, and, provided it proves practical, as a long-term solution for the practical editing of postgraduate research writing. What is needed is a model which is flexible enough to accommodate the problems in each individual thesis editing situation, and which allows the role and the tasks of the thesis editor to be negotiated according to the current definition of these concepts.

As Kruger and Bevan-Dye (2010: 158) show in their survey-based study of professional editors' perception of their role in the process of thesis editing, there is significant variance in the understanding of the tasks and the role of editors in the editing of dissertations and theses, and "editorial practices and guidelines vary" from institution to institution and from place to place. The flexibility of such a model is therefore particularly vital and shall receive specific attention in the course of this study. A functional model needs to provide enough space to integrate the particularities inherent in a certain environment; a model that instantly becomes unpractical as soon as circumstances or opinions diverge slightly would not be of much help.

Research writing, especially on a postgraduate level, is further not always produced by native-language speakers. Second-language writing is fairly common in postgraduate academic settings – not last since postgraduate programmes tend to have an international orientation and are thus often held in English – the second or third language of many students.

In a particularly multilingual context such as that of South Africa, it seems to be almost the norm for students to write in their second, and for students from Lusophone or Francophone Africa, even in their third language (Van Aswegen 2007: 141). Against this background, it can be assumed that there is a great need for editing work in academic settings in general, and that this need might increase relative to an increased degree of multilingualism in a particular context. The recent production of articles by South African researchers in the field of thesis editing³ could be understood as mirroring this increased need in a multilingual context.

This relatively high need for editing of postgraduate student texts in multilingual settings once again suggests that the field of editing would particularly benefit from a practical editing model, which can be used to assist those who have been assigned the task of editing a thesis, a dissertation or a similar piece of postgraduate research writing. The principal aim of the research presented in this thesis is thus to design an editing model which gives practical guidance to editors of postgraduate research writing. The term "model" hereby is to be understood as a step-by-step guide for the editor through the process of a thesis editing assignment. Furthermore, language independence of the editing model is intended in order to extend its scope of applicability to research texts written in languages other than the language of its composition. In a multilingual context such as South Africa, language independence of a thesis editing model is particularly indicated in order to equally serve the needs of research writers and editors of all language groups.

³ See for instance Van Aswegen (2007) or Kruger and Bevan-Dye 2010.

The aim of this study was not to produce new theory in order to promote the regulation of the industry and eventually arrive at a practical guide for thesis editing in a top-down approach. The approach of this study is to explore the issue from a bottom-up perspective; the intention is to use the currently available theory to design an editing model which guides practice – despite the immature state of theory.

1.1.3 Previous research

A research paper entitled “Textual therapy on four levels – The practicality of Brian Mossop’s editing theory in an authentic editing situation” (Baumeister 2011), which was submitted in October 2011 as part of the editing course of the MPhil programme in Translation Studies at Stellenbosch University, precedes this study. This previous research revealed that Brian Mossop’s approach to editing presented in *Revising and editing for translators* (2007) could be applied surprisingly well in retrospect to a practical dissertation editing assignment which had been completed as the empirical part of the research project. The research paper consisted of the practical editing of a dissertation and a retrospective theoretical reflection on the practical work, in which Mossop’s four-level approach to editing was applied in the editorial process. In retrospect it became apparent that the practical editing procedure had been structured in a way that exhibited certain parallels with Mossop’s conception of the nature of editorial work.⁴

Based on the outcomes of this preliminary research project, on which this thesis builds, it was hypothesised provisionally that Mossop’s approach to editing might be suited for the design of a thesis editing model. Whether this is indeed the case, however, has yet to be determined in a comparative literature study, which is presented in Chapter 2 of this thesis, in which Mossop’s work was analysed alongside other approaches to editing.

1.2 Purpose of the study

The principal aim of this study was to design a practical model for the editing of theses and dissertations, which is flexible and thus applicable to any particular assignment in the context of dissertation and thesis editing. As a provisional hypothesis, it is assumed that Mossop’s approach provides a suitable basis from which such an editing model can be developed.

⁴ These parallels are outlined in detail in 3.4.5.

1.3 Methodology

This study is an extension of the research paper titled “Textual therapy on four levels – The practicality of Brian Mossop’s editing approach in an authentic editing situation” (Baumeister 2011).

The previous study proceeded in an inductive manner, and consisted of both empirical and theoretical components. An empirical study formed the basis of the procedure. A dissertation was edited in order to gain first insights into the nature and requirements of the editing practice of postgraduate research writing. Subsequently, Mossop’s approach was applied to the practical work in retrospect in order to test the applicability of Mossop’s four-level editing approach in an authentic editing situation.

The study documented in this thesis builds on the same basis; it proceeds from the practical editing of the sample dissertation used in the previous research. A literature study was further conducted in the research to this thesis in which diverse sources of literature were analysed in a comparative review in order to find a suitable theoretical basis for the design of a practical thesis editing model. Subsequent to the literature review, a thesis editing model was developed as the principal objective of this study. A final major empirical step was concerned with the application of the designed model in a thesis editing assignment in order to test its practicality in an authentic editing assignment.

1.4 Limitations of the study

1.4.1 Imbalanced representation of perspectives

In 2.5, this thesis discusses the tasks and the role of thesis editors. As a basis for this discussion, sources of literature have been selected which present the current perspectives of different role-players involved in the process of thesis production and editing. It has to be noted, however, that this selection of sources does not cover the perspectives of all role-players involved in thesis editing. While an article by Kruger and Bevan-Dye (2010), which documents a survey of editors, represents thesis editors’ perspective on their tasks and role in this study, the perspective of the writers of research work, for instance, is not represented; a research project in which students and other research writers are surveyed regarding their opinion about the tasks and the role of thesis editors has yet to be conducted. The perspective of research supervisors on this matter is also only represented to a limited degree in an article written by Van Aswegen (2007), who presents her views on the role of thesis editors not only

from the perspective of a thesis editor but also from that of a postgraduate supervisor. Her article, however, reflects only a personal rather than a collective perspective. Therefore it is to be noted that the discussion on the role and tasks of thesis editors in this study is limited to the incomplete pattern of perspectives available in current literature on the matter.

1.4.2 Second-language editing in the empirical study

One aspect will be highlighted here which might appear as a potential drawback of this research project at first glance, but which in fact has little effect on the principal objective of the study.

The research in this study was conducted exclusively in English as part of the MPhil programme in Translation Studies at Stellenbosch University, which was offered in English. This thesis is hence written in English; the author is a second-language English speaker.

The circumstance that the practical editing work used and presented in this study was carried out in the author's second language might raise theoretical and practical questions. From a theoretical perspective, it might be argued that second-language theory had to be consulted if practical editing work by a second-language speaker is presented in a thesis.

From a practical view it may be argued – and this is certainly valid – that the outcome of second-language practical editing might forfeit quality regarding certain aspects such as idiomatic language usage, grammar, sentence structure and similar aspects with which second-language speakers typically struggle more than native speakers.

In the light of these issues, it was critically pondered whether it is acceptable to present second-language editing in a Master's thesis written on the subject of editing. It was then decided that in this particular study, the fact that the practical editing was carried out in the second language of the researcher plays little role with regard to the principal objective of this study.

The principal aim of this research project was the development of a practical model for the editing of theses and dissertations. The model was designed on the basis of insights from a practical assignment and on the basis of theory selected in a comparative literature study. The modules of which the editing model is composed are not derived from the practical performance of the researcher, but they are derived from literature in the first place. The practical work was carried out to obtain insights into the nature and requirements of thesis

editing, to get a practical understanding of general aspects which are relevant in thesis editing and eventually to test the editing model designed in the course of this research project. The practical aspects which were used and discussed in the light of the design of the editing model, as well as the model itself, are language independent; they are concerned with the overall structure and procedure of the editing process.

Therefore, the potential success or failure of the researcher in the immediate practical assignment as a result of her second-language status has no distorting effect at all on the design, the applicability and the functionality of the editing model developed as the principal project of this study. Whether, for instance, the researcher failed to spot and amend an unidiomatic expression in the sample text or whether she failed to correct an ill-structured sentence has no bearing on the editing model; idiomatic usage and sentence structure are nevertheless incorporated into the editing model as vital components of thesis editing.

Since the theoretical part of this study in an English postgraduate programme was conducted and documented in English, it was decided that the practical part would be completed in English too. It would have become unnecessarily complicated to complete the empirical study in my native language and the theoretical part in English, particularly since the model itself is language-independent in the first place.

The second-language editing may only present a limitation for the results of the immediate practical editing in terms of a potential weakness in certain language and grammar-related aspects because of my second-language status. I might have not grasped every idiomatic problem in the sample texts, and the edited texts might linguistically and stylistically not be as perfect as they could be when edited by a first-language speaker.

Such potential weaknesses in practice, however, will not do any harm to the thesis editing model as such. The practical work was rather completed to lead to the model and to test it; the quality of the practical work will affect neither the components of the model nor its practicality. As long as the necessary components are included in the model, it does not matter for the primary objective of this study if a grammar-related editing task has been fulfilled satisfactorily or not in the empirical study. What matters is that a model is developed which is functional in thesis editing and can be utilised by thesis editors to the best of their individual editing skills.

In the light of this, second-language theory would not present an adequate basis for this study, despite the second-language status of the researcher and editor of the sample texts. For the design of a (language-independent) thesis editing model as the principal aim of this study, the literature discussing the procedure of editorial work and the role and tasks of thesis editors was needed as a basis to achieve the aim of this project.

1.4.3 Restricted capacity for empirical testing of the editing model

Further, a limitation is present in the restricted capacity of this study to test the editing model. One testing assignment, which is part of this study, cannot be regarded sufficient to establish whether the model, as it is designed, is practical for thesis editing in general, or whether the model needs to undergo further refinement and adaptation to function as a practical guide in thesis editing. In this regard, the testing of the model in this study is limited to one first testing phase and provisional conclusions with regard to its general practicality.

1.5 Use of terms and gender pronouns

The expressions “thesis editing”, “dissertation editing”, “editing of theses and dissertations”, “academic editing” and “editing of postgraduate research writing” are used interchangeably in this thesis. The intention is not to imply that theses are equated with dissertations, or that the editing of postgraduate research writing always and only involves theses or dissertations. Aside from the attempt to achieve a certain stylistic variation, this alternation of terms is intended to convey the scope of the editing model which was designed in the course of this study; the model is designed for the editing of theses and dissertations as the final steps in postgraduate research writing in the first place, but it is not restricted to application in thesis or dissertation editing. The model is equally intended for other types of postgraduate research text which might need to undergo editing, such as essays, academic articles, research proposals, research reports etc.; hence the alternation of the above terms. Where “thesis editing” or “academic editing” is written, “dissertation editing” and “editing of postgraduate research writing” are equally meant, and vice versa.

A distinction between the terms “thesis” and “dissertation” is difficult in so far as there is no universal standard regarding these terms. It seems that practically every university has its own way of referring to these kinds of research document. While Stellenbosch University, for instance, uses the designation “thesis” in the context of a Master’s programme and the term “dissertation” in the context of a doctoral degree (Steenstra 2013), other institutions may use

these two terms differently, or they may even “use just thesis or just dissertation” (Steenstra 2013) to refer to both a Master’s final research work and a doctoral study.

In this thesis two final research documents are used as sample texts in Chapters 3 and 4, respectively. Both documents were written in the course of a Master’s degree, but at different universities. The sample used in Chapter 3 was written in 2011 at University A;⁵ the sample text presented in Chapter 4 was written in 2013 at University B⁶. While the designation “dissertation” (University Style Sheet 2009) is used in the writing guidelines for the final research paper in an MSc programme at University A, the term “thesis” (University Style Sheet 2013) is preferred in the writing guidelines of University B for final research writing in an MSc programme.

Since no universal principle of distinction exists between a thesis and a dissertation, the two sample texts used in this study are referred to with the respective designations used by the university at which the texts were written. The sample text used in Chapter 3 is referred to as a “dissertation” throughout this study, since University A prefers this designation in its guidelines (University Style Sheet 2009), and the sample text used in Chapter 4 is referred to as a “thesis” since this is the designation preferred by University B (University Style Sheet 2013).

In the general discussion about editing of postgraduate research writing in this thesis, however, the designations “thesis” and “dissertation” are used interchangeably, as described above.

For the ease of reading, this thesis deliberately refrains from the attempt to use gender-neutral language. The male pronoun “he” is used in this thesis where reference to a person or profession requires the use of a pronoun. It should be emphasised here that the use of the male form has been chosen purely for the sake of linguistic convenience. Wherever a male form appears in this thesis by choice, the female side is equally meant.

⁵ For reasons of anonymity, neither the name of the writer nor the name of the University will be referenced in this thesis. The sample text used in Chapter 3 will henceforth be referenced as “Text A”: the university at which the dissertation was submitted will be referred to as “University A” and the dissertation writer will be referred to as “Student A”.

⁶ To maintain anonymity, the university at which the second text sample was submitted will be referred to as “University B” in this thesis. The text sample itself will be referenced as “Text B”; the two writers of the text will henceforth be referred to as “Student B” and “Student C”.

1.6 Division into chapters

This thesis consists of five chapters. Subsequent to this introductory chapter, Chapter 2 documents a literature review in which a selection of different approaches to editing is discussed and compared. The chapter begins with a review of an editing approach presented by Brian Mossop in *Revising and editing for translators* (2007); more specifically, that part of Mossop's work will be used in which he discusses the editing of original writing (as opposed to the revision of translations, which forms the other part of his work).⁷ The literature review proceeds with an investigation of approaches by Butcher et al. (2006), Einsohn (2000) and Mackenzie (2004), who focus on copy editing in the book publishing industry. The literature review is structured in a comparative manner since the aim of the literature survey is to select that approach which provides the most suitable basis for the design of a practical thesis editing model.

The recent discussion about the role of the thesis editor is further considered in the literature review in Chapter 2 as a determining factor in the organisation and execution of thesis editing assignments. For this purpose, recent work by Kruger and Bevan-Dye (2010) as well as by Van Aswegen (2007) is consulted. Kruger and Bevan-Dye (2010) address certain ethical problems related to the editing of dissertations and theses, and present the findings from a survey conducted among professional editors in South Africa regarding their perceptions of the editor's role in the process of editing dissertations and theses. Van Aswegen (2007) addresses the same ethical questions from her experience-based perspective as a thesis editor.

Chapter 3 presents an analytical description of the practical editing of a dissertation (Text A). This practical editing assignment formed the basis of the procedures of this inductive study. It was carried out by the author of this thesis in order to gain insights into the nature and requirements of practical editing of postgraduate research writing and in order to later compare and combine these practical insights with theoretical input from the literature study with the objective of designing a thesis editing model. Examples from the practical work are presented and discussed in Chapter 3 to illustrate the editing approach pursued. A reflection on the practical work is given, including a retrospective account of observations made and of problems which arose during the editing phase. On the basis of the outcomes from the

⁷ Unless explicitly stated otherwise, any reference to Mossop's *Revising and Editing for Translators* (2007) henceforth concerns the chapters on editing only; the chapters on revising are not of particular relevance for this thesis as they relate to the editing of translated texts rather than to the editing of original writing.

practical study and the literature review, a model is then suggested in Chapter 3 as a possible approach to editing dissertations and theses.

Even though the practical assignment was the first step of this inductive study, it is presented in Chapter 3 after the literature review. This sequence was chosen simply in order to maintain the “usual” structure of a thesis document with the literature review preceding the empirical study. The dissertation represents a sample of second-language writing, which is very common in postgraduate programmes, particularly in the multilingual context of South Africa.

Chapter 4 documents the testing of the practicality of the designed editing model. To this end, the model was applied in another thesis editing assignment, of which examples are presented and discussed in Chapter 4. The application of the model to the sample thesis is subsequently reflected on in order to give a critical account of the practicality of the designed thesis editing model.

Chapter 5 summarises the procedures and findings of the study and offers suggestions for further research.

Chapter 2: Literature review

2.1 Introduction

The literature published in and about the field of editing originates from, and points in, diverse directions. A considerable amount of recent research work from all over the world focuses on the regulation and professionalisation of the editing industry.

This enterprise is a reaction to the much deplored circumstance that “language practitioners the world over have for many years been involved in a struggle for professional recognition” (Blaauw and Boets 2003: 64), and that “text editing (in all its facets) is a complex task that still does not receive any formal or professional recognition” (Gibson 1979: 16-17; Judd 1982: 18; O'Connor 1986: viii; Plotnik 1982: 34 and Stepp 1989: 34-35 in Kotze and Verhoef 2003: 44).

A significant number of published works – mainly academic research results from the past few years – note and address a lack of regulation and professionalisation in the editing industry.

Kotze and Verhoef (2003: 44), for instance, describe text editors as “ghost-writers”. This is to say that even though it is editors who work a text into its desired shape so that it can be published in the first place, they operate as more or less invisible actors, who are not sufficiently credited for their work and often not even regarded as professionals. While some researchers see the reason for that in “the ‘haphazard’ manner by which people in the language profession view language editing as a specialised activity” (Du Plessis 1997 in Kotze and Verhoef 2003: 36), which means essentially that editing is not recognised as a profession, others do not so much blame the lack of the recognition of editing as a profession, but in fact the lack of a systematic professionalisation and regulation of the entire industry. In Van de Poel’s view (2003: 6), for instance, “it is accepted that text editing is a profession in its own right”. She experiences the principal problem in the circumstance that “very little has been done to professionalise this profession in the true sense of the word” (Van de Poel 2003: 6).

Irrespective of such smaller differences between various opinions regarding the level of recognition of editing as profession, the majority of researchers in the field arrives more or

less at the same conclusion: there is a lack of regulation in the editing industry, and the professional editor is not sufficiently credited.

Albeit the professionalisation of the editing industry cannot happen overnight, several successes towards a more regulated industry have been achieved in different places. In 2009 the Editors' Association of Canada (EAC), for instance, published a set of Professional Editorial Standards, which "sets out what editors should do when performing various stages of editing", "tells employers what to expect from the editors they hire" and "shows new editors the range of skills and knowledge they should aspire to" (EAC 2009: Preface). For the same purpose, a similar step has been taken in Australia by the Council of Australian Societies of Editors (CASE) in 2001, which published the Australian Standards for Editing Practice (CASE 2001).

In the recent past South African researchers have also been remarkably productive in their effort to gear the South African editing industry towards better regulation, as the profession of editing was also found to be insufficiently recognised in the South African publishing and language industry (Kotze and Verhoef 2003: 45), and the professional status of editors in South Africa was seen as "largely undefined" (Law and Kruger, 2008: 479).

Blaauw (2001), for instance, approached the promotion of professionalisation through the development of a code of ethics by means of data collection through surveying editors regarding their perceptions as to which elements should be included in a code of ethics.⁸ Such a code was intended to "fill the vacuum in this branch of language practice where no ethical guidelines existed before" (Blaauw 2001: ii). He claims that the presence of a common code with which all professionals in a given field could associate is "an indispensable part of self-regulation" (2001: 3).

In a survey-based study of the state of the South African editing industry regarding professionalisation, Law and Kruger (2008) established two key problems as obstacles to a more regulated industry: first, a lack of standards regulating the industry, and second, the absence of an accreditation process for efficient and fair differentiation between professionals and non-professionals (Law and Kruger 2008: 491).

⁸ For more information on this project, see Blaauw (2001). See also Blaauw and Boets (2003).

Subsequent to the study by Law and Kruger (2008) study, Mary-Ann Law (2010) dedicated her Master's thesis to the development of professional standards for the South African editing industry – similar in their nature to the standards available in Canada and Australia, but adapted to the South African market.⁹ In the literature survey of her thesis entitled “The development of professional standards for editing in South Africa” (2010), Law gives a lucid account of the current situation of the South African editing industry. While most of the recent research regarding the South African editing industry was “intended to highlight the need for professionalisation” (Law 2010: 14), the fact that “very little progress seems to have been made in terms of establishing practical measures that will contribute to the eventual professionalisation of the South African editing industry” (Law 2010: 14) emerges as a key problem in Law's study.

A similar situation can be observed when we look at a smaller sub-field of the editing industry and focus on practical editing in academic settings. There is a flood of style guides available, which promote uniform presentation of both external (i.e. layout, structure) and internal (i.e. language use, spelling) features of a text and define the “correct” choices for a particular style. Just as practically every publishing house has its own style guide, every institution or authority may follow its own style. In academic settings there is no universal style, but “different disciplines have different conventions and these may also differ from one institution to the next” (Delpont 2013), as was confirmed in an e-mail by a staff member of Stellenbosch University's Writing Centre. On that account, it is in fact the exception rather than the norm that universities provide universal guidelines for their students. It is not uncommon that universities offer no guidelines at all, and if they do, the style guides often differ from department to department (Delpont 2013). Moreover, these guidelines often originate from different sources such as the departmental secretary or the supervisor, and students sometimes even use writing style guides from external sources. The writing guidelines used at one and the same university department thus often differ in small aspects, so that no universal writing style can be achieved. Delpont (2013) describes this situation as confusing and “problematic” for postgraduate students.

As far as the editing of research writing is concerned, little progress has been made in providing editors with practical help regarding the procedure and the organisation of the process of editing research texts, and more precisely research writing such as theses,

⁹ See also Law (2011).

dissertations, essays, journal articles, research reports, proposals and so on. Even though this sub-field of editing is a comparatively small part of the editing industry, this thesis will concentrate on designing a model to provide help for the procedure of editing such texts.

While recent research in the field of editing addresses more specific problems such as the regulation of the editing industry in specific settings and the promotion of an accreditation process for professional editors, the greater part of general literature on editing focuses on editing in the publishing industry – naturally there are exceptions – and most of the main work on editing also seems to have emerged from the book and media publishing sectors. This is not particularly surprising, given that the publishing industry is surely the field in which most of the world's written work is processed.

Hence, the available literature concerned with editing can loosely be classified into two categories. The first category consists of approaches to editing by authors such as Einsohn (2000), Judd (2001), Mackenzie (2004), Brooks et al. (2005) Butcher et al. (2006) or Mossop (2007), concentrating mostly on the editing process in a publishing environment rather than on editing in academic settings. These authors, with the exception of Mossop (2007), write about the challenges that confront editors in the process of in-house editing at book or media publishers. These authors provide information about the tasks that an editing job in a publishing house entails, the steps in which these tasks are carried out, and what skills editors in the publishing sector are expected to have, and they also provide present and future editors with expert tips and tricks about the job of preparing a manuscript for publishing.

The second category consists of a multitude of style guides – reference works for the correct use of particular writing styles in different sectors and fields of expertise, such as *The Chicago manual of style*, which is perhaps the most widely used style guide in the USA and currently available in its 16th edition (University of Chicago, 2010), or the *MLA style and guide to scholarly publishing* (MLA, 2008), which is currently available in its 3rd edition and provides widely used guidelines for academic research writing. Even though style guides are not merely designed for editors and publishers but are equally intended for use by writers, they can be seen as an integral component of an editor's toolbox. It would be pointless to try and name them all since there are so many; almost every country, every publisher, every university and every company follows its own style guide.

The works of the first category present the profession of editing in varying degrees of detail. Some authors such as Einsohn (2000) or Butcher et al. (2006) complement an overview of the tasks of editors in the publishing sector with such detailed information about all aspects an editing job may entail – from typesetting issues and detailed grammatical and house style issues to tips and tricks for the editing of different sorts of rather unusual text types – that their work fuses with the category of style guides or reference books. Other authors such as Mackenzie (2004) avoid a perspective that is too focused on detail and concentrate on the organisation and execution of the main steps and tasks that an editing process usually consists of.

In contrast to that, the focus of works of the second category is particularly on the details; the aim of such reference works is to deliver as thorough a catalogue of all elements associated with a particular style as possible as well as their correct usage.

These two categories of literature about and for the editing profession are complemented by other, smaller works which are positioned somewhere between the two categories. These works offer various ideas, perspectives and tips on editing,¹⁰ and sometimes take a slightly more philosophical stance.¹¹

Mossop's approach to editing presented in *Revising and editing for translators*¹² is positioned somewhere between these categories. Mossop's work is reviewed in detail in the literature study in 2.3. The following paragraphs will attempt to position Mossop's book briefly in the field of editing, since his work presents neither an approach with a focus on the publishing industry, nor is it a style guide. Brian Mossop comes from the professional field of translation rather than editing; on his website he describes himself as “a practitioner-researcher in the field of translation”, as a professional translator and a teacher of translation (Mossop, 2012).¹³ The title of his work, *Revising and editing for translators*, implies that his work addresses translators in the first place. However, Mossop treats editing and revising separately on the whole, with editing forming the first and revising the second half of his book. He clearly distinguishes between editing as “finding problems in a text which is not a translation, and then correcting or improving it, with particular attention to making the text suitable for its

¹⁰ See, for instance, Gross (1993) or Sharpe and Gunther (1994). See also Billingham (2002).

¹¹ See, for instance, Gross (1993).

¹² 1st edition in 2001; 2nd edition in 2007.

¹³ For more information, see Brian Mossop's website: <http://www.yorku.ca/brmossop/bm-cv.htm>.

future readers and for the use to which they will put it” (2007: 9), while revising is understood to be “the same task applied to draft translations” (2007: 9).

Substantially, Mossop’s approach can be seen as part of the first category of editing theory on the market; the book has little in common with a reference guide, but it presents the steps and tasks to be performed on different levels of a practical editing job. Mossop’s work differs from most of the other available literature on editing; while most of the classic work was written by editors active in a publishing environment, *Revising and editing for translators* was written by a professional in the field of translation.

This different point of departure might be the reason why Mossop’s approach to editing is considerably more neutral (i.e. in the sense of a general view on editing as opposed to a focus on details) than the perspective of other major works on editing on the market. To illustrate this, the contexts of the field of editing and translation around the time in which the first edition of *Revising and editing for translators* (2001) was written will be compared briefly.

The field of editing is, and will always be, concerned with “get[ting] the book out” and “get[ting] it right” (Mackenzie 2004: 157) – a circumstance which arises from the very nature of the publishing industry with which editing is so closely related. It is a “fast” industry; time pressure is certainly one of its key features, if we think just about the short time span in which newspapers are produced and published, for instance. In order to get things right in a short amount of time, it is vital to comply with the rules – grammar, house style, the correct sequence of steps in the editing and publishing process, and so on. And even though presumably every theoretical and practical field undergoes some change in the course of time, publishing and therefore also editing will always be concerned with complying with house styles and with deciding quickly between right and wrong, since time pressure will always play a role. It is therefore only logical that literature emerging from a publishing environment about and for the work of editors will be greatly influenced by the demands and the pressures present in the industry. It is thus not surprising that, even if such a work describes the processes of an editing job, it may still organise these in a product- rather than process-oriented manner and thus fuse all the different working steps into more or less strongly interlocked patterns of combined work, details and rules in order to save time.

Translation is, of course, also concerned with rules to a significant extent. Grammar and other standards apply here as well as in the editing industry. Time pressure also exists in this field,

since translations need to be published too. However, it seems that there has been a greater flexibility to reflect and to change perspective in the field of Translation Studies than in the field of editing.

The first edition of Mossop's work *Revising and editing for translators* (2001) was written closely after translation studies had opened new territory for itself.¹⁴ Translation scholars had started to approach translation from a different angle. The new perspective¹⁵ avoids any normative notions and does not try to instruct translators in their work in any possible way. It goes beyond the actual practice of translating (even though it does include it) and promotes new insights into translation through detached observation of the translation processes instead.

Translation scholars and researchers began to stand back from the details and rules of a prescriptive approach (which are quite strongly present in editing as a result of the dynamics in the field described above) in order to observe the field systematically and in a results-oriented way. They adopted a descriptive rather than a normative perspective and began to practise what is known as Descriptive Translation Studies (DTS), or in Hermans's (1994) terms, they adopted an "empirical approach".

It might be this very trend towards a descriptive perspective in translation studies which lies at the root of the remarkably neutral or general approach by Mossop, as opposed to the rather prescriptive-normative perspective of other approaches to editing with a focus on the publishing sector.

It is impossible to determine without further research whether this difference between translation and editing theory in terms of the prescriptive-descriptive continuum is merely a result of the age of the respective theoretical fields, or whether there is a general difference between these two fields in terms of their propensity to change perspective. Translation studies seems to be a lot older than the theoretical field of editing. Blaauw (2001:10) notes in this context that while "from the times of Cicero and Horace there has been reflection on the activity of translation, and therefore on a theory of translation" (Bassnett-McGuire 1984: 40 in Blaauw 2001:10), "the other domains of language practice have been provided with very little

¹⁴ A new perspective took shape in the field, beginning in the 1980s. See Toury (1995).

¹⁵ For more information on this course of change of perspective in Translation Studies, see Toury (1995). See also Hermans (1994) and Ulrych and Bollettieri Bosinelli (1999).

or no theoretical foundations whatsoever” (Carstens et al. 1999:1 in Blaauw 2001: 10).

Therefore, it is possible that editing theory has simply not yet arrived at the state of a shift in perspective towards adopting a more empirical stance because of the young age of the field and the hence smaller theoretical output in contrast to translation studies.

A separate comparative study of the two fields of translation and editing with regard to their respective propensity to change perspective might deliver valuable insights into the commonalities and the differences between these two domains of language practice.

Having its roots in the field of translation rather than editing/publishing, Brian Mossop’s perspective on the processes of editing in *Revising and editing for translators* (2007) appears notably plainer, more independent and more generalised than the perspective of any of the other works on editing mentioned above.¹⁶ This difference in perspective could be a result of the fact that Mossop’s work was written at a time when a descriptive perspective was the trend in the author’s professional field, and researchers in the field of translation studies were training to look at the processes of translation from the angle of detached observers in order to learn and understand more about the field’s dynamics. This disengagement from the pressures of immediate practice allowed for a better understanding of the whole; it is often easier to fully picture a situation from a more objective angle. As a participant in the field of translation, Mossop may have been influenced by this trend in perspective, which might be an explanation why his work on editing focuses on the whole rather than on the small details of the process of editing.

This brief comparison of the perspectives of the fields of editing and translation captures only the tip of the iceberg and thus bears the marks of a generalising and simplifying perspective. There may be a lot more to compare between the fields of editing and translation, and the reasons for the differences in the amount of theoretical output as well as for the different dynamics in these two fields are certainly more manifold than sketched here. But however interesting and tempting such a study might be, it would stretch the scope of this thesis too far and has to be left as a research topic in its own right for further research. For the purpose of positioning Mossop’s work in the domain of editing literature and in order to understand why his approach appears more independent and plainer than other works on editing, this comparison must suffice here.

¹⁶ For more detailed comparisons, see 2.3.

2.2 A note on terminological differences

Before proceeding to a comparison of how different sources classify the different levels of editing and tasks of editors, it might be of interest to note that there is no uniform definition of what an editor, a text editor, a copy editor or copy editing is – views and designations diverge seemingly infinitely.

Such an “indistinctness and confusion about text editors, their job designation and their task description”, as Kotze and Verhoef (2003: 37-38) claim, leads to a “negation of their active role in the text editing process” and also to a “lack of positioning of what is meant by text editing”. Whether an inexplicit definition of the role of text editors automatically means the negation of their role altogether is debatable. However, a general lack of unity regarding the job designation and the tasks of text editors is evident in the diverging designations used by different sources of literature in the field of editing.

While for one party copy editing may be only a part of a much more complex set of tasks pertaining to the general responsibilities of an editor (e.g. Mossop 2007), another party might view copy editing as the definition of the whole set of editing tasks embodied in the profession of a copy editor in the publishing industry (e.g. Butcher et al. 2006). Different sources may use the same terms, “copy editor” or “editor”, to refer to the same profession on the whole, but may have different understandings and definitions of what skills and tasks this profession entails. After all, “editors working in the book-publishing industry are required to perform tasks that may vary from the tasks required of editors working at a magazine or a newspaper” (Law 2010: 7). A noticeable discordance about how the task or the profession is spelled out alone suggests that there is no uniform picture of the profession. While Mossop understands copy editing as only one level of a set of at least four core levels of editing, the tasks of a copy editor in the publishing or media industry usually far exceed the amending work on one level of a text only. Copy editors in the publishing sector might take care of parts or even all four editing levels described by Mossop, and their spectrum of tasks might comprise a range of additional functions. In essence, the concept “copy editing” is interpreted in different terms by different groups of people.

2.3 In search of a suitable approach for the editing of research writing: a selection of approaches in comparison

The following sections provide examples of approaches to editing from different authors. This literature review does not intend to cover the wealth of existing expert advice for all aspects an editing job might entail – from detailed grammatical questions to copyright matters or particulars about editing in a publishing house. For such detailed advice, the works by the respective experts may be consulted separately. This review will concentrate on how the selected authors approach the actual process of editing, and on how they categorise the tasks pertaining to this process. The respective approaches shall be examined with regard to their suitability for their adaptation to design a model for the editing of postgraduate research writing.

2.3.1 Mossop

In this section Mossop's approach presented in *Editing and Revising for Translators* (2007) will be examined and presented as one theoretical approach to editing.

The core of Mossop's approach consists of four clearly distinguished types of editing. While Mossop uses the term "types" (2007: 27) in his work, they are referred to as "levels" in this thesis. This designation has been chosen to metaphorically refer to different levels of depth in a text at which these four editing types become effective, respectively. The notion of "different levels of depth" may hereby be explained as follows: certain editorial changes will alter the text at a deeper, more substantial level than others. Changes to the content or the structure, for instance, affect the text on a more substantial level than corrections of grammatical errors or stylistic changes, which take effect on a more superficial level of the text. Hence, the term "levels" is used in this thesis for Mossop's four types to integrate the notion of these different degrees of depth in a text at which editing can take effect. In this section, Mossop's approach will be presented and theoretically applied specifically to the task of thesis editing.

2.3.1.1 Copy editing

Mossop's copy editing can be described as a text-amending activity on the most superficial level of a text (see also 2.3.1), or in other words, as "line-by-line, 'micro-level' work", where the editor focuses on "small details" (Mossop 2007: 37). Mossop defines copy editing as

“checking and correcting a document to bring it into conformance with pre-set rules” (2007: 37). The copy editors’ task consists predominantly of making the correct choice between right and wrong on the levels of grammar, spelling, punctuation, syntax and idiom. However, copy editing also reaches out into areas where the border between right and wrong is blurred and factors such as preference or tradition come into play, as for instance on the register of language or house style. (Mossop 2007: 27).

House style is a particular writing style stipulated by an institution such as a government, a newspaper, a university press or an editors’ association in order to create a characteristic “voice and visual image” for that particular institution (Mossop 2007: 38-39). A house style is usually written down in a “set of instructions” usually called a “style sheet” (Mossop 2007: 38). Mossop (2007: 38) states that authors are sometimes provided with such a style sheet by the editor and are also often instructed by editors to conform to an even more comprehensive “style manual or guide” of considerable length. This presumably applies predominantly in settings in which the collaboration of a publishing house or a newspaper, an editor from that institution and an author or journalist are planning to work together in a publishing process. In the case of thesis editing, however, the editor will usually not provide the research writer with a style guide, but rather the university or the university department at which the student is preparing a thesis will provide the student with the respective style sheet or style guide (if there is one), and the editor as the last in line should be provided with the university’s style guide by the student. A style sheet or style guide deals with “mechanical matters” such as spelling preferences, quotation rules or instructions regarding bibliographical style (Mossop 2007: 38). It is the copy editor’s task to “check that the instructions [given in the style sheet] are followed” (Mossop 2007:39), and in the particular case of thesis editing, it is the thesis editor’s task to check if the student followed the university’s preferred style manual or style sheet.

Furthermore, it can be part of the copy editor’s task to ensure *consistency* in typography and terminology as well as in paragraph layout and the “positioning, numbering and appearance” of headings (Mossop 2007: 27), even though strictly speaking layout matters and the correction of headings usually fall under structural editing (see Mossop 2007: 74-79). Apart from the fact that erroneous typography can create wrong or unintended meaning, Mossop (2007: 37) argues that the correction of spelling errors is particularly important because such errors will have a negative effect on the readers’ image of the writer. Even though one might think that what counts most in a thesis is a logical presentation of the argument, because

students are expected to show that they can think independently and present their ideas in a meaningful argument, spelling errors can cause the examiner to “lose confidence in the actual content of the work” (Mossop 2007: 39) and adopt an overly critical position. Mossop argues that the “subconscious” (but not necessarily right) conclusion the readers will draw if they come across spelling errors is that “there must also be errors in the facts or arguments presented” (2007: 39). It is therefore vital that such errors are removed from a thesis, not least to prevent an unnecessary loss of marks. This is in fact valid not only for spelling errors but for all sorts of careless mistakes such as missing words, cut-and-paste errors or word repetitions.

Idiom-related and syntactical errors can occur particularly if the writer is a non-native speaker such as in the case of the sample texts used in the Chapters 3 and 4 of this study. While texts written by native speakers are likely to be “syntactically correct and idiomatic”, the writing of non-native speakers or people working in multilingual environments can exhibit “unidiomatic usages” of various kinds, which the editor is responsible to detect and correct (Mossop 2007: 40). Mossop argues that it is important for the editor to be familiar with the native language of the writer. In certain cases it would otherwise be difficult to infer from an incorrect sentence what the writer intended to say, which makes the correction of the sentence difficult or impossible (2007: 43). The overall impression of a thesis will be better and more convincing if language and syntax are correct and the text is easily comprehensible.

However, Mossop warns that there is some individual variability as far as the choice of syntax and idiom is concerned. In other words, preferences regarding syntax and idiom can “vary somewhat from person to person” (2007: 44). Editors would go too far by following their personal preference and changing a correct sentence, just because they favour another way of putting it. In interfering with the creative freedom of the original author, they would act as an “authority” and give the text an overtone of their own “personal linguistic idiosyncrasies” (Mossop 2007: 44). When editing research writing, it is important to keep this in mind, since students are evaluated according to their ability to present an argument. Editors should thus interfere in a way in which the overall picture of the thesis is kept as authentic as possible.¹⁷

The correction of *punctuation errors* is presented as another vital aspect of copy editing. In Mossop’s terms, punctuation includes not only punctuation marks such as commas, full stops, quotation marks and dashes. In a broader context, it can also involve matters such as

¹⁷ See 2.5 for further discussion.

paragraph indentation, capitalisation at the beginning of each sentence or the use of emphasis by underlining parts of the text (Mossop 2007: 46), even though it can be argued that these are in fact concerns of structural editing. As far as the use of commas is concerned, Mossop points out that opinions differ here as well, because “most uses of the English comma are not bound by rules at all” (2007: 46). He distinguishes between “heavy versus light” punctuation, the former relating to the extensive use of commas in the 19th century to “mark grammatical boundaries”, while the latter describes a much lighter use of commas typical for the 20th century (Mossop 2007: 49). Mossop explains this trend towards lighter punctuation by the fact that “sentences became shorter” in the more recent past on the one hand, which made extensive punctuation within sentences partly obsolete; on the other hand, he claims, commas “became optional at many boundaries” and the “lightest” form of comma use would be one which only draws on commas where they are “absolutely necessary to avoid misunderstanding” (Mossop 2007: 49). Mossop recommends to use a lighter punctuation and to rather not use a comma in cases of doubt (2007: 49). As pointed out in 3.2.1.3 in greater detail, the use of commas in a thesis should be guided by the endeavour to avoid misunderstanding and to help the reader.

As another component of copy editing, Mossop discusses the issue of “correct” or “proper” language *usage*, which he sees as “a matter of debate” (2007: 50). He argues that correct usage is always defined by a certain degree of standardisation and prescription, which is not always helpful, since it can lead to a restriction of the number of variations available and can eventually even create ambiguity or a change of meaning (Mossop 2007: 51-53). Therefore it is not very practical for an editor to follow any specific standards for correct usage at any cost, but it is necessary to decide in each instance on a suitable approach to language usage in each particular situation (Mossop 2007: 54).

Consistency is equally considered part of copy editing (Mossop 2007: 37), even though it is discussed in a separate chapter of Mossop’s work. Mossop describes consistency as the “chief purpose of house style sheets and style manuals” for material which is meant to be published (2007: 86) – as is mostly the case with research writing. In order to achieve consistency in a purposeful manner, the editor must reflect which features of the text are to be consistent, such as terminology, page layout or the way in which the readers are addressed, and whether consistency is to be maintained over a particular “range of texts” or merely in the text to be edited (Mossop 2007: 86). With regard to theses and dissertations, it can be noted in general that it is certainly beneficial to devote sufficient attention to matters of consistency. A certain

degree of consistency is surely part of the requirements of research writing; inconsistency with regard to certain features of a document that presents scientific research would not only easily evoke the impression of insufficient scientific integrity, but might also create undesirable (or even dangerous) ambiguity in the argument. Apart from the fact that consistency should be assured in a thesis with reference to the style guide (should the university have provided one), consistency with regard to technical aspects such as font, spacing or layout is just as essential as consistency in the argument, in terminology, or in the register of the language. As far as terminology is concerned, consistency will even have to go beyond thesis or dissertation at hand; the terminology used in the thesis should be in line with the terminology of the scientific field in which the research work is written – after all, it is part of the purpose of thesis writing to test the writer’s capability to participate in the discourse of a particular scientific field through the use of the corresponding terminology.

However significant, consistency is not to be treated as an end in itself; it is only problematic if communication is affected (Mossop 2007: 91). This is not to say that consistency can be disregarded. Mossop simply warns against “over-consistency”, and more particularly against the elimination of “synonyms, explanatory paraphrases of terminological innovations” (2007: 90), as long as communication remains intact. For non-expert readers, Mossop argues, synonyms can be both helpful and confusing. On the one hand, they may help the reader understand a concept better, but on the other hand, they may confuse the readers (2007: 90). Synonyms may be helpful and diversifying as long as the reader has the necessary background knowledge to identify a term as a synonym of another. If terms are used as synonyms, however, which non-expert readers might not be able to identify, confusion rather than clarification may be the result. If a medical brochure, for instance, is composed to familiarise a non-expert readership about the signs and symptoms of a heart attack, the use of the medical term “myocardial infarction” may not be understood by the readers as a synonym for “heart attack” if the readers do not have the expertise to understand or infer the meaning of the term. Consequently they may assume to be presented with two different concepts. Whether synonyms help or confuse seems to depend to a great extent on the informed choice of the writer according to the level of expertise of the intended readership. As far as research writing is concerned, caution should be exercised in editing for two reasons. First, synonyms or explanatory paraphrasing might be a valuable means for the writer to show that he has understood the matter and can reproduce it in his own words. Second, well-conceived paraphrasing demonstrates a certain flexibility in expression, which is expected from postgraduate writers. Thus, inconsiderate elimination of synonyms and paraphrases during

editing might miss the point, and in fact even impair the quality of the text. Editors should, however, scrutinise synonyms and paraphrasing carefully, since students are expected to use and handle the scientific concepts of their field in appropriate language, and an overuse of unsuitable synonyms and paraphrases would certainly create the impression that the writer has not internalised the terminology or the concepts of his field of research.

Mossop further cautions against over-consistency with regard to the formality of the language used in a text (2007: 91). He notes that it is not uncommon for some types of writing that various levels of vocabulary and degrees of formality are mixed, in particular if a readership with different levels of subject knowledge is addressed (2007: 91). This is not necessarily the case with research writing, however. Research reports such as theses and dissertations usually address researchers and the broader academic community of the subject area in which they are written, and hence the subject knowledge of the audience can be expected to be more or less on the same level. The levels of vocabulary and formality in research texts should therefore be adjusted to the expectations of this particular audience rather than mixed too extensively. The vividness of a text may increase if not only the same few formal expressions are used over and over again; a certain variation in this respect will certainly be accommodated by an academic readership. Thesis editors should, however, make sure that an adequate and consistent degree of formality is ensured. Theses and dissertations are read and evaluated as serious academic texts, and the writer's ability to produce scientific writing and to meet a certain standard of language proficiency will play a role in the assessment of a thesis. Therefore, variation is certainly welcome, while overly informal language is not.

Consistency in thesis editing should thus be given adequate attention, but treated with consideration and tact.

The copy editor's responsibility covers a wide variety of errors, and Mossop (2007: 55) notes that it is difficult to detect them all at once. He suggests that it may be necessary to "work through a text twice" and focus on different aspects in a subsequent reading to cover this variety of possible mistakes.

2.3.1.2 Stylistic editing

Stylistic editing is concerned with text units rather than with the text as a whole, but the focus of stylistic editing lies on the readers and "the use they will make of it" (Mossop 2007: 60).

Mossop divides this editing level into two phases. In the first phase the editor will tailor the language of the text to the readers' requirements and attend to vocabulary and sentence structure in order to adapt them to the readers' needs and their characteristics (Mossop 2007: 60). In the second phase, which is described as "smoothing" (Mossop 2007: 64), the editor focuses on clarity in the presentation of the argument.

For the first phase Mossop presents six categories, within which the readers' characteristics are defined to facilitate linguistic and syntactical adjustments of the text to the audience. The first category is the readers' *motivation* to read the text and their tolerance with regard to the quality of the work. The more interested they are in the topic, the higher their tolerance of poor editing, even though at some point or other the image of the writer will unavoidably be affected (Mossop 2007: 60). A thesis is a special case, however, since its readers will be those who evaluate and mark it, and even utilise its findings in further research. It can be assumed that even though they have a certain job-related interest in reading such work, they will obviously have little tolerance of poor writing or editing.

The second characteristic of the readership, their *knowledgeability*, refers to the "extent" to which they are "familiar with the concepts, terms and phrases" of the topic presented in the text (Mossop 2007: 60). The higher the expert status of the readers in the particular topic, the less redundancy and explicitness are necessary. In the case of a thesis, the knowledgeability of the reader can be expected to be high, with research writing usually being examined by specialists in the field. Nevertheless, the concepts dealt with in the work should be presented explicitly enough to show the examiner that the student has fully internalised them.

The readers' *education* is the third factor influencing the stylistic editor's decisions. The lower the educational level of the reader, the less sophisticated the vocabulary of choice should be. If the text is intended for a mass readership, it is the editor's task to guarantee that readers of different educational levels will be able to understand the text (Mossop 2007: 61). Research writing, again, is a special case in this respect. It is not intended for a mass readership, but firstly, for examination by a relatively small number of experts, and secondly, perhaps for a similarly small scholarly audience, who might use a thesis or dissertation for scientific purposes. All these readers can be considered experts. They will expect a certain degree of expertise, which, amongst other aspects, becomes apparent in subject-specific terminology used in the text.

Mossop presents *time and place* as the fourth category of readership characterisation. The editor must consider the situation of the reader. This includes consideration not only of the temporal or historical position of the readers, but also of their geographical position, which might not be the same as that of the author (Mossop 2007: 62). Parts of the wording of the respective text might need to be adapted to the norms of language usage of the historical era or the geographical area of the reader. An older text might have to undergo editing before being presented to a new readership; old-fashioned expressions might have to be replaced with more contemporary versions to accommodate the new readers (Mossop 2007: 62). This factor is not always, but may sometimes become relevant in thesis editing. These are usually examined shortly after they have been finalised, but not necessarily in the same geographical area; a thesis might be sent abroad for examination. In such a case differences in spelling conventions such as the differences between American and British English may become particularly relevant in thesis editing. Apart from that, and irrespective of the place of thesis production and examination, non-native writers might unintentionally merge different language conventions of different areas.. In this case the editor should see to it that either of the two is used consistently.

The *writer-reader relationship* is the fifth factor that needs consideration in the process of tailoring the language to the readers' requirements. The degree of formality is determined by the nature of the relationship; the greater the distance between writer and reader, the more formal the text,. It is the stylistic editor's task to ensure an adequate reflection of the intended writer-reader relationship through an adequate level of formality (Mossop 2007: 63). Research writing should reflect a neutral relationship between writer and reader. A thesis will most likely not be read favourably if the language of the work is overly formal. A too familiar tone, however, would not be appropriate either; a thesis is intended to be taken as serious scientific writing, and the relationship between a thesis author and the examiner is usually distant, given that they are not supposed to know each other. Therefore, a thesis should exhibit an adequate degree of formality.

The *reader's use of the text* is not as directly a characteristic of the reader as the other five factors; nevertheless, it affects the editor's choices in terms of vocabulary and syntax. Mossop argues that it is important "how, why and where" the text will be read (2007: 63). It makes a difference whether a text will be read aloud to instruct someone else in a certain activity, whether it will be read in a classroom or in a court, whether it will be read as a whole, or if only certain parts of it will be consulted, and so on. All these factors can, for instance, have an

impact on the length of the sentences (Mossop 2007: 63). Research writing will certainly be examined as a unit, most likely read in silence and not as an instruction, and the place where it is going to be read does not particularly matter. The focus will be on the reason why the text is read, namely “to make a decision” (Mossop 2007: 63) in the evaluation of a student’s work.

The second phase of stylistic editing is referred to as “smoothing” (Mossop 2007: 64). In this phase the editor removes ambiguities from the text and ensures that the reader can access it with ease, make sense of the ideas presented and process the information without difficulties (Mossop 2007: 64). The editor is expected to guarantee that:

- the readers are able to establish the relationship between all aspects in a sentence;
- the positions of subject and verb of a sentence are clear and that these two are not too far apart;
- the sentences are correctly linked to each other so that the flow of the text is not interrupted;
- words with a connecting function such as ‘but’ and ‘therefore’ are in the right place and are not ambiguous, false or deceptive;
- the form in which something is expressed matches the form of the content of what is expressed, for instance, “parallel ideas” are expressed “through parallel forms”;
- references and antecedents to the pronouns in a sentence are made in a clear, unambiguous way;
- ambiguous structures become clear in context.

(Mossop 2007: 64-69)

Mossop (2007: 69) points out that, on the one hand, a text needs to be readable through “smooth-flowing” language and through its adaption to the needs of the reader, and on the other hand, it needs to be made clear through proper logic and the removal of contradiction. He warns furthermore that a text is not necessarily clear only because “its ideas are simple”, but that clarity is a function of logical presentation (2007: 69). It is the stylistic editor’s task to guarantee that a text is adapted to its intended readers’ capability of processing it.

As a “test record” of a student’s capability to grasp and logically present abstract concepts, a thesis will certainly involve ideas of higher complexity. Ambiguities in the text might raise doubts in the examiner about whether the student has actually internalised the concept in

question and has only failed to present it in unambiguous terms, or whether the student has failed to grasp a complex idea and is thus unable to represent it logically. As it is expected of thesis writers to be able to both internalise an idea and elaborate on it in an explicit way, any ambiguities and contradictions will have a negative impact on the reader's comprehension of the text and not least also on the marking of the thesis, and should thus be avoided categorically. The editor of a thesis is responsible for the detection of such deficiencies; however, there is controversy about whether it is the editor's task to correct them.¹⁸ As it is still the student whose information-processing capabilities are under examination, it might be a more appropriate editing strategy to merely point out such flaws to the student in order to give the student the chance to correct the problem using his own means of expression.

2.3.1.3 Structural editing

Structural editing refers to amending the structure of a text. Mossop distinguishes between the conceptual structure of a text, which relates to the way in which an argument is presented, and the physical structure of a text, which relates to the arrangement of its physical components such as headings, paragraphs, lists, graphics and similar items. The task of a structural editor is "to help the reader follow the conceptual structure by making adjustments to the physical structure" (Mossop 2007: 74).

Mossop identifies several problems that typically arise in prose texts and need the structural editor's attention. *Missing markers* is one such problem. Structural markers such as 'first ... second ... third' help the reader to follow the argument. If such markers are omitted, the readers might not understand the order of the text (Mossop 2007: 75). Furthermore, structural editors are to correct *unfulfilled announcements*, which means that a certain topic is announced to appear in a given section of the text, but it either appears somewhere else or not at all (Mossop 2007: 75). *Empty backward references*, in which the author refers back to something which has never been introduced, also need editing (Mossop 2007: 75).

A similar problem is *false backward or forward references*, where a certain page number is mentioned to refer to specific information. The page referred to, however, contains no such information (Mossop 2007: 75). Equally disturbing are *unexplained acronyms*. Whenever the name of an institution, company or organisation is introduced in the text, the full name should be given before it can be referred subsequently to with an acronym or another short form.

¹⁸ This aspect is further discussed in 2.5.

(Mossop 2007: 76) Furthermore, the editor must ensure that the *references to graphics and tables* are correct and clear. Instead of being referred to by page number or by a description of their location in the text such as “the following table”, they should be numbered and referred to with their respective number (Mossop 2007: 76).

Another structural problem is *poor paragraphing*. Paragraphs provide orientation for the readers and help them see what belongs together in a text (Mossop 2007: 77). Mossop argues that even though shorter paragraphs are generally easier to capture, this should not be the main criterion in deciding on paragraph length. Paragraphs “should be correlated with the topic” (2007: 76). As a consequence, a text ideally consists of paragraphs of different length, adjusted to the content.

The heading system is another matter that needs the editor’s attention when working with the structural level. A heading system must be clear and work hand in hand with the rest of the text. Otherwise the reader will have difficulty in following the content and the text will lose credibility. Misconceived headings (Mossop 2007: 77), which announce a certain topic not dealt with in the subsequent text body, indicate that the writer “got off-topic” without adapting the heading to the text (Mossop 2007: 77). It is the editor’s task to detect such misconceived headings and adapt them to match the respective text body. Apart from that, the structural editor is expected to ensure that the heading system is not confusing for the reader. Headings should be numbered, positioned and generally formatted consistently, because such features are “visual signals of the structure of an argument” (Mossop 2007: 77). Subheadings in a heading system both indicate where the topic changes and help the reader follow the structure of an argument (Mossop 2007: 78). If there are too many sub-layers, the readers will be confused rather than assisted. If sub-headings are missing where they would “make the relationship [between paragraphs] explicit” (Mossop 2007: 78), however, the reader needs to make an extra mental effort relating the paragraphs to each other. Discrepancies between the headings in a text and those in the table of contents are also extremely disturbing and misleading for readers (Mossop 2007: 78), which has a negative impact on the credibility of the text. The structural editor must therefore ascertain that the headings in the table of contents match those in the text, and that the page numbers indicated for each respective heading in the table of contents correspond to the respective page numbers in the text. As discussed in more detail in 3.4.1, the creation of a functional heading system might be seen as part of the capabilities students are to demonstrate in thesis writing. Hence, while Mossop’s suggestions with regard to the editing of the heading system certainly apply to texts which are

prepared for a publisher, such intervention may be seen as inappropriate for the editing of academic texts and may be counted not among the thesis editor's but among the thesis writer's responsibilities.¹⁹

Apart from such "smaller-scale changes", structural editing can also involve "large-scale work" in the form of rearrangement and shifting of entire text parts (Mossop 2007: 74). Structural editing can be very time consuming, especially if the argument of the text is low in quality from the start because of the absence of a golden thread. At some point, a text might even be considered as not worth editing and it would be more efficient for the student to rewrite it altogether. Rewriting, however, lies beyond the responsibilities of Mossop's structural editor. Rewriting is especially critical in the case of research writing, in which the work is supposed to be done by the student. If there is no structure and no logic in the work whatsoever, a prospective and reasonable approach would be to point out to the student where the general problems are, and to suggest the student rewrite or restructure the problematic parts altogether before the work can be edited. It may be the editor's right to reject a commission,²⁰ and editors of research writing might consider this not only a right but a responsibility. If the structure of a thesis draft is so poor that the amount of work for the editor approximates the amount of work necessary to rewrite the thesis, the thesis might no longer qualify as the student's original work.²¹

If a thesis qualifies for editing, the structural editor will work on the areas described above. However, it would be appropriate to adopt an interactive and communicative approach, in which potential deficiencies are pointed out to the student and solutions are suggested, rather than an authoritarian approach, where the editor simply makes changes and imposes his own ideas on the student's work. The less editorial finish on a thesis, the more authentic the final result in terms of originality.

2.3.1.4 Content editing

Content editing can be understood as the addition or deletion of information. On all other three editing levels the given information may be re-organised or expressed in a different way, but the editor will not work on the information as such. On the level of content editing, however, the information in a text will be checked for correctness and it may be changed if it

¹⁹ As for instance stipulated in IPEd (2010), Kruger and Bevan-Dye (2010) and in EAC (2012).

²⁰ See Van Aswegen (2007: 1147); see also discussion in 2.5.2.1.

²¹ For further discussion see 2.5 and 2.6.

is found to be erroneous. Mossop defines content editing as “checking and correcting a text for its ideas” and notes that on this level of editing, additions or subtractions may be requested (Mossop 2007: 80).

Mossop identifies three major categories of substantial errors. First, a text may exhibit *factual errors*, which are difficult to recognise for readers and editors who are not very well acquainted with the topic discussed. Subject-specific texts therefore “need to be content edited by subject-matter specialists” (Mossop 2007: 81). In a thesis, false facts are especially fatal, but it might not be justified to expect an editor to check and correct them, unless it has been explicitly stated as part of the commission accepted by the editor. The inspection of a thesis for factual correctness and completeness is seen as part of the supervisor’s responsibility as a subject-matter expert.²²

Sometimes a concept in a text may not be articulated quite clearly or may be presented in a misleading way. Mossop terms these errors “conceptual errors”; they are often “subtle” and can only be detected by an editor who follows the argument “very closely” (Mossop 2007: 82). In some cases the editor may find it difficult to understand what the author intends to say. In this case the editor is confronted with an “obscure passage” (Mossop 2007: 82). Whenever possible, the editor should consult the author and solve the problem before recommending, or even introducing, his own interpretation in the text. Consultation with the writer or an expert is especially important, since they might identify unfamiliar expressions as correct jargon. It would be unprofessional of an editor to introduce a mistake to the text by relying on logic in such a case instead of consulting the client (Mossop 2007: 83).

The second category of content-related errors is termed *logical errors*. In Mossop’s definition, these include “contradictions, nonsense, tautologies, impossible time sequences, and confusions of cause and effect” (2007: 83). Whenever the editor is not able to identify what the author intended to say, the text should be referred back to the writer to clarify his intention (Mossop 2007: 83). Mossop warns that these kinds of errors are not always obvious and are easily overlooked if “your attention is not on meaning” (2007: 84). His warning emphasises the purpose of Mossop’s (2007: 35) suggested editing strategy with separate phases, each focusing on only one of the four levels of editing. By means of such a strategy, the editor can

²² As argued inter alia in IPEd (2010: 2) and Kruger and Bevan-Dye (2010: 162). See 2.5.1 for more detailed discussion.

fully concentrate on meaning during the content editing phase, and on the respective features related to the other three levels in separate phases.

Mathematical errors are the third category of content-related mistakes in a text. Mossop indicates that these are frequently careless mistakes such as misplaced decimal points or wrong additions, but they may also be a function of either conceptual fallacies, or mere miscalculation (2007: 84). Mathematical errors need not but can be very problematic. In a thesis they will certainly not contribute to the credibility of the work and will most likely have a negative effect on the assessment. For instance, if it is a negligible typing error, but the concept of discussion or calculation is still comprehensible and leads to the right conclusion, a mathematical error might not have severe consequences. If, however, the entire argument is distorted and falsified, a mathematical error can affect the assessment drastically.

Content editing is extremely vital in the case of research writing. Both factual and logical errors suggest sloppy research and will have a negative impact on the assessment of the thesis. Once again, the editor's approach to content editing should be consultative rather than authoritative, especially if the editor is not an expert in the subject field. Whenever doubt arises about the correctness of the content, the editor should inform the student about such doubt and explain the problem. The student can then review the passage and confer with the supervisor if necessary.

The four levels of editing discussed by Brian Mossop present a very valuable guide for editors, particularly for those still in training. Illustrating them with various examples makes Mossop's approach instantaneously practicable. Mossop recommends that learners "master each of the types of editing" in separate steps before combining them (2007: 35). He suggests that an editor should begin with structural editing, followed by a content edit and stylistic editing, before copy editing is done in a last run-through. He argues that it would be "wasted work" to start with copy editing (2007: 35) and generally recommends proceeding to copy editing on the micro level of a text only after macro-level work has been completed. It would, after all, not be efficient to spend time on amending the typing errors in a sentence, which has to be changed entirely because the content is wrong, or in Mossop's words, "there is no point copy editing a paragraph which the author will later delete" (2007: 37) because it is factually incorrect. Mossop recommends that learners should only carry out a combined edit if they are able to manage each editing level separately. He notes that the chance that errors are missed, or even introduced, rises with a combined edit (2007: 35).

2.3.1.5 Gatekeeper and language therapist: Mossop's two ways of amending texts

In the first chapter of *Revising and editing for translators* (2007), Mossop explains the necessity of editing and revising and first gives an overview of some of the challenges with which editors and revisers will be confronted in the course of their work. As part of this overview, Mossop describes two ways in which a text can be amended. Mossop emphasises that a text can be *corrected* on the one hand, and it can be *improved* (Mossop 2007: 17) on the other. Mossop attributes these two ways of text amendment to two different roles that an editor or reviser can assume, namely that of a “gatekeeper”, on the one hand, and that of a “language therapist”, on the other (2007: 17).

Mossop's gatekeeper attends to all aspects associated with the removal and correction of all erroneous parts of the text and to the adaptation of the text to general textual rules such as a “society's linguistic and textual rules” (Mossop 2007: 17). Where a publisher is involved, the gatekeeper's function also entails as well to ensure that the text conforms to the publisher's goals (Mossop 2007: 17). Essentially, the gatekeeper is concerned with putting *right* whatever fact or aspect of the text is regarded as *wrong*.

Unlike a gatekeeper, the language therapist is not engaged with right and wrong in the first place, but with enhancing all the linguistic aspects of a text, which are not necessarily wrong, but perhaps also not ideal for the purpose of the text. By fine-tuning the language of the text, Mossop's language therapist “improves the text to ensure ease of mental processing and suitability of the text for its future users” (Mossop 2007: 17). While the gatekeeper concentrates on facts, rules and on the publisher's interests, the language therapist's work caters for the wellbeing of the readers and, as far as the image of the writer is concerned, for the writer's wellbeing too.

2.3.2 Butcher, Drake and Leach

With *Butcher's copy-editing* (2006), Butcher et al. provide a comprehensive book “widely used as a reference guide for copy-editors” (Butcher in Butcher et al. 2006: ix). The work focuses on copy editing in the book publishing industry. After outlining the copy editor's function and identifying and discussing three main stages at which a copy editor intervenes, Butcher et al. concentrate on more specific sub-sections of editorial work in a publishing setting.

Butcher et al. distinguish four “kinds of editing” (2006: 2). These are presented in the following sections.

2.3.2.1 Substantive editing

Substantive editing, as the name suggests, is primarily concerned with the content of a text. Improvements may be suggested by the editor, even rewriting of the content is possible, provided the author’s consent has been obtained (Butcher et al. 2006: 1). While Mossop’s content editing focuses on the addition or deletion of information and on the correction of erroneous facts, for Butcher et al. substantive editing includes improvement of the organisation and possibly rearrangement of the text (Butcher et al. 2006: 1). In Mossop’s terms, these tasks would be classified as pertaining to structural editing and ideally be carried out separately from amendments to the content. Furthermore, Butcher et al. consider legal concerns such as plagiarism, libel and copyright matters as part of substantive editing. While copyright is usually more of a concern in the publishing industry, the issue of plagiarism plays a vital role in theses and dissertations. Being very general, Mossop’s approach does not include either of these concerns. Since the issue of plagiarism plays a role in theses and dissertations, this aspect shall be considered and integrated into the projected editing model. The matter of plagiarism needs to be addressed as a possible source of error in academic writing, even though it is to be clarified whether it is the academic editor’s responsibility to identify and address instances of plagiarism. This issue will be accommodated in the projected editing model as a relevant point of negotiation in thesis editing. Since the elimination of plagiarism involves either the addition of a reference, the deletion of the plagiarised idea or the rewriting of information, Mossop’s level of content editing seems to be the most appropriate level for the inclusion of a consideration of the issue of plagiarism.

2.3.2.2 Detailed editing for sense

This category involves removing contradictions from the text and ensuring clear presentation of the author’s intended meaning (Butcher et al. 2006: 2), both of which correspond with aspects of Mossop’s structural and content editing. Furthermore, for Butcher et al. detailed editing for sense entails consideration of punctuation and abbreviations, which are copy editing matters in Mossop’s approach. “Choice of words” (Butcher et al. 2006: 2), another element of this category, is not precisely defined and could thus possibly overlap with either Mossop’s copy editing component dealing with idiom, or with tailoring the language to the

readers' needs, as part of Mossop's level of stylistic editing. Controlling the correspondence between information in tables as well as between illustrations and the running text is another part of detailed editing for sense (Butcher et al. 2006: 2); Mossop's four-level approach to editing would categorise such work as part of structural editing. Obtaining of copyright for quotations and illustrations and addressing "other legal problems" (Butcher et al. 2006: 2) are tasks which also belong to Butcher's category of detailed editing for sense.

2.3.2.3 Checking for consistency

This third category presented by Butcher et al. (2006) affects at least two levels of a text. According to them, consistency is a matter of micro-level matters such as spelling and the "use of single or double quotes", both either determined by a house style or by the author's own style (Butcher et al. 2006: 2) Furthermore, this category also involves the correct and consistent numbering of illustrations and tables as well as accurate cross-referencing and the consistency check of the bibliographical references (Butcher et al 2006: 2), elements concerning both the micro and the macro structure of the text. If customised to Mossop's four levels of editing, Butcher's consistency check affects at least the levels of copy editing and structural editing. Mossop himself presents consistency issues in a separate section not included in any of the four levels, since in his terms consistency can concern practically any level of a text (Mossop 2007: 87). Mossop does not restrict the levels of editing where consistency work is relevant; in his terms the editor must determine "what features of the text need to be consistent" (Mossop 2007: 87).

2.3.2.4 Clear presentation of the material for the typesetter

In this last category the editor needs to ensure that the material is complete, that the heading system is correct and that typographical and other layout issues such as placement of illustrations are resolved correctly (Butcher et al. 2006: 2). While completeness suggests questions pertaining to the content of the text, the heading system and typography are largely matters of a structural nature. Therefore it can be concluded that for Butcher et al. the category of clear presentation of the material for the typesetter overlaps with Mossop's levels of content editing and structural editing.

2.3.2.5 Summary

In juxtaposition with Mossop's four levels of editing, in which the various tasks are fairly distinctly separated according to their nature, the editing categories of Butcher et al. present a notably more intertwined network of tasks. Most of the categories in Butcher et al. overlap with more than one of Mossop's four levels.

Substantive editing overlaps with Mossop's content editing and structural editing, and includes a category for legal aspects relevant in a publishing setting. Legal aspects are not covered to such an extent by Mossop; with the exception of plagiarism issues, legal aspects are not as vital in thesis editing as in the book publishing industry and do not need to be integrated into an editing model for theses and dissertations to such a great extent.

Detailed editing for sense overlaps with Mossop's structural editing, copy editing and stylistic editing and also includes a legal category.

Checking for consistency, in Butcher et al., involves mostly the micro level and the structural level of a text, and thus covers more than one of Mossop's editing levels. However, this category cannot be equated with one of Mossop's editing levels, since in his terms, consistency issues are relevant to more than one level of a text. It could therefore be concluded that Butcher et al. and Mossop use more or less the same classification for this aspect of an editor's work.

On the whole, however, the categories in Butcher et al. are significantly more interwoven than Mossop's four levels of editing. Practically every category overlaps with at least two of Mossop's four levels (if we leave aside consistency), and micro- and macro-level tasks are combined in at least three of the categories in Butcher et al. In a publishing setting, where strict deadlines, promptness and cost effectiveness rule, and where the work process is strongly regulated, it seems logical that different tasks overlap and that the distribution of tasks will be as compact as possible. There will hardly be time for the editor to consider all levels of a text separately. An approach such as Mossop's four-level approach might be too idealistic (especially if all levels are carried out separately). Furthermore, a publishing house presumably does not leave much freedom to the editor to decide which levels and aspects of the manuscript to work on, particularly if more than one editor works on the same text.

If the publishing house divides the editing process into substantial editing, detailed editing for sense, checking for consistency and clear presentation of the material for the typesetter, as

they do according to Butcher et al., the responsible editor(s) will have to carry out whatever these categories entail. In academic editing there might also be time pressure and limited funds, but the setting is different. Dissertations, theses and similar research papers are not edited in a publishing house, but in either the respective university's own language service offices,²³ by freelancers or even by the student's peers. While language service offices certainly have their rules and guidelines as well, there might be more freedom for the individual editor than in a publishing house. Particularly the freelancers' work is largely self-regulated, aside from guidelines from the client's brief they might be bound to, according to the specific text they are working on. Micro- and macro-level tasks require different angles from which to look at a text and, if circumstances allow, it will be easier to separate those angles, or at least to combine them in a way that is comfortable for the editor and suits the situation, so that an optimal result can be achieved and the number of missed errors kept to the absolute minimum. Mossop's approach provides this freedom of combination and is thus more suitable for editing academic writing than a publishing industry-oriented approach.

Strongly overlapping clusters of editing tasks and categories are disadvantageous for the purpose of designing a model to guide the process of thesis editing, according to the roles of Mossop's gatekeeper and language therapist. The categories in Butcher et al. are too interwoven to be used as modules in a model based on these two roles, since the categories of Butcher et al. would transcend the scope of editorial action of both gatekeeper and language therapist.

2.3.3 Einsohn

The subtitle *A guide for book publishing and corporate communications* of Amy Einsohn's *The copy editor's handbook* (2000) already suggests a focus on the publishing sector. Similarly to Butcher et al. (2006), Einsohn (2000) focuses on copy editing in the book publishing industry, with a similarly comprehensive view of the copy editor's tasks and responsibilities. However, Einsohn's way of categorising these differs from that of Butcher et al. as well as from Mossop's categorisation. Einsohn (2000: 13) distinguishes three levels of copy editing, which she terms light copy editing, medium copy editing and heavy copy editing. Each of these three levels includes the same set of principal editing tasks, namely mechanical editing, correlating parts, language editing, content editing, permissions and typesetting.

²³ Such as the Language Centre at Stellenbosch University.

Einsohn uses the three levels light, medium and heavy to distinguish different degrees of depth to which the principal tasks listed above are carried out. Each of these tasks can thus be carried out on the light, medium or heavy copy editing level. Mossop also explains that there are different degrees of depth to which a text can be edited, and that “professional editors do not apply equal editing effort to every text” (2007: 34). He also offers a distinction between light, medium and heavy editing, but he notes that different editors may use different ways of grading the degrees of editing effort (2007: 34-35).

Light language editing in Einsohn’s terms means that only “indisputable errors” (Einsohn 2000: 12) in grammar, syntax and usage will be corrected, while instances “which are not an outright error”, such as convoluted passages, will either only be pointed out to the author, while “minor patches of wordiness” will be ignored altogether (Einsohn 2000: 12).

Furthermore, terms which could be unclear to the reader will be pointed out to the author, but not corrected by the editor (Einsohn 2000: 12). Heavy language editing, by contrast, requires the editor to correct errors in grammar, syntax and style, rewrite convoluted passages and suggest alternative vocabulary for terms which could be too difficult for the intended readers (see Einsohn 2000: 12). Medium language editing would be a compromise between light and heavy language editing. While the editor ignores minor wordy passages during light language editing and rewrites them during heavy language editing, such passages are drawn to the author’s attention during medium language editing, and suggestions for revision might be provided by the editor.

The choice of the appropriate editing level for a particular text will be made on the grounds of factors such as the readership, the budget, the schedule or the quality of the text (Einsohn 2000: 12-13).

2.3.3.1 Mechanical editing

Mechanical editing is presented as primarily concerned with matters of consistency in areas such as spelling, punctuation or abbreviations. The primary goal of mechanical editing is “to ensure conformity to house style” (Einsohn 2000: 5). Even though not explicitly stated in Einsohn (2000), it seems that mechanical editing is not purely a matter of consistency; the correction of outright errors in these areas does not appear explicitly anywhere in Einsohn’s principal editing tasks and as a logical consequence can be deduced as included in mechanical editing. From this perspective, this category shows a similarity with Mossop’s copy editing as well as with his additional category termed “checking for consistency” (Mossop 2006: 87-91).

The correction of errors in grammar, syntax and usage, however, which also constitutes a major part of Mossop's copy editing, is categorised as pertaining to language editing in Einsohn's system.²⁴ Mechanical editing thus overlaps with Mossop's copy editing and consistency check.

2.3.3.2 Correlating parts

This principal task involves a range of editorial actions, which are not explicitly addressed by Mossop. When engaging in correlating the various parts of a manuscript, Einsohn's copy editor is supposed to check all cross-references in the text as well as the respective references against the bibliography. Apart from that, the correct numbering of reference elements such as footnotes, tables or illustrations as well as the correct captioning of the latter two is a further responsibility in this category, together with the comparison of the table of contents with the text (see Einsohn 2000: 7). References are vital components of a thesis, dissertation or any other type of research text, and their correctness is crucial for the success or failure of such student work. Editing of these elements shall receive attention in the projected editing model.

2.3.3.3 Language editing: grammar, usage and diction

Under this principal task Einsohn categorises the editing of "errors or lapses" occurring in the grammar, syntax, usage or diction of a text (2000: 7). When performing language editing, Einsohn's copy editor is expected to "set right whatever is incorrect, unidiomatic, confusing, ambiguous, or inappropriate" without imposing any particular stylistic preferences on the author (Einsohn 2000: 7). This editing category clearly overlaps with two of Mossop's four editing levels and combines tasks of both Mossop's gatekeeper and language therapist. While Mossop treats incorrect and unidiomatic choices as copy editing problems (field of responsibility of the gatekeeper), the removal of ambiguities, the clarification of confusing or misleading parts and the amendment of inappropriate word choices are part of Mossop's stylistic editing (responsibility of the language therapist). The identification and correction of erroneous parts and the improvement of choices that are not actually wrong but unsuitable or infelicitous are different actions, which require different ways of looking at a text. In a thesis or dissertation these two elements also have different weights. Outright errors in a thesis can be more fatal than infelicitous choices; facts which are found to be wrong lower the credibility of the whole work much more significantly than a rendering which contains an

²⁴ See 2.3.3.3.

unsuitable choice of vocabulary. In effect, the two roles of Mossop's gatekeeper and language therapist fuse in Einsohn's language editing category.

The editing work on a sample dissertation (see reflection on the editing in Chapter 3), however, has proven that it is an enormous advantage to separate these two roles in the case of thesis editing, and to carry out the respective tasks in sequence.

2.3.3.4 Content editing

Einsohn's principal task of content editing includes the identification of inconsistencies or discrepancies in content (2000: 9), gaps in logic (2000: 12) as well as the querying of seemingly incorrect statements (2000: 12). In this respect, Einsohn's principal task of content editing largely corresponds with Mossop's level of content editing, where the editor also attends to problems of a factual, logical and mathematical nature. However, in her category of content editing Einsohn includes a structural component, which is dealt with separately by Mossop. Both structural problems and organisational matters (Einsohn 2000: 9, 12) are aspects of Einsohn's content editing. While it could be argued that, on the one hand, structural matters are strongly related to the content inasmuch as the structural design of a text depends on the choice of facts to be presented, and that therefore structural editing can be seen as pertaining to content editing, on the other hand, the addition, deletion or correction of facts is a different task compared to the organisation of information. While the first task requires the editor to assess and make a decision about the addition or omission of information, the second is concerned only with ordering what is present.

Interdependent as these two tasks are, they still require different procedures in the editing practice. In the case of thesis or dissertation editing, it is very likely that the editor is not as well acquainted with the subject as the supervisor is. Therefore it is possible that the coverage of the topic and the factual correctness will be discussed between the student and the supervisor in the first place. It is thus possible that content editing can be excluded from the editor's job or minimised to a level of general knowledge – depending on what has been agreed on in each particular thesis editing assignment – but that the structural design of the thesis will need to be addressed by the editor. Therefore it makes sense to treat factual and structural matters in separate modules in an editing model, so that there is enough flexibility to easily adapt the editing approach to each particular editing situation.

Once again, Mossop's approach seems more suitable in this respect since – in contrast to Einsohn – Mossop addresses the structure and the content of a text as independent editing levels.

2.3.3.5 *Permissions*

This principal task deals with legal concerns, or more precisely with copyright matters in the first place. It is the editor's responsibility to "remind the author" to obtain the permission to use and reprint lengthy quotations or any graphic material from other authors (Einsohn 2000: 10). In certain settings it may even be the editor's task to obtain those rights, depending on what has been agreed on for the respective job. As copyright and other legal matters are not as relevant in thesis editing as they are in the publishing industry, this principal task is not relevant for an editing model for academic texts, except for the issue of plagiarism, which will be incorporated into the editing model presented in 3.5. The category of permissions testifies to the publishing orientation of Einsohn's work.

2.3.3.6 *Typecoding*

By Einsohn's definition, typecoding means the identification of all "*elements*" (Einsohn 2000: 10) of a manuscript which are "not regular running text" (2000: 10). She refers to elements such as chapter numbers, headings, footnotes or figure captions.²⁵ After their identification, these elements need to be marked clearly so that the typesetter can proceed with clear instructions. For the editing of theses and dissertations, typecoding in that professional sense is not relevant. A thesis will neither be printed and published in large numbers like a book, nor will a final typesetting be done by a separate person. For a thesis it will be enough to work out a logic and well-structured layout with an adequate word-processing programme. If the editor is involved in layout and structural matters, this can be done as part of structural editing work as suggested by Mossop (2007: 74-79). The category of typecoding also points to a publishing-oriented editing approach and is not really relevant for the editing of theses and dissertations.

2.3.3.7 *Summary*

In comparison with Mossop's relatively independent and four clearly distinct levels of editing, Einsohn's principal editing tasks are notably more interconnected. This latter approach might prove practical in a publishing setting, but rather impractical for the

²⁵ For a list of all elements, see Einsohn (2000: 10).

development of an editing model for the editing of theses, dissertations or research proposals, which is intended to be based on flexible and largely independent modules.

More particularly, the fact that in Einsohn's language editing category the two functions of Mossop's gatekeeper and language therapist fuse together is impractical. The editing work on a sample dissertation (see reflection on the editing in Chapter 3) has proven that it is an enormous advantage to separate these two roles for the purpose of academic editing and to carry out the respective tasks in sequence.

Apart from that, categories such as permissions (see 2.3.3.5) and typocoding (see 2.3.3.6) are not particularly relevant for the editing of theses and dissertations. Even though the presence of these categories would not hinder the development of an editing model for academic texts (irrelevant categories could just be excluded from the model), it is still more convenient to use a less publishing-oriented but more general approach such as that of Mossop, which additionally has the advantage of clearly separate, independent editing levels.

One important aspect is addressed by Einsohn (2000) as well as by Butcher (2006), which will be integrated into the model; Einsohn and Butcher address the controlling of the different kinds of references in a text as part of an editor's responsibilities. Referencing being a vital part of a thesis or dissertation, the editing of references will be integrated into the projected editing model.

2.3.4 Mackenzie

Janet Mackenzie's *The editor's companion* (2004) provides a comprehensive overview of the publishing industry and portrays the editing profession from different angles. Ranging from general information to detailed aspects, Mackenzie's work covers a wide variety of different aspects of the editing job.

Chapter 9 of Janet Mackenzie's book is concerned with the process of editing and the tasks which are part of it (Mackenzie 2004: 138). entitled "Editing Methods", this chapter is particularly relevant for this study, which is focused on the development of a methodological approach to the editing of theses and dissertations. Mackenzie describes the tasks relevant to the process of editing as divided "somewhat arbitrarily" into three main categories: copy editing, language editing and substantive editing (2004: 138). Even though this division

exists, Mackenzie notes that these categories always overlap, and the editor “may perform elements of all three on each pass through the manuscript” (2004: 138).

2.3.4.1 Copy editing (12 steps)

Mackenzie (2004: 138) describes copy editing as “the heart of the editorial process”. In her terms, copy editing involves all tasks that are essential for the preparation of a document for publication. This statement points to a publishing-sector-oriented book. As essential tasks in the process of copy editing, Mackenzie identifies the correction of spelling and grammar as well as the removal of inaccuracies and inconsistencies (2004: 138). Furthermore, she notes that copy editing includes language editing and “blurs into substantive editing” (2004: 138). The categories which constitute language and substantive editing will be presented in 2.3.4.2 and 2.3.4.3, respectively; however, it can be established that Mackenzie’s copy editing seems a lot more comprehensive and positioned more in the centre of the editing process than Mossop’s copy editing, or any of Mossop’s four editing levels. In effect, Mackenzie’s statement that copy editing “includes language editing” and “blurs into substantive editing” (2004: 138) suggests a combination of possibly all of Mossop’s four editing levels under the umbrella term of “copy editing”, as illustrated in Figure 2.1 (2.3.4.4).

Mackenzie suggests proceeding through her category of copy editing in a twelve-step standard programme, which will be outlined here to show that even though there are differences between Mackenzie’s and Mossop’s terms for the various tasks and categories of editing, certain parts of Mackenzie’s practical procedure through copy editing actually exhibit similarities with an editing procedure on the basis of Mossop’s division of the roles of gatekeeper and language therapist.

1. *Appraisal* – the first step consists of preparatory work such as the planning and negotiation of the editing job (Mackenzie 2004: 139).
2. *Mark-up or apply styles* – this second step involves the same elements as Einsohn’s typesetting; it is concerned with the identification and distinguishing of running text from non-running text items such as images, captions or headings. Mackenzie also identifies and highlights in-text citations in this second step to facilitate their later verification against the bibliography (Mackenzie 2004: 139). Such tasks have to do with the structural design of the text; Mossop would presumably categorise them as

structural editing. As mentioned before in 2.3.3.6, these tasks are not particularly very relevant in the editing of theses and dissertations.

3. *Rough edit of the text* – this step involves the correction of all the “obvious” problems and includes editing of spelling, grammar, word choice and punctuation (Mackenzie 2004: 140). Here we can establish a difference in the descriptive terms of Mackenzie’s and Mossop’s editing categories, even though there is little discrepancy regarding the tasks carried out. Mackenzie sees grammar, punctuation or spelling as matters of language editing (Mackenzie 2004: 140), while Mossop categorises these as copy editing matters. Even though Mackenzie includes these matters in her 12-step copy editing programme, she understands them as pertaining to “language editing” (2004: 140). Therefore it must be noted that Mackenzie’s and Mossop’s perspectives regarding the naming and hierarchical position of these editing categories differ. But even though they use different designations for this cluster of editing tasks, the actual work is quite similar – both Mackenzie and Mossop recommend more or less the same editing tasks on the micro level of the text.

4. *Rough edit of everything else* – step number four focuses on “all other parts of the manuscript besides the text” (Mackenzie 2004: 140) such as the correction of errors in the references, examination of tables and illustrations and their captions and numbering system, ensuring that copyright permissions have been obtained where necessary, the grading of the heading system and the verification of all headings against the table of contents (Mackenzie 2004: 141).

While the correction of references is not dealt with in particular in Mossop (2007), neither as part of copy editing nor as part of any other editing level, he categorises work on the grading of the heading system and the comparison of headings in the text with headings in the table of contents as part of structural editing. In this respect, Mackenzie’s copy editing category overlaps with Mossop’s structural editing. It must be noted, however, that there is a difference in the sequence of task execution. Micro-level work (step three) is positioned before work on the heading system (step four) in Mackenzie’s twelve-step system. Mossop, by contrast, recommends editors to do micro-level editing last, after the macro-level work has been completed, since macro editing might involve cuts on the content and it would be a waste of time and effort to copy edit text which will be deleted at a later stage (Mossop 2007: 37).

In this respect, Mossop's approach of working on the structure separately from and before the micro-level of the text seems more efficient – not only for the editing of theses or dissertations but for any editing assignment in general, because the grading of headings both results from and indicates the structural organisation of a text. In order to create a logical and well-organised heading system, the text must be viewed as a unit (which, of course, consists of a number of smaller parts such as paragraphs, which make up the structure of the whole). It is hard to view a text from a micro-level and a structural perspective at the same time; micro-level work concentrates on the smallest units of a text such as words, letters and punctuation, and thus requires an eye for detail, while the structural editor's eye must focus on the text as a whole. These two very different perspectives may be hard to combine. But it is surely not impossible – a trained editor may be capable of doing these two very different tasks at the same time, but it is likely that a smaller number of things will be overlooked if the editor does not combine these two perspectives.

To a certain extent, the division of the thesis editing assignment into the different fields of competence of Mossop's gatekeeper and language therapist also combines work on the micro-level and on the structure in the role of the gatekeeper. However, combining these two competences in one working phase does not mean that they need to be carried out simultaneously – even within the gatekeeping phase in a thesis assignment, more than one run-through can take place. Depending on the level of experience of the editor, and depending on the degree to which the text needs to be amended, Mossop's levels allow an individual approach to the editing process.

5. *Smooth edit of everything* – after having removed all obvious errors and “most of the distractions” such as spelling errors and grammar faults (Mackenzie 2004: 141) in the rough edit, this fifth step is performed subsequently as a second run through the manuscript, during which the editor concentrates on less obvious problems, and solves everything he possibly can (Mackenzie 2004: 141). Inconsistent or contradictory parts are to be made consistent and clear, and any remaining language editing can be done. Above all that, Mackenzie warns that at this stage, no global changes should be made in an on-screen edit any longer, since any potential new error which the editor may inadvertently introduce might not be detected anymore before the manuscript is published (2004: 141). During this stage of the editing process, editors are asked to put themselves “in the position of the reader”, to focus on the sense and to “take a broad

view of the book as a whole” (Mackenzie 2004: 141). This step exhibits an interesting similarity with Mossop’s approach, more precisely with Mossop’s language therapy. While the removal of inconsistencies and contradictions may technically fall among both the gatekeeper’s and the language therapist’s tasks, depending on the level on which these inconsistencies occur, Mackenzie’s statement that editors are supposed to assume the reader’s position represents a key idea of the role of Mossop’s language therapist. The latter is entrusted with the level of stylistic editing, where the language is tailored to the readers’ needs and knowledge – it is hence essential that the editor assumes the reader’s position before he is able to tailor the language to the reader’s needs.

The editor’s awareness of the position of the reader is thus equally important in Mossop’s language therapy and in Mackenzie’s step of smooth editing. The focus on sense, which is part of Mackenzie’s smooth editing, is also central to Mossop’s smoothing – after all, in this second phase of the level of stylistic editing, the editor is supposed to ensure that the text makes sense for the reader. The appropriate choice of expression, tone and vocabulary plays a central role here. Furthermore, the performance of Mackenzie’s smooth edit in a second phase of editing corresponds very well with Mossop’s sequence of actions. In a first run-through, the gatekeeper corrects everything which is simply wrong, while in a second editing phase, the language therapist focuses on fine-tuning of the language and tailors the text to the needs of the intended readers, or in Mackenzie’s terms, solves the less obvious problems (2004: 141).

6. *Compile queries for the author* – at this stage, the editor compiles all queries for the author and briefs the author on how to respond to the queries, and on how to make the necessary changes (see Mackenzie 2004: 141).
7. *Documentation, extra copy* – this step is rather publishing-specific. At this stage the editor documents “the order of [the] book (sic), the word list, the design brief, the artwork list, and any form that the publisher requires” (Mackenzie 2004: 142). Apart from that, the editor may also compile a note for the typesetter if substantial changes need to be made. In addition to that, a list of illustrations may have to be drafted by the editor, as well as other documentation such as a list of abbreviations or captions. Mackenzie terms such documentation “extra copy” (2004: 142), and it can partly be compiled during the earlier copy editing steps. In the case of thesis editing, such

specific documentation, especially when it gives instructions to the typesetter, is practically irrelevant. After the thesis editor, only the student and the supervisor will be concerned with finalising the student's work for submission. Publishing-specific steps such as typesetting will not take place at all. It may, however, still be important to document any global changes, or point to their necessity, be they in the running text or in the heading system or elsewhere in the document. Such documentation helps the student, the supervisor and the editor maintain an overview of the changes made and changes to be done, and at the same time prevents the editor from being criticised at a later stage for not having made a change that might have been agreed on earlier. For further discussion on the inclusion of such documentation into the thesis editing process and thus into the projected editing model, see 2.5 and 3.4.4.

8. *Incorporate author's corrections* – at this stage of Mackenzie's copy editing steps, the editor types the author's changes into the manuscript, either by hand or electronically, depending on the mode of production (Mackenzie 2004: 142). In the case of thesis editing, the corrections will probably be made directly by the student, since it is the student who is supposed to do as much of the work as possible. The editor may work wither with the tracking function of the word-processing tool used so that the changes suggested are passed on to the thesis writer for acceptance or rejection, or the editor may use comments in the margin or other forms of communication such as e-mail to draw the student's attention to passages in the text which still need to undergo change. After the student's corrections have been made, the editor may always check the document again if necessary, and if time allows.
9. *Final check all* – at this stage of Mackenzie's copy editing process, the editor checks whether all changes have been made, all queries have been resolved and, if the track changes function has been used, whether all changes have been rejected or accepted (Mackenzie 2003: 143). Mackenzie further recommends that editors run a spell check and a grammar check at this stage, and remove double spaces, which often are introduced into the manuscript if the track changes function is used. Such a final check is just as important in thesis editing as in any other editing assignment, and should thus always be done by the editor of a thesis or dissertation.
10. *The printout* – if the editing has been done on screen, Mackenzie recommends printing out the whole manuscript at this stage for quality control (Mackenzie 2004: 143). This applies just as well to thesis editing as to any other type of editing. On the printout

mistakes might be spotted that were not seen on screen. Mackenzie notes that such errors can be marked on the hard copy to be attended to by the typesetter, but with no typesetter involved in the process of thesis editing, they should be incorporated into the electronic copy right away. A printout may nevertheless be helpful for the thesis editor to run a final check on errors before sending the edited copy back to the student; whether a printout is necessary in a particular assignment may, however, be left for the editor's decision.

11. *Proofing* – at this stage the printout of the edited manuscript is checked and corrections are effected on the electronic version during what Mackenzie terms the “first proof” (2004: 143). In a second proof, which the editor might be required to perform (Mackenzie 2004: 143), the first proof is printed and proofread again. At the proofing stage it might be more justified if the thesis editor does this last correction work, as it presumably involves only a small number of small things such as misspellings or smaller problems regarding sense. If no substantial errors are found, it will be safer if the editor solves small problems right away; to send the document back to the student would involve the danger of the student introducing errors again. Proofing is important in thesis editing to attain the highest possible quality level before submission. The fewer mistakes there are in the final draft of a thesis, the more polished and convincing it will be, which will have a positive impact on the assessment. Whether the first proof is enough, or whether a second proof is necessary will have to be decided in each individual assignment. If less experienced editors (i.e. editing students) work on their colleagues' theses, it might be recommendable to perform both proofing stages.
12. *Despatch and handover* – at this final step of Mackenzie's copy editing process, a handover form is filled in by the editor. Apart from that, the editor drafts what Mackenzie terms a covering letter (2004: 143), a document that contains all remaining issues such as outstanding material or queries as well as any price-altering decisions agreed on during the editing process (Mackenzie 2004: 143). These documents are then sent to the author together with the final version of the edited manuscript, either electronically or by post, or both. Needless to say that this last step is indispensable in any editing assignment and will naturally also complete the process of thesis editing.

2.3.4.2 *Language editing*

Mackenzie presents language editing as “one component of copy editing” (2004: 144). This seems somewhat at odds with her statement that the process of editing is divided up into the three main categories: copy editing, language editing and substantive editing (2004: 138); even though she notes that these three categories overlap,²⁶ it is questionable whether one major category of editing should be seen as a component of another. Sophistry aside, Mackenzie’s language editing can be done on different levels of intensity, namely “light”, “medium” and “extreme” (Mackenzie 2004: 145-146), depending on the degree to which the respective text needs to be edited.

Language editing is further described as a process of finding answers to a list of ten questions which are to be asked about each sentence of a text. Interestingly, only a fraction of that list is indeed concerned with language; a considerable number of the questions are concerned with matters relating to the content and structure of the text; this is an additional indicator of the overlapping structure of Mackenzie’s editing categories. To give a few examples, the question of whether a sentence contains “any specialist terms that need to be explained” (Mackenzie 2004: 144) indeed addresses the linguistic structure of the text. However, the question of whether a sentence “is needed” or whether the content of a sentence “is probably accurate” (Mackenzie 2004: 144) has less to do with language than with the substance of the text and thus cannot form part of the language editor’s brief. Similarly, questions such as whether a sentence “follows logically from the one before” or whether a sentence belongs in a particular paragraph under a particular heading and in a particular chapter (Mackenzie 2004: 144) are not so much related to language as they are to the organisation of content.

Hence, if compared to Mossop’s division of the editing tasks into the functions of gatekeeper and language therapist, Mackenzie’s language editing overlaps with Mossop’s levels of content editing, structural editing and stylistic editing, and thus covers parts of the competencies of both Mossop’s gatekeeper and language therapist.

This thesis does not intend to argue that Mackenzie’s approach to an editing assignment is categorically wrong, or to argue that the division of the editing work into the roles of gatekeeper and language therapist is the only functional way of editing a text. It is surely to some extent a matter of each editor’s individual taste and habits in which order or according to which scheme the different editing tasks are carried out. An editor with many years of work

²⁶ See in this regard Figure 2.1 in 2.3.4.4.

experience in a publishing house might deliver a better result when editing a thesis according to the editing procedures he is familiar with than if he changes procedures and uses a new editing model with a different approach. However, for the purpose of creating a practical model to guide the process of academic editing in a clear and replicable manner for everyone who has been entrusted with thesis editing, an approach such as that of Mossop with a clear and distinct division of the different editing tasks is more convenient to work with.

2.3.4.3 Substantive editing

Mackenzie understands substantive editing as “tailoring the structure, content, language and style of a publication” (2003: 148) with a focus on the reader. The aim of substantive editing is to make the text “clear, memorable, logical and easy to understand”, so that it becomes “attractive” for the readers (2004: 148). Mackenzie notes that substantive editing is thus in fact “what the author should have done” (2004: 148). Like language editing, substantive editing can be done on various levels of intensity, reaching from the simple changing of a heading to actually writing the book “from notes supplied by the author” (Mackenzie 2004: 148).

Before the actual substantive editing can begin, the editor needs to obtain all necessary information for the correct fulfilment of the publication specifications. This includes information such as the budget, the time frame, the word count, the number of pictures, the degree to which the author is involved and an exact definition of the nature of the editing task (Mackenzie 2004: 148).

When all the information has been obtained, the heading system of the manuscript can be reviewed and changed or amended, where required. Mackenzie suggests amending the heading system by drafting an extra “guide to headings” (2004: 149), which is basically a table of contents only for the editor’s use as a working aid, according to which the text can then be arranged logically. In some texts a structure needs to be imposed, in other words, the framework needs to be set up (Mackenzie 2004: 149), while in other texts the structure only needs to be re-arranged. Other texts again are presented in an unpractical or confusing way, which can be solved by changing the mode of presentation, that is, for instance, transforming a “number-laden text” into a chart or table (Mackenzie 2004: 152).

Mackenzie notes that the scope of an editing task depends on various factors, and that the editor may be confronted with the difficult choice between more possible options than just

one (2004: 155), since a certain solution may not be the only right one (2004: 152). Therefore, she argues that there are no “hard-and-fast rules” for editing (2004: 157), but she offers a list of “guiding principles” (2004: 157), from which the editor can pick those which are appropriate for each particular editing task. Mackenzie’s principles are the following:

- Don’t antagonise the author.
- Don’t make work for yourself.
- Eliminate meaningless variation.
- Eschew pedantry.
- Evade responsibility and get someone else to decide.
- Get the book out.
- Get it right.
- If it’s bearable, leave it.
- Make every word tell.
- Remove distractions.
- Remove unnecessary words.
- What’s best for the reader?
- Will it sell more copies?

If we discuss these principles briefly with a view to the editing of postgraduate research writing, the first of Mackenzie’s principles to *not antagonise the author* certainly applies. A positive atmosphere in the communication between editor and student can be seen as a prerequisite for productive teamwork. If the student is antagonised by the editor’s conduct in any way, the editing service might not help at all and the effort of the editor might have little or no positive effect on the final outcome.

Not creating work for oneself during editing (Mackenzie 2004: 157) also seems reasonable; it is certainly more productive to concentrate on the essential points than to waste time and energy on irrelevant side issues, particularly since editing commissions are mostly restricted by a certain time frame. Nevertheless, this second principle might have to be adapted slightly for thesis editing. As long as time allows and the learning process of the student profits from it, the editor should work to the best of his or her abilities and not avoid any extra effort to help the commissioner with the text. Hence, an adaptation of this second principle for thesis editing might rather read “do not create unnecessary work for yourself”.

The elimination of meaningless variation (Mackenzie 2004: 157) clearly makes as much sense in thesis editing as in the editing of any other kind of writing. Meaningless variation creates the impression of a lengthy text – which might lead to a weariness of the examiner and the academic readership, and result in a devaluation of the text as an academic document and perhaps also to an unnecessary loss of marks in the assessment process. The impression the text creates will certainly be better if it is written in a concise way and comes straight to the point.

Pedantry, which is to be eschewed according to Mackenzie's fourth principle (2004: 157), may antagonise the student and create unnecessary work for the editor. Avoiding pedantry is thus inherent in the first two principles on Mackenzie's list as a pedantic approach is certainly not beneficial in thesis editing. However, it is the editor's responsibility to critically ponder the boundaries between too much input and too little.

The fifth of Mackenzie's principles, to *evade responsibility* (Mackenzie 2004: 157) and leave decisions to others is, however, fatal in thesis editing. Unlike in a book publishing process, in which a number of people might be concerned with the work after the editor (e.g. the author or commissioning editor) and in which the responsibility for a book may indeed lie in the hands of somebody working with a book after the editor, in the case of a thesis only the student and perhaps the supervisor will check the work after editing before it is handed in for examination. If the editor does not work in a considerate manner and refuses to assume responsibility for his work, the student might run into trouble at a later stage, be it because the editor did not bother to note crucial errors or because of any other failure of the editor as a result of a lack of responsibility. Hence, this principle on Mackenzie's list is not applicable in a thesis editing scenario. It is to note, however, that the startling effect of this principle might result simply from the fairly provocative formulation rather than from its intended effect in practice. Mackenzie's intention is most likely not to recommend irresponsibility by the editor. Perhaps her intention is rather to warn editors to not seize responsibility for matters which lie beyond their scope of action and to make editors aware of the necessity to assume an adequate degree of responsibility in the respective job. In the case of a thesis, the ultimate responsibility certainly lies with its author and the supervisor rather than with the editor. Nevertheless, a reasonable degree of responsibility on the editor's part is crucially important in thesis editing – not in the sense of having the final say in decisions as the supervisor, but in the sense that the editor has the responsibility to complete his work in a way in which the learning process of the student can be promoted.

To “*get the [work] out*” and to “*get it right*” (Mackenzie 2004: 157), however, are two principles which are equally important in thesis editing as in book publishing. A thesis editing commission must be completed in the given time frame, and it is obvious that one of the major goals of thesis editing is to detect errors and correct them. In this regard, these two principles on Mackenzie’s list apply to thesis editing.

The principle to *leave what is bearable* (Mackenzie 2004: 157) is a valuable suggestion, in particular with regard to the fact that it is the student’s academic skills which are to be tested in postgraduate research writing. The more original work is present in a thesis, the more authentic an account of the writer’s academic skills is given.²⁷ Therefore it seems appropriate for thesis editing to ponder critically whether a particular phrase is bearable in a thesis, or to find an adequate middle way between introducing more elegance into the text, for instance, and interfering with the student’s original writing.

Mackenzie’s principle to “*make every word tell*” (2004: 157) is connected with the principle to remove meaningless variation. It is helpful for the readers’ processing of the text if they are not bothered with unnecessary or meaningless words; the higher the information density, the more informative the reader will consider the text to be, and the better will be the image conveyed by the text. A positive image of a thesis will certainly have beneficial effects on the assessment.

The principle that *distractions must be removed* from the text (Mackenzie 2004: 157) is important for the editing of postgraduate writing. A research text is expected to present research findings in a clear and unambiguous way so that the information can be used again in further research. Distractions may lead the reader away from the topic and may produce misunderstandings in the processing of the information given in the thesis. The removal of potential distractions will improve the integrity of research writing and help the reader follow the argument.

The principle to amend the text according to *what is best for the reader* (Mackenzie 2004: 157) generally applies to thesis editing; it is important to always ascertain that the reader will be able to process the text without trouble and to make use of it. In thesis editing it should be kept in mind that the text will be read critically for its scientific value, both by the examiners and also by the academic readership that might intend to use the document for further

²⁷ For further discussion on the role of originality in thesis writing, see 2.5.1 and 2.5.2.

research. Therefore, it might be appropriate to complement this principle with the question of what the reader may criticise in the thesis or dissertation with the aim of addressing potential points of criticism.

The last principle on Mackenzie's list, that the text must be amended in such a way that *more copies are sold* (2004: 157), is only indirectly applicable in thesis editing. The primary objective behind thesis writing is not a commercial one, after all. Unlike a book, a thesis is not written to be sold on the market. A thesis is written to report on a research project, on the one hand, and for the attainment of an academic degree, on the other. However, the aim of selling more copies is associated with a question which is indeed relevant in thesis editing. The question of whether the reader will "buy" the thesis or dissertation in the sense of accepting it as a valid piece of research writing is highly important, both regarding the examiner and the academic readership in the discipline in which the work is written. Hence, the last of Mackenzie's principles certainly applies in thesis editing, only not with a focus on the commercial effect of the editorial service but with a focus on the acceptance of the text by the readers.

In summary it can be said that even though most of Mackenzie's principles can be applied to thesis editing, or be adapted in such a way that they become applicable in thesis editing, a focus on the publishing sector is clearly noticeable once again in Mackenzie's approach.

One difference between Mackenzie's and Mossop's view on the sequence of the different editing levels is that, while Mossop recommends attending to stylistic questions only after the work on the structural, the content and the micro level has been completed, Mackenzie (2004: 150) suggests doing heavy language editing early, right after having "established a rough order" in the manuscript. She argues that in this way the editor can familiarise himself with the content as well as the author's way of thinking and expression (2004: 150). Mossop's recommended sequence, in contrast, is based on the argument that working on the language of a text first might be a waste of time because some passages might be deleted during content and structural editing (Mossop 2007: 37). Regarding this problem, Mackenzie (2004: 150) suggests to mark as unedited any passages which are likely to be discarded at a later stage and to skip them during language editing.

This suggestion is at odds with the second guiding principle in her list, which is to prevent the editor from creating extra work for himself (Mackenzie 2004:157). Even if the language editing of such passages is postponed, the marking of these passages as unedited means extra

work, and since any kind of marking always captures attention, highlighted passages might disturb the editor during his work. Even though the marking of such passages is certainly not more work than editing them, the extra step of marking any such passages could be made redundant if Mossop's sequence was followed and macro-level matters were solved before micro-level editing was attended to.

Besides, it might be unrealistic to expect a thesis editor to familiarise himself with the content of the thesis while editing the language. Content and language are two very different levels of a text, and even though they are interdependent, it may well happen that all the editor's mental capacities are necessary to deliver optimal results on each level separately – depending on the editor's expertise, on the one hand, and on the linguistic and substantial complexity of the respective text, on the other. Besides, the substance of a thesis, dissertation or proposal should have priority over the language usage in general. There might be exceptions in certain fields such as literary studies, language studies or journalism, in which language becomes equally important because the student's linguistic capabilities are an essential part of the course and thus part of competences to be tested in the thesis. Naturally, a certain standard of writing needs to be guaranteed in every thesis or dissertation; language is the student's instrument to express the content of the thesis and make its argument evident to the reader.

Yet, a stylistically inelegant but well-grounded and logically structured argument might be more successful as a thesis than a flow of beautiful language which lacks any deeper meaning and therewith scientific validity. Language is nevertheless the channel through which these findings are made visible, and it is perhaps even the only medium through which content becomes accessible in the first place. Even though language alone cannot replace or compensate for missing substance, it may still count as an important parameter in the assessment of a thesis or dissertation. Language, or style, features explicitly in the "Instructions to examiners for the assessment of a master's thesis" (2006) by the Faculty of Science (FS) at Stellenbosch University. As one point of a list of different assessment criteria, the document requires the thesis to be assessed in terms of whether the "linguistic, stylistic and technical editing of the thesis is acceptable" (FS 2006).

Consequently, it would be inappropriate to claim that language is less crucial in the assessment of a thesis than the substance of the text. For the editing of postgraduate research writing, however, it may be argued that correctness of the text with regard to both the substance and the technical details may be given priority over the improvement of the language. It is more economical to establish correctness before attending to linguistic fine-

tuning. Mossop's approach with the division of the work according to the roles of gatekeeper and language therapist is more practical in this respect than Mackenzie's strategy; Mossop ensures that priority is given to the correction of errors before the language is improved by instructing editors to do macro-level work before micro-level and stylistic editing (Mossop 2007: 37).

2.3.4.4 Summary

Mackenzie's and Mossop's approaches have more in common than Mossop's approach and any of the other approaches presented above. The most striking commonality between the two authors is their similar procedure through an editing assignment. Mackenzie's steps of a rough edit and smooth edit are similar in their structure to the tasks of Mossop's gatekeeper and language therapist. Even though Mossop and Mackenzie have different designations for their categories, even though their approaches do not correspond in every detail, these two authors nevertheless follow a similar overall sequence of actions in the editing process. To put it simply, even though Mackenzie and Mossop call things by different names, they are still performing the same editing action in certain instances (see 2.3.4.1).

The question that arises at this point is which of these two approaches provides the most suitable basis for the design of a model for the editing of postgraduate research writing. There are still significant differences between Mackenzie's and Mossop's approaches, but when viewed in the light of the aim of designing a model for thesis editing, these differences speak in favour of Mossop's approach.

One difference lies in the organisation of Mackenzie's and Mossop's categories. Mackenzie's copy editing describes the procedure through an editing assignment; it organises all non-textual responsibilities of an editor as well as all textual editing work from micro level to macro level. Mackenzie's copy editing can thus be seen as the most expansive of the three significantly overlapping categories included in her 12-step copy editing process. Graphically, Mackenzie's structure of editing categories in the editing process could be visually represented as follows:

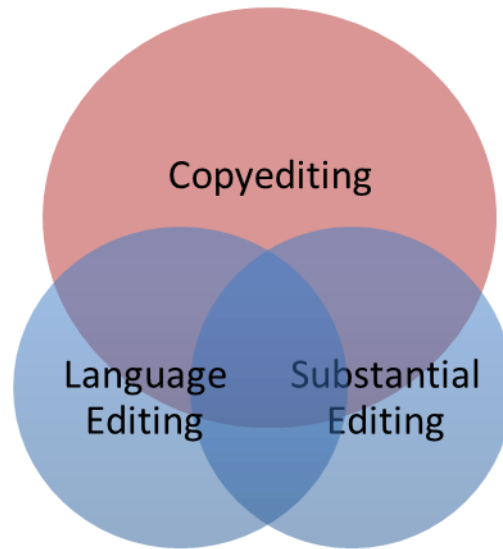


Figure 2.1: Organisation of editing categories in Mackenzie (2004)

Mossop presents not three, but four, largely independent levels of editing, whose procedural organisation does not result from an overlapping structure, but rather from Mossop's idea to organise the editing procedure according to the roles of gatekeeper and language therapist. Graphically, Mossop's organisation of editing categories in the editing process could be visually represented as follows:

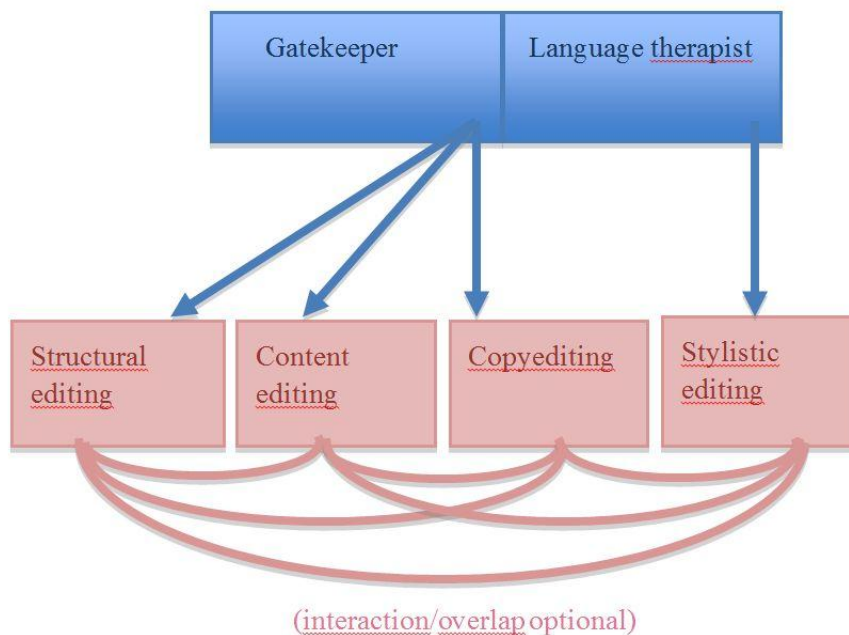


Figure 2.2: Organisation of editing categories in Mossop (2007)

For the development of a flexible model for the editing of academic texts, it is more convenient to work with independent categories which do not overlap to an extensive degree. Even if it might be possible to adapt Mackenzie's approach for such a model, it would need to undergo a lot more adaptation in order to attain independent modules, since the structure of her categories is much more interwoven than that of Mossop's categories. The latter, in contrast, already have that independence; only smaller adaptations will be necessary regarding the addition of aspects such as referencing and plagiarism.

A vital difference between Mackenzie's and Mossop's approach is their respective position regarding the overlapping of the different editing levels or editing tasks (as Mackenzie terms them). While Mackenzie (2004: 138) notes that "there is always considerable overlap" between copy editing, language editing and substantive editing (which, regarding her distribution of editing tasks, is almost unavoidable), Mossop's four levels may, but do not necessarily have to, overlap. In contrast, his approach allows each of his four types of editing to be carried out in separate steps (Mossop 2007: 35). He notes that an editor can, and a beginner even should, "master" each of the editing levels separately before combining them (Mossop 2007: 35).

Mossop's division of the editing work into the four levels of copy, content, structure and style appears purer and more clearly differentiated than Mackenzie's division into copy editing, language editing and substantive editing. While Mossop's four levels function largely independently – overlap is not obligatory but possible to various degrees, depending on the editing assignment – Mackenzie's categories are considerably more interlocked, so that a question concerned with the content of the text can suddenly appear in the category of language editing. In thesis editing or in similar editing assignments, in which content and language play different roles, it is important to be able to differentiate clearly between those two aspects. Mossop's independent editing levels and their division into the roles of gatekeeping and language therapy complies ideally with this requirement.

For the purpose of suggesting a model for the editing of theses and dissertations, Mossop's position is more suitable, as it offers the flexibility needed in a field in which the role of the editor as well as the set of tasks relevant for a particular editing job is a matter of negotiation. Independent modules facilitate an individual combination of the tasks for each editing assignment. With Mackenzie's point of departure – which postulates that copy editing forms the core of the editing process, includes language editing and "blurs into substantive editing (2004: 138) – a clear division of tasks according to the roles of gatekeeper and language

therapist would be more difficult, as it would involve the unravelling of all three of Mackenzie's categories with subsequent redistribution of the unravelled tasks into more independent categories – a task which has already been done most satisfactorily by Mossop.

The editing approaches of Butcher et al., Einsohn and Mackenzie presented in this chapter have been selected for this literature review in order to find a suitable basis for the design of a model for the editing of postgraduate research writing. These works are part of a larger range of approaches, most of which have been designed by authors and editors active in the editing industry. In comparison with Mossop's approach presented in *Revising and editing for translators* (2007), it can be summarised that amongst all works considered, no other approach has been found which, firstly, offers such a clear and general distinction of editing levels as Mossop's *Revising and editing for translators* (2007) in a similarly comprehensive way, and secondly, provides a strategic framework similar to Mossop's concepts of gatekeeper and language therapist, which is so well suited for the editing of research writing. On the whole, a significant part of other editing approaches focusses on editing in a publishing environment²⁸ and presents the procedures of the editing job in different constructs of rather interwoven editing tasks and categories. Even though the points of focus of the different theories may diverge slightly, depending on the sub-field of the editing sector in which the authors of these works are active, a publishing-oriented perspective is germane to most of them. Brooks et al. (2005), for instance, present a media publishing-focused approach to editing. Matters such as legality and propriety are emphasised in his book, as these matters play an important role in the media industry. The categorisation and arrangement of the different editing tasks in Brooks et al. (2005) is therefore strongly customised to the editing job in a media publishing house. For thesis editing, such a specific approach would have to undergo heavy adaptation in order to make it suitable for this different kind of editing assignment.

Those approaches which offer more general ideas and views about editing have either been identified as less clearly structured than Mossop's approach²⁹ or as less concerned with the organisation of the immediate practical editing process than with discussing various questions and topics across the whole field of editing.³⁰

Mossop's approach has been compared here with only a selection of other approaches, since a detailed comparison of all the available editing approaches with that of Mossop in the same

²⁸ As for instance Plotnik (1982), Judd (2001) or Brooks et al. (2005).

²⁹ As for instance Billingham (2002).

³⁰ As for instance Gross (1993) or Sharpe and Gunther (1994).

fashion as with the selected theories in 2.3 would exceed the scope of this thesis. Despite this limitation, Mossop's approach has been determined as providing the most suitable basis for this study. The motivations for this choice shall be given in 2.4.

2.4 Mossop's approach as the basis for a practical editing model

In the preceding sections, an attempt has been made to position Brian Mossop's *Revising and editing for translators* (2007) in the field of editing and to explain the notably general perspective of his work; this was followed by a review of his four levels of editing and finally his approach was compared with those in some other major works on editing. Mossop's approach has emerged as the most suitable to be adapted as a practical model for thesis editing. The reasons for preferring Mossop's approach as basis for the projected editing model can be summarised in three main motives.

Motive 1 – Perspective

A difference in perspective has been found between Mossop's approach to editing and other editing approaches with which Mossop's work is compared in 2.3. While other approaches to editing are conspicuously influenced and shaped by the intricacy of the editing processes in the publishing industry, Mossop's work appears more wide-ranging in its perspective. *Revising and editing for translators* (2007) is positioned somewhere on the boundary line between the fields of editing and translation, in which Brian Mossop is active as a professional. His perspective on editing appears more global than that of other authors, possibly a result of trends in the field of translation studies during the time in which Mossop's work was written.³¹ His unbiased outlook on editing enables Mossop to summarise the complexities of an editor's work in a uniquely general, clear and practical approach, comprehensive enough to be functional, on the one hand, and concise and coherent enough to remain replicable, on the other.

Motive 2 – Independent editing levels

Mossop's four levels of editing stand out through what could be termed interrelation in independency; the four levels of copy editing, content editing, structural editing and stylistic editing function as a collective and as separate modules. The collective of Mossop's editing levels covers all aspects of a text which may need attention in any editing assignment. Their combination allows for a complete and professional editing job. Yet, Mossop's editing levels

³¹ As argued in 2.1.

also function as independent modules. The editor has the freedom to combine the four levels as required by the individual assignment, to exclude any editing level (or part of it) from the job, if it does not need any attention, to decide on the degree to which each level is attended to and to choose an order in which he will proceed through the work on the different levels.

With regard to the projected model for thesis editing, the most vital aspect is the editor's freedom to decide on the order in which the levels will be attended to. While the process of editing in a publishing environment is constrained by the regulations and the procedures in the industry, Mossop's four-level approach to editing offers a largely unconstrained set of editing tasks, which can be composed individually to suit a particular situation. For thesis editing, which is a rather special kind of editing assignment with a particular type of text and particular requirements to be met, it is more convenient to tailor the editing process to the job rather than squeezing the job into a pre-built system.

Motive 3 – Roles of gatekeeper and language therapist

Despite the potential independence of his four levels of editing, Mossop does not desist from a comment regarding their order. He indicates which sequence of procedures promises best to guarantee time-efficient yet high-quality editing work. It is hard to imagine that an editing approach with a focus on a publishing environment would be more effective for a thesis editing model than Mossop's general approach. Mossop synthesises his approach to editing into the two roles of gatekeeper and language therapist – and without deliberately venturing into the field of thesis editing, he has fortuitously created an editing approach perfectly tailored to this particular type of assignment. His allocation of editing tasks according to the roles of gatekeeper and language therapist can be seen both as the precondition for, and the consequence of, his recommended sequence of procedures and it is this step, which is missing in other approaches but which makes the crucial difference. This difference accounts for Mossop's approach being chosen as the foundation of this study. Mossop's gatekeeper and language therapist roles constitute the two essential elements of the two-phase editing model formulated in 3.5.

2.5 The tasks and the role of the thesis editor

The mere presence of a great variety of editing tasks does not demand that the whole range of possible tasks always be carried out by the editor. In certain assignments it may even be seen as inappropriate to complete the full set of possible editing tasks. The role and the tasks of an

editor are not always the same from assignment to assignment; they can vary significantly according to the nature of the respective job.

For the editing of research work, some editing tasks may be seen as essential, while others might be considered inappropriate, or even unethical, if carried out by the editor. The role of editors of theses and dissertations is delicate and in some aspects highly controversial, and with the “general lack of explicit policy guidelines” for thesis editing (Kruger and Bevan-Dye 2010: 153), explicit negotiation of each particular commission might be the first imperative step in a successful thesis editing job.

In this section an attempt has been made to integrate and examine different views on the thesis editor’s role and tasks from different directions in order to point out and discuss controversial aspects, and to show that perspectives diverge considerably with regard to the tasks and role of a thesis editor. A selection of sources of information has been consulted on this matter. All sources raise the same questions about the thesis editor’s function; however, their answers to these questions differ in certain aspects. Given the very limited research on this matter, three sources in particular seem to be the core of the currently available research on the role of thesis editors. This becomes evident not only in a surprisingly limited number of hits in the process of a literature search, but also in the considerable extent to which these sources cite and reference each other.

First, the Australian “National policy on editing theses” (CASE 2004), and a revised version of these same guidelines, the “Guidelines for editing research theses”, approved by CASE’s successor, the Institute of Professional Editors (IPEd) in 2010,³² as well as the Canadian “Guidelines for ethical editing of theses / dissertations” (EAC 2012), have been consulted regarding the role of the thesis editor and the associated scope of tasks pertaining to the job of thesis editing. The IPEd and EAC guidelines for thesis editing can be described as case-specific adaptations of the “Australian Standards for Editing Practice” (CASE 2001) and the Canadian “Professional Editorial Standards” (EAC 2009) respectively, which are officially recognised as policy guidelines for editorial work in Australia and Canada. The Australian and Canadian standards for thesis editing have thus been chosen here to represent an officially accredited source for the discussion of the role and responsibilities of the thesis editor. Even

³² Both versions have been consulted for two reasons. First, they are both still available online. Second, they derive from the same institution (CASE was replaced by IPEd in 2008, as stipulated on the IPEd website), but with the difference that the revised version of the guidelines is considerably shorter than the previous version. Since the CASE version gives a few valuable insights into the perspective of the institution behind these guidelines, which are not prominent in the revised version to the same extent, both versions have been consulted.

though the understanding of the role of editors may generally vary somewhat between different countries, institutions and even individuals, the editing standards developed in Australia and Canada are nevertheless of transnational importance; the South African Professional Editors' Group (PEG), for instance, "has permission to distribute the Australian standards to its members and interested parties" (Van Aswegen 2007: 1146). Therefore the Australian and Canadian guidelines for thesis editing present an important source of information for a discussion of the role of thesis editors in contemporary South Africa.

The other sources of consultation on this matter come from within the context of South African research. As a second source, Van Aswegen's perspective on the role of the thesis editor has been considered. In her article "Postgraduate supervision: the role of the (language) editor: Sed quis custodiet ipsos custodes?" (2007), Van Aswegen describes her perspective on the role of an editor of research writing based on her own experience as a supervisor and editor of research work at the Cape Peninsula University of Technology (CPUT) in South Africa.

The third source of information is an article by Kruger and Bevan-Dye entitled "Guidelines for the editing of dissertations and theses: A survey of editors' perceptions" (2010). The article presents the findings of an e-mail survey, in which seven South African editors were questioned about their perceptions of the tasks and responsibilities of editors of theses and dissertations (Kruger and Bevan-Dye 2010: 153).

As noted in 1.4.1, this selection of sources does not cover the perspectives of all role players involved in thesis editing. The perspective of the writers of research work is not represented; the perspective of research supervisors is also only represented in Van Aswegen's article. As Kruger and Bevan-Dye (2010) remark, in order to establish a representative picture of the expected role of the thesis editor, all "stakeholders", or more specifically, "institutions, supervisors and students" have to be surveyed in the same way. It would be a worthwhile research project for a future study to expand Kruger's and Bevan-Dye's survey in order to integrate the perspectives of all role players and thus refine the presently inconsistent picture of the expected role of thesis editors.

Despite the constraints of an 'incomplete picture', the information available should suffice to delineate the present differences of opinion about the tasks and role of the thesis editor. The definition of the appropriate nature of editorial intervention in student research writing seems to be a delicate matter, with opinions diverging significantly as to which editing tasks are part

of a thesis editor's responsibilities, on the one hand, and how they should be carried out, on the other.

2.5.1 The thesis editor's tasks: a matter of controversy

While there was agreement between the three sources of information in some aspects regarding the thesis editor's responsibilities, it became apparent that there are significant differences about a considerable number of aspects that are relevant in defining the scope of tasks pertaining to thesis editing, and thus also the thesis editor's role in the process.

Among the sources considered, the results from the survey conducted by Kruger and Bevan-Dye offer the narrowest definition of the thesis editor's responsibilities. The IPED, CASE and EAC guidelines follow with a similarly strict picture of the thesis editor's tasks in which they include a few editing tasks in the thesis editor's expected portfolio that are not considered part of the thesis editor's job by the editors surveyed by Kruger and Bevan-Dye. Van Aswegen's definition of the tasks and role of the thesis editor seems considerably more comprehensive.

Despite significant divergences, which will be dealt with below, one aspect of agreement could be found that the different sources seem to agree on: the focus of thesis editing should be on copy editing and stylistic editing. Editorial work on the content, the structure, the layout and the bibliographical referencing of a student's work, however, is debated.

Kruger and Bevan Dye's study revealed that thesis editors themselves see thesis editing predominantly as a matter of correcting the "language and other textual errors" and of the "imposition of consistency in the text" (2010: 162). In other words, the surveyed editors see their responsibilities as applicable within the range of Mossop's copy editing tasks. With regard to stylistic editing, only very few tasks such as the correction of ambiguous passages and the maintenance of consistency in style and register (Kruger and Bevan-Dye 2010: 162) were specified by the respondents of the survey as pertaining to thesis editing. Kruger and Bevan-Dye ascribe this result to an awareness amongst thesis editors that stylistic editing "may easily become too interventionist" (Kruger and Bevan-Dye 2010: 162) in terms of the originality of the student's work. Admittedly, the borders between fixing faulty or infelicitous wording and rewriting a passage are somewhat unclear. With regard to stylistic problems, the surveyed editors hold that, if addressing those at all, problems should only be noted rather than solved, but left for the student to correct (Kruger and Bevan Dye 2012: 162).

Structural editing turned out to be seen by thesis editors as a matter of directing queries to the student only. The results of the survey state that structural problems “should not be corrected”, but merely be pointed out to the thesis writer at all “if they are prevalent” (Kruger and Bevan-Dye 2010: 162). No active editorial intervention is thus envisaged on the structural level.

A similar outcome was revealed regarding the level of content editing. Kruger and Bevan-Dye report that the respondents in their survey “see no role for the editor as far as the content of the text is concerned”. The researchers hypothesise that the surveyed thesis editors see content matters as part of the student’s and supervisor’s responsibilities (2010: 162).

In effect, it seems in summary that the collective of the surveyed thesis editors depicts the role of the thesis editor as a corrector of micro-level errors with limited responsibilities, most of which can be categorised as part of Mossop’s level of copy editing.

The IPEd and EAC guidelines for thesis editing also suggest a focus on copy editing tasks, or rather, they expressly exclude intervention on the levels of content and structure. The IPEd standards stipulate that substance and structure fall under the responsibilities of the student and supervisor (2010: 2), and the EAC guidelines explicitly warn that editing “must never affect the content or structure of the student’s thesis” (2012: 2). EAC also emphasises that thesis editing should not “go beyond simple correction of grammar, idiom, punctuation, spelling, and mechanics” (2012: 2). Furthermore, stylistic editing as well as structural editing and proofreading should only be done very carefully and preferably in the form of commentary to the student rather than direct textual alteration (EAC 2012: 2). To this extent, the editors surveyed by Kruger and Bevan-Dye and the Canadian and Australian guidelines seem to be in agreement. However, EAC and IPEd include editing tasks on the levels of copy editing and stylistic editing, which are excluded from thesis editing by the editors surveyed in Kruger and Bevan-Dye’s study. Aspects such as formatting, layout, terminology and language use, referencing and bibliographical correctness appear in the IPEd and EAC guidelines as part of the thesis editor’s responsibilities.³³ In Kruger and Bevan-Dye’s study (2010), editors hardly devoted any attention to these tasks, which were consequently interpreted as irrelevant or inappropriate for the job of thesis editing.³⁴

³³ For more details on which tasks EAC and IPEd include, refer to EAC (2009: 1-2) and IPEd (2010: 1).

³⁴ See statistic results in Kruger and Bevan-Dye (2010: 167-169), also attached to this thesis as Addendum A. Please note: all aspects with a means below 3 are considered irrelevant for thesis editing in the statistical results.

The correction of referencing and bibliographical style, in particular, seems to be highly contested as a task of thesis editors. However, referencing is an important part of a thesis and no less significant than comprehensible language or grammatical correctness. If the referencing is wrong, or if the bibliography is not complete and tidy, the scientific value of the thesis will diminish rapidly, and so will the student's chance of obtaining a degree with a good mark. While Kruger and Bevan-Dye's survey shows that the surveyed thesis editors do not see referencing and bibliographical styling as part of their responsibilities at all, the EAC guidelines address this issue, conceding that "the styling of citations needs care" (2012: 3). At the same time, however, they warn that the student's ability to work with a given referencing style is "part of what is being tested" (2012: 3). EAC's solution for this dilemma is a middle course between ignoring the issue altogether and presenting a falsified picture of the student's abilities; the guidelines suggest that thesis editors should not correct referencing errors, but indicate citation errors to the student, particularly if these errors are "consistent", and to "do the same for failure to give citations where they would be expected" (EAC 2012: 3). In simple terms, the work is not done for the students, but students are given a chance to work on their mistakes and improve their research before their work is submitted.

The high relevance of impeccable referencing for research work is emphasised by Van Aswegen (2007). In her terms, the bibliography embodies "the backbone of the thesis" (2007: 1139), and hence "much of the editing of the thesis involves correcting not only language errors, but inconsistencies and incorrect or incomplete in-text referencing" (2007:1147). This statement implies that Van Aswegen actively intervenes with the student's referencing skills as editor and corrects errors herself, whereas the EAC guidelines stipulate only indirect intervention by means of queries to the student, and the editors surveyed in the study conducted by Kruger and Bevan-Dye (2010) mention no editorial intervention at all in this respect.

Van Aswegen's definition of the thesis editor's scope of tasks seems to be notably more comprehensive in comparison with those suggested by the IPEd and EAC guidelines as well as by the results of Kruger and Bevan-Dye's survey. Van Aswegen identifies the bibliography as her "starting point" in the process of thesis editing. Because of its "backbone" (Van Aswegen 2007: 1139) status in research work, it "must be impeccably correct and consistent" (Van Aswegen 2007: 1147). In terms of her experience, bibliographies from all classes of universities "are generally riddled with errors, inconsistencies and omissions" (Van Aswegen, 2007: 1139). In Van Aswegen's definition, it is "onerous but essential" to "check each

reference for correctness in an appropriate scholarly database” (2007: 1139). The student’s responsibility in this procedure is merely to “provide the institutional or faculty/departmental bibliographic style guide” (Van Aswegen 2007: 1147). Van Aswegen therefore goes much further than merely pointing out referencing errors to the student, as suggested by the EAC guidelines. She intervenes directly with regard to aspects where others would either step in only indirectly by means of queries to the student, or not at all.

For Van Aswegen thesis editing obviously goes beyond the mere correction of language errors or dealing with grammatical problems. On the contrary, it includes the checking of facts and spelling of “unfamiliar names and places” (Van Aswegen 2007: 1147) as well as a comprehensive review and correction of all aspects involving referencing.

Furthermore, Van Aswegen attends to plagiarism as another important source of error in research writing. Even though in this case, she does not intervene actively by correcting suspicious passages, she claims that she will “caution strongly against plagiarism, especially when encountering vast discrepancies in style”, by means of a note or comment to warn the student of “author in sight” (Van Aswegen 2007: 1147). The EAC standards also have an option for the “identifying and flagging” of plagiarism (2012: 8) in the agreement form they suggest editors use as a form of contract between student and supervisor. Neither the IPED standards for thesis editing nor the collective of editors surveyed by Kruger and Bevan-Dye incorporate checking for plagiarism into the task portfolio of thesis editors, or address it in any way. In effect, unless the thesis editor himself is an expert in the subject in which the thesis is written, he may not be able to detect instances in which an idea has been taken from a source but has not been referenced correctly as “borrowed” material. Therefore, it might be too much to ask from the editor to account for large-scale plagiarism; the detection of such instances of plagiarism rather fall under the responsibilities of the supervisor, who is better acquainted with the subject field and with its key ideas and their origins. However, a thesis editor may well be able to note stylistic discrepancies, if any, and point these out to the student in the form of a note. This will not even mean much extra work; a change of style should strike a trained editor’s eye automatically.

Apart from that, Van Aswegen undertakes to “remind candidates that too much reliance on secondary rather than primary sources is unacceptable scholarly practice” (Van Aswegen 2007: 1147). It can be supposed that students are made aware of the difference between primary and secondary sources and their correct use in research writing at some point in the

course of their studies. Furthermore, it can be seen as the supervisor's responsibility to decide upon the sufficient or insufficient use of primary and secondary sources. However, it is not much of an extra effort for the editor, but it might make a difference to the student, if the use of too many secondary sources is indicated, and also if the editor simply recommends to the student the use of more significant primary material, should the supervisor not have done so beforehand.

As far as facts and argument in a thesis are concerned, Van Aswegen argues that the editor "should generally not question the candidate's argument, statement of fact, findings or conclusions" (2007: 1147), but may draw the student's attention to incidental factual errors" (2007: 1147). This opinion is closely in line with EAC's perception that the editor should never "even question the student's statements of fact or conclusions drawn from them", but instead attend to "the silly errors" (EAC 2012: 4).

As also suggested in the IPed and EAC, Van Aswegen's editorial intervention on the level of content is limited to the indication of "obvious errors or anachronisms" by means of highlighting the relevant passage in the text (Van Aswegen 2007: 1147).

Furthermore, Van Aswegen suggests the compilation of a "working document" in which "major problems and editorial changes" are indicated (Van Aswegen 2007: 1147). Such a document has more than one advantage for all stakeholders in the process of thesis editing. It not only helps the editor keep track of all important work steps, but it also gives the student and supervisor an account of all major problems to be attended to in the process of editing. The indication of major problems in such a working document, aside from editorial comments and notes in the text, gives the student a clear and comprehensive overview of major changes made or outstanding changes which have yet to be made by the student. It seems good practice to compile such a document for every thesis editing assignment. It might even be efficient practice to compile a list of all major problems found during first reading of the text, and to "work off" the different aspects on the list as editing proceeds. A working document may be developed on the side, based on the primary list of problems; major changes made by the editor can be included in the working document as well as major changes to be made by the student. If the editing process consists of more than one phase in which the editor makes suggestions and the student works on the text, a separate working document might be necessary for each phase. In addition to that, a memory sheet for the editor might help in order to not lose track, if the variety and number of matters to be attended to is considerable.

Such a memory sheet might be compiled on the side by the editor to remember issues such as particular spellings, consistency problems or matters to be attended to at a later point in time.

In summary, it can be said that there is no consistent conception regarding the scope of tasks pertaining to thesis editing at present. There seems to be agreement regarding certain aspects. The perception that the content and the argument of a thesis are the responsibility of the student and supervisor, for instance, and that editorial intervention on this level should not become dominant and be done with caution, is largely consistent. So perhaps is the idea that copy editing and to some extent stylistic editing should form the core of thesis editing; the interpretation of what copy editing entails, however, is not uniform. While the IPEd (2010) and EAC (2012) guidelines for thesis editing include aspects of referencing in their conception of copy editing – and according to Van Aswegen’s definition, the correction of referencing and the bibliography has even the most prominent position among the tasks relevant for thesis editing – the group of thesis editors surveyed by Kruger and Bevan-Dye (2010) follow a different conception, which excludes referencing issues from the thesis editing job altogether. Kruger and Bevan-Dye’s study (2010) revealed that editors perceive the correction of references and the bibliography³⁵ as irrelevant or inappropriate for the job of thesis editing.

It can be surmised that the surveyed editors see these aspects as part of the abilities a student is expected to master in order to attain a degree. Consequently, the editors supposedly see it as inappropriate intervention to attend to these aspects in the student’s work, since such intervention might misrepresent the academic competence which the student has to demonstrate with the thesis (Kruger and Bevan-Dye 2010: 155). Intervention in these aspects might eventually lead to the undeserved attainment of the degree.

This standpoint is easily comprehensible; the question that arises at this point is whether a way can be found of addressing these aspects in the editorial process without misrepresenting the student’s academic competence. After all, aspects such as referencing or plagiarism are vital aspects which will have an influence on the assessment of a thesis or dissertation. These aspects are therefore considered in the editing model suggested in 3.5.

³⁵ As well as aspects such as formatting, layout, terminology and language use.

2.5.2 The role of the thesis editor

The role of the thesis editor is closely interrelated with the set of editing tasks singled out as relevant for thesis editing; the definition of the editor's role is as much a function of the set of editing tasks specified as relevant for the job as the specified set of tasks is a function of the conceptualisation of the editor's role. Even though these two variables are presented here in separate sections, it is important to note that they are mutually closely dependent.

2.5.2.1 *The concept of ethical intervention*

Above all, the question about the role of a thesis editor seems to hinge on the concept of appropriate³⁶ or ethical³⁷ intervention. This is not objectionable as such; the pitfall, however, is that the definition of what constitutes "ethical" thesis editing seems to be subject to a certain latitude of interpretation, and the definition of ethical editorial intervention apparently diverges between different stakeholders in the processes of thesis editing.

In EAC's terms, "ethical" editing means to edit in such a way as to guarantee that "the work that students submit is indeed their own, only more polished" (EAC 2012: 1). Furthermore, the EAC guidelines define the responsibility of the editor as "not to produce a defensible thesis", but "to produce a thesis that ... [flows] and is at least clean" (unnamed graduate programme director in EAC 2012: 3). These definitions of ethical intervention are in principle all based on the premise that the "academic purpose" of research writing and the "priorities of thesis supervisors" (EAC 2012: 1) be respected by the editor.

Interestingly, Van Aswegen identifies with these definitions by EAC through direct quotation of the same words from an older version of the EAC guidelines in her article (2007: 1139). However, the fact that Van Aswegen's set of thesis editing tasks is not exactly the same as that of EAC, but considerably more comprehensive,³⁸ implies that ethical intervention may be interpreted differently.

Van Aswegen's argument implies further that it may be part of the thesis editor's role to reject a thesis for editing, if the problems in the text are too substantial (2007: 1147). Depending on the student's level of academic literacy, the editor might find theses on his desk which would have to be re-arranged on all levels from the beginning to the end, which would require

³⁶ See CASE (2004: 2).

³⁷ See EAC (2012: 1); see also Van Aswegen (2007: 1); see also "ethical dilemma" in Kruger and Bevan-Dye (2010: 153).

³⁸ See 2.5.1.

additional substance and structure, and which would in effect have to be rewritten altogether in order to be successful.

The requirement to write a thesis in a second language, for instance, may impair a student's ability to present an argument according to the requirements of thesis writing. It can be argued now, as Van Aswegen notes, "that a student seeking a qualification from an Anglophone university should be able to present and defend a thesis in comprehensible English" (2007: 1147), and that students who do not bring along the necessary skills to meet this and other requirements for thesis writing are simply not eligible as candidates for the postgraduate degree. The reality, however, is that "in South Africa this is not necessarily the case" (Van Aswegen 2007: 1147).

The question that arises here is a question of "appropriate" or "ethical" intervention. Can a thesis lose its eligibility for editing if the quality of the work is too low? Can the rejection of an editing project be the most "ethical" solution if the necessary editorial intervention becomes too extensive? What criteria would determine that the unedited product is too weak to be edited? In Van Aswegen's terms, rejection, according to her own experience, may indeed be indicated if a thesis "requires major rewriting rather than editing, since this type of editorial intervention raises ethical concerns in respect of the originality of the work" (2007: 1147).

According to CASE (2004: 1), "inappropriate intervention" by the thesis editor is to be avoided; guidelines for thesis editing are provided to prevent such inappropriate editorial activity. Unethical intervention, according to CASE, would be any editorial intervention which "misrepresents the student's academic ability or proficiency in English" (CASE 2004: 1).

The question, as so often in any pursuit to delineate "the editing task", is where to draw the line. To what extent is "polishing" of the student's work permissible and ethical, and where is the point at which the polishing becomes too extensive, so that the student's academic competence is misrepresented and the work is no longer only that of the student? If a thoroughly unidiomatic and grammatically poor second-language text is polished by the editor and turned into a linguistic treat while the content, structure and argument remain untouched, we might argue that the editorial intervention was "ethical" because the intellectual (research) part is still truly the student's work. But what about the student's language proficiency? Do not idiomatic language use and knowledge of grammar inform

examiners about a writer's linguistic skills? Would we not, strictly speaking, have to reduce thesis editing to an absolute minimum of intervention, say, to the detection of careless mistakes, if the concept of "ethical" is interpreted in the light of the pure academic purpose of a thesis or dissertation? Is not every intervention a misrepresentation in a way?

In principle, the definition of "ethical" intervention in thesis editing has a direct influence on how the thesis editor's tasks and role are defined and thus on the way in which thesis editing is approached.

2.5.2.2 Two ways of approaching an editing assignment

There are different ways in which thesis editing can be approached. The editors surveyed by Kruger and Bevan-Dye, for instance, approach thesis editing in a much more restricted way than Van Aswegen. Kruger and Bevan-Dye, however, do not necessarily perceive the approach of the surveyed editors as ideal; they take their survey as a starting point for the presentation of two contrary ways in which an editing assignment can be approached, distinguishing between a "product-oriented" approach and a "process-oriented" approach (2010: 153).

A product-oriented approach is more or less restricted to the "amendment of a text within certain parameters", and the thesis editor's activity is reduced to a defined "set of tasks or responsibilities", tailored to a particular type of text, which is to fulfil the specific functions of "reflect[ing] ... a student's intellectual work" and "leading to the attainment of a qualification" (Kruger and Bevan-Dye 2010: 153).

In other words, the product-oriented editing task focuses solely on the text, on the written documentation of a completed research project. The editor's role in this process could be described as that of a corrector who carries out all editing tasks which have been defined as relevant and as appropriate. The corrector can carry out the editing work on the finalised product without the need to enter into a dialogue with the student. Therefore the scope of editing tasks will have to be rather restricted, as suggested by the editors surveyed in Kruger and Bevan-Dye's study (2010) – given that the editor works only with the document and thus has to limit the tasks to changes which will not falsify the student's work or misrepresent the student's academic skills (as in CASE 2004: 1).

A process-oriented approach to thesis editing, in contrast, broadens the editor's scope of intervention significantly and allows for an editing approach which "involves individual and

social dimensions” (Kruger and Bevan-Dye 2010: 153). The editing service is not restricted to a focus on the written product only, but it becomes “part of a highly individualised writing and learning process” (Kruger and Bevan-Dye 2010: 153). In this process the role of the editor can be described as that of a second tutor (the primary tutorship, of course, remains with the supervisor). In a product-oriented approach, the editor may not need to pay attention to any aspect that is defined as the student’s academic responsibility; the process-oriented editor, on the other hand, has the responsibility to help the student “learn how best to express her ideas within the conventions and requirements of academic discourse” (Kruger and Bevan-Dye 2010: 155). In other words, a process-oriented approach allows the editor to enter into a constructive dialogue with the student and to give students the opportunity to learn from and correct their own mistakes before the thesis is submitted.

The greatest advantage of a process-oriented approach and the integration of the editing service into the student’s learning process is indeed that the editor can in fact work on all aspects of the text, or if you will, on all of Mossop’s four levels of editing – with the intervention still being “ethical”. The vital difference to a product-oriented approach is that it is not the selection of editing tasks in the first place which determines whether the intervention is ethical. In a process-oriented approach, the editing method is the most crucial factor. If the editor simply makes amendments to the text on all levels and the student receives back a document with all changes made in the text by the editor, the student can simply copy all changes from the edited document into the final draft. Or in case the editing has been done on screen with all changes tracked electronically in the text, the student can simply accept all editorial changes with a single click, though with a scant learning effect. In that case, it may be doubted if the intervention was ethical and whether the thesis can still be called the student’s original work. However, if the editor applies a less interventionist method by which queries are directed to the student to draw mistakes and areas for improvement to the student’s attention and to clarify the problem in a note or comment, though without making the necessary correction in the text, where not appropriate, the student has a real chance of correcting the problem himself – and the work is still the student’s own although the student is guided in the direction of the problem. Such a method of query may be especially appropriate for editorial intervention on levels of a thesis on which editing is particularly contested, such as the levels of content or structure.

A simple analogy from a different context shows the difference between a product-oriented and a process-oriented approach to thesis editing very clearly. If we try to describe these two

approaches in medical terms, we might find that they are in contrast to each other in a similar way as the symptomatic treatment of a disease and the treatment of its cause. In a product-oriented approach to thesis editing, in which the editor only works with the text, he corrects a certain number of errors – symptoms of a range of possible conditions in the student, such as a lack of experience, or a lack of language proficiency, the lack of certain research skills, or even just carelessness in some instances. Through the sole focus on the *text*, a product-oriented editing approach only allows for the removal of symptoms from the *text*.

A process-oriented approach to thesis editing, in contrast, allows for the treatment of the causes of the student's research problems. The editorial intervention does not only focus on the text, but it becomes an integral part of the student's learning progress. This integration allows for an overall "case history" and the identification of problematic areas in the student's academic performance, which cause the very symptoms in the thesis that might eventually lead to an unsuccessful result. Made aware of problematic symptoms in the thesis and their respective causes in a constructive way, the student can internalise the problem, eliminate the error in the text and avoid making the same mistake again. If the cause of a problem is recognised and eliminated, the symptoms will disappear automatically, and the chance of them recurring is much lower than if only the symptoms are removed, but the cause of the problem remains. Therefore, a process-oriented approach has a more sustainable "healing" effect for the student in the process of thesis writing than a product-oriented approach.

The question of which approach a thesis editor will choose and how he will conceptualise "ethical intervention" with respect to thesis editing is perhaps a question of ambition and of profitability, on the one hand, and of loyalty, on the other. As far as ambition is concerned, it is certainly less work to just correct a few copy editing problems and to deny any further responsibility. It may also be more profitable for the editor to stick to a product-oriented approach, since querying and tutoring the student certainly takes more time and effort.

On the other hand, the choice of an approach might also depend on the thesis editor's loyalty. To which of all the stakeholders and parameters does the editor feel most obliged? His client, in this case the student? The University with its provisions and demands? International education standards? Or the job market? Thesis editing seems also to entail a tug of war between these different stakeholders, with the editor in the meditating position, burdened with the task of balancing different interests.

In fact, the student is the paying customer. It seems odd to deny a service to a paying customer in the first place, especially if the service is denied because of certain “ethical” constraints, which might even clash with the customer’s interests. If we transpose this situation into a medical context again, the importance of “ethical intervention” seems very clear all of a sudden. We might suppose that a person approaches a doctor with a medical problem. It would seem anything but ethical if a standard treatment option was chosen simply because it requires minimum effort from the doctor, and no examination would be undertaken to ensure that the standard option will in fact help, and not kill, the patient. In this situation, we will certainly consider as “ethical” an approach which best helps the patient – and not the one with minimal effort for the doctor. Naturally, there are certain constraints here, just as there are constraints in the context of editing. The doctor is the medical expert, but he cannot over-extend his capacities. He can prescribe medication and recommend a change of lifestyle and regular exercise to his patient. However, it would not make any sense if the doctor took the medicine and began to exercise in the patient’s place. In principle, he could, but it would not improve the patient’s health, and might endanger both the patient and the doctor. In fact, the situation in the context of thesis editing is not much different. The editor, also the expert in a different context, can make recommendations to the student and advise where changes might be necessary. If the editor did the student’s work, it would not help the student in the sense that no improvement of the student’s academic skills would result from the editing. Furthermore, it would create a basis for doubting the originality of the student’s work and this might mean a danger to both the student who might be denied the degree, and the editor who might lose his integrity as a decent and reliable research editor.

Both product- and process-oriented approaches to thesis editing have their constraints. The latter, however, has a social quality which is not present in the former, but which is vital for a constructive thesis editing job. An approach which combines product- and process-oriented aspects, that is, integrates symptomatic and causal treatment of the student’s research problems through both direct change in the text and queries to the student, might in effect be the most effective and successful method. It may be justifiable to correct careless mistakes such as spelling or punctuation errors, certain consistency mistakes or even incorrect word choices directly in the text – after all, a comment saying “wrong word, please pick the right word” might be just as misplaced as a comment indicating “spelling error, please refer to your dictionary for correct spelling”. Such small mistakes can be made even by professional writers and are not indicative of the lack of a student’s ability to produce academic discourse. However, the sequence of an argument, the structure of a heading system or the use of a

certain referencing style certainly give information about a student's academic maturity which is to be tested in the thesis. Here, a process-oriented method might be indicated. But it can hardly be considered an infringement of the principles of originality if the editor helps the student on all levels, but in a way in which the decisive work is still done by the student.

A well-considered combination of these two approaches, but with a focus on the student's learning process, will not disregard the requirements of any side, but will be a win-win situation for all stakeholders. Students will be enabled to exploit their full potential and come out of the learning process with the best possible result, on the one hand, and an awareness of their weaknesses and mistakes, on the other, which they were given a chance to improve on and to advance their competencies. Universities will be assisted in their educational mandate and they will be able to award better marks in numerous cases and build up a good reputation. The education authorities, who lay down the parameters such as the "academic purpose of thesis writing" (EAC 2012: 1), will certainly not protest against better results or more highly skilled graduates as long as they do not see their parameters violated; statistics which evidence the high qualifications of university graduates can only be to the advantage of a state and its education sector. The job market will also only profit from the experience students can gain through a process-focused thesis editing approach. If we assume that the eventual purpose of a degree through the preparation of a research paper is having a better chance on the job market, it seems indeed justifiable, and perhaps even an obligation, to give students as many opportunities as possible to improve their work before submission. After all, the job market will see more profit in someone who has attained a degree with a good mark by correcting his own mistakes and thus learning from them than in someone who has attained a low final mark or no degree at all because of mistakes made through inexperience, and who is still making the same mistakes because he was never given the chance to identify or rectify them. Apart from that, inexperience can hardly be equated with intellectual deficit. Someone who is intellectually capable of learning from a mistake and willing to do so should be given that chance – not least because the willingness to acknowledge a mistake and the ambition to do better should also count as elements of the academic maturity to be acquired in postgraduate studies.

2.5.2.3 Screen versus paper

One relatively technical aspect of the controversy around the conceptualisation of the thesis editor's role shall be addressed in this section. The selection of literature reviewed in 2.5 produced different views regarding the question of whether a thesis should be edited

electronically or on hard copy. Kruger and Bevan-Dye (2010: 154) note that a common practice amongst editors is nowadays to work on the computer, using the tracking function of their word-processing tool, which makes the editorial corrections in the document visible on screen. The student, clicking through the edited document afterwards himself, can accept or reject the tracked changes one after the other, but it is also possible to accept or reject all changes in the document “wholesale” with a single click, without further consideration (Kruger and Bevan-Dye 2010: 154).

This function of word-processing tools has led to the question whether electronic editing is appropriate for thesis editing, or whether editing on paper copy might be “a more useful pedagogical tool” (Kruger and Bevan-Dye 1010: 258), given that the editing should have a learning effect for the student, and the student should do and improve the work, and not the editor, with the student only passively accepting all the editor’s changes afterwards. To this end, the CASE guidelines for editing theses (2004: 1) strictly expect editors to work on hard copy, since an electronic copy would make it “too easy for the student to accept editorial suggestions without thinking about their implications”. The revised version of these guidelines, approved by CASE’s successor IPEd in 2012, in contrast, allows editors to work on screen, but on the condition that the electronic document be returned to the student as a PDF file (IPEd 2010: 2). This shift from hard copy to PDF file seems to mirror the contemporary relocation of processes in all areas from mechanical to electronic dimensions. In fact, however, this adaptation only changes the method of work for the editor, who can work on computer now. The student is still presented with a document that, even though it is an electronic file, requires the same work method as a paper copy: the student may read the changes on screen, but he cannot work with the edited document on screen. The editor’s corrections or notes must still be worked into a separate working copy of the thesis. What appears to be a change of method at first sight is in fact only an adaptation of the same method to a new medium.

Kruger and Bevan-Dye hold a different opinion. Even though they advocate an editing approach which promotes the student’s learning process and conclude that returning an electronic document with all changes tracked is thus “evidently not optimal”, they warn that an approach by which the student works in the corrections from a hard copy (or a PDF file) into the unedited document is also “fraught with problems” such as “the risk of errors introduced during the inputting process” (2010: 164). As a consequence, a second editorial review of the student’s corrections with negative “time as well as cost implications” might be

necessary (Kruger and Bevan-Dye 2010: 164). Therefore, Kruger and Bevan-Dye propose electronic tracking in thesis editing as the most realistic “trade-off between time, cost, ease of use, accuracy and potential to enhance the student’s learning process” (2010: 163), despite the drawbacks of such a method. The group of editors surveyed in Kruger and Bevan-Dye’s study confirmed that the tracking of changes in electronic documents is indeed the most common mode of practice among them, with 75.7% of the respondents indicating that “editing electronically in a word-processing package like Microsoft Word, using the tracking function, and letting the author decide which suggested changes to accept or reject electronically was the mode of editing they most frequently employed”, and an even higher percentage of 81.1% of all respondents indicating this mode of editing as “the most appropriate when editing dissertations or theses” (Kruger and Bevan-Dye 2010: 163). This result is not surprising, in so far as the editors surveyed in Kruger and Bevan-Dye’s study presented the narrowest and strictest definition of the thesis editor’s tasks and role,³⁹ with the editing service being largely restricted to the level of copy editing, thus excluding levels on which it might be seen as too interventionist by the editor to change and track something in the text for the student to simply accept or reject the change instead of doing the work. We could also say that the survey results testify to a product-oriented approach, which more or less merely covers the correction of minor problems such as careless mistakes and spelling errors; it does not integrate the student’s learning process into the editorial performance and thus ascribes little responsibility to the editor’s role. Such an approach can more easily “allow” editors to make their (superficial) changes in the text and return an electronic document with tracked changes to the student than a process-oriented approach would, which can include all levels of editing, but which focuses on the student’s learning process and requires the student to do the decisive work himself.

At any rate, there is disagreement amongst different stakeholders regarding the question of whether thesis editing should be done on screen or paper, or rather, what kind of edited document the student should be presented with. Should the editor return an electronic copy in which the student can directly respond to the editorial intervention and accept or reject editorial changes where they occur in the text, or should the editor return a document to the student which cannot be used as the working document, where no changes can be accepted or rejected on screen, but from which the student has to read the editorial changes and suggestions to re-work them into the unedited version of the thesis?

³⁹ See 2.5.1.

It is remarkable that the debate over electronic versus hard-copy thesis editing merely turns on the implications of the respective method for its compliance with the purpose of thesis writing, but with no account being taken of the editor's position on the matter. Editors may have personal preferences as to the medium in which they work. They might be more experienced with either working on screen or on hard copy, and thus attain a better editing result with the medium they are most familiar with. The editor's preference is thus not without an impact on the final outcome of the editing process and eventually for the student's performance. It seems therefore inappropriate to prescribe the use of any medium irrespective of the editor's skills, especially – as shall be assumed here – since it is not the choice of medium which is decisive for appropriate editing of postgraduate research writing, but the way by which the editor handles the medium chosen.

While the screen versus paper debate seems to be continuing, the danger of the student accepting all editorial changes with one click can no longer be ascribed simply to the nature of an electronic document. Standard word-processing tools such as MS Word or the corresponding word processor of Open Office offer more functions than just the tracking of changes. A very valuable instrument for thesis editing is the comment function, for instance, which allows comments to be inserted at any given spot in the text. This function enables the process-oriented editor to easily circumvent the danger of the student accepting all changes at once without considering anything. Wherever the editor wants the student to rethink something, a comment can be placed at the respective position in the text to indicate the problem to the student. The wording of the comment is defined by the editor, and must not include a solution to the problem. In contrast to a tracked change, which includes the solution and has been made only for acceptance or rejection, a comment can leave it to the student to solve the problem.

Interestingly, none of the sources of literature consulted above seems to ascribe enough importance to the comment function to make the screen versus paper debate redundant and to make the tracking and the comment function of equal value for ethical thesis editing.

Whether the editor returns a paper copy (or PDF file), or whether he returns an electronic document to the student is not decisive for the ethicality of the editing job. The crucial point is the editor's informed and responsible use of the methods of direct change and query, that is, the tracking and comment functions in electronic documents. Consequently, the choice between screen and paper should no longer be a matter of prescription. It should be negotiated individually by the editor and the student – perhaps even in agreement with the supervisor –

according to the editor's experience, the student's preferences and the supervisor's conception.

While general editing practice has long since used queries, notes and suggestions as natural alternatives to direct changes to the text, and word-processing tools already offer the necessary functions to implement this practice equally well on screen as on paper, theory still seems to be pursuing a black-and-white debate about on-screen versus hard copy editing. In fact, however, with highly sophisticated computer tools which allow for an equally sophisticated editing service, the actual focus of this debate has shifted unnoticeably. What is still debated as "screen versus paper" is in fact a weighing up of the assets and drawbacks of two different modes of editing, that is, direct editorial changes in the text, which can simply be adopted by the student, versus editorial queries to animate the student to carry out the necessary change. It is a debate about acting versus advising. A debate about symptomatic versus causal treatment. It is a debate about the distribution of responsibility between different parties. The debate has many aspects and can be given many names, but ultimately the question that stirs this debate is: which is the approach that allows the conflicts of thesis editing to be resolved to the maximal satisfaction of all role players?

2.6. Summary – an integrative approach envisaged

The literature review presented in this chapter has produced a remarkable variety of different aspects relevant to thesis editing, on the one hand, and an equally manifold variety of angles from which these aspects can be looked at, and from which thesis editing can be approached. It is suggested here that the combination of theoretical and practical input from different sides will increase the effectiveness of thesis editing. "Effectiveness" is here understood as that combination of all those features from each side that are advantageous and practical for thesis editing in the sense that they enable the largest possible overlap of interests of all stakeholders in the process. In other words, we are looking for an approach to thesis editing which negotiates the ideal of "ethical" and "appropriate" thesis editing to the maximum advantage of all those involved in the editing process, or affected by it in one way or another. To this end, an integrative approach is suggested here, which combines the most valuable elements from different aspects. The aim is to create an editing model with the necessary flexibility, comprehensiveness and vigilance to offer a platform for fair and professional thesis editing in a contemporary context.

The model is integrative in the sense that it integrates a technical basis with a process-oriented perspective on thesis editing, by which the editing service is being integrated into the student's learning process, and vice versa.

The technical basis is provided by Mossop's four levels of editing. A division of the editing work on these four levels into two main working phases according to the competences of gatekeeper and language therapist will form the core structure of the practical editing procedure. In the first phase, the editor may attend to all gatekeeping tasks, that is, he works on the levels of addressing the copy, structure and content of the thesis. In the second phase, the editor will adopt the role of a language therapist and may attend to the stylistic amendment of the thesis. Since Mossop's four levels of editing are largely generalised and not tailored for thesis editing as a particular type of editing assignment, some aspects which are particularly vital for thesis editing are not dealt with in his approach. Therefore, Mossop's approach will be supplemented with three aspects taken from Van Aswegen's thesis editing tasks portfolio. These three aspects are:

- attendance to in-text referencing and bibliography in terms of correctness and adequate compilation (balanced use of primary and secondary sources);
- indication of plagiarism;
- compilation of a working document for the student.

This largely technical side of thesis editing will be complemented by a process-oriented perspective, which requires the editor and the student to cooperate in a tutor-student relationship. The focus of the editing service shall rest on the individual needs of students in their learning process. A process-oriented perspective allows the editor to work on all levels of the text (according to where changes are necessary), since the learning process of the student naturally concerns all levels of his thesis. This all-inclusive approach, however, applies on the condition that the editor assumes a responsible and critical position with regard to choosing the appropriate mode of intervention.⁴⁰

⁴⁰ See 2.5.2.2 and 2.5.2.3

Chapter 3: Empirical study – practical editing of a dissertation

3.1 Introduction

This chapter is based on the practical editing of a sample dissertation (Text A), edited by the author of this thesis. Text A was written in 2011 in English by a German native speaker (Student A) for submission at University A. After a description of the editorial process through the use of examples in 3.2, the two major phases in which the editing was organised are going to be compared in 3.3. Subsequently, the practical work is reflected on in 3.4 with a view to the design of an editing model, which is suggested in 3.5. The practical work represents the basis of the procedures of this research. Proceeding from this empirical first step, theory was reviewed in search of a suitable scientific basis on which a model for the editing of postgraduate research writing can be developed. Mossop's four-level editing approach in *Revising and editing for translators* (2007) was chosen as the most suitable basis for this study. Motivations for this choice were discussed in 2.4.

Text A is attached to this thesis in two different versions. The unedited original draft can be found in Addendum B. The full edited version containing the editorial changes in tracked format as well as all comments made by the editor is attached in Addendum C. All examples taken from Text A and cited in this thesis in order to demonstrate the editorial intervention are taken from the version attached in Addendum C. The page numbers as well as the numbers of editorial comments cited in this chapter therefore also refer to the edited version of the dissertation attached in Addendum C.

3.2 Description of two editing phases

In order to achieve high-quality editing results, Mossop (2007: 35) recommends that editors, particularly non-professionals, concentrate on each of the four levels of editing separately, since such a strategy is less challenging than a combined edit. If all four levels are attended to at once, chances are high that the number of missed errors will increase (Mossop 2007: 35). Even though it is plausible that the final result will be better if the editor focuses on each level separately, the practical editing in this study was divided into two editing phases because of a restricted time frame.

The two phases in which the dissertation was edited are described in the following sections, using examples from the practical work. Mossop's four-level system provides the basic order

in which the practical examples are presented. Mossop's approach is applied to the examples to demonstrate its suitability for thesis editing.

3.2.1 Phase I: a combination of the levels of content, structure and copy

The first editing phase combined the levels of content editing, structural editing and copy editing, and was primarily concerned with the correction of errors in normative terms. Without deciding on the sequence of procedures consciously in greater detail, it seemed logical to get the larger structure in order before attending to details. To this end, the most prominent substantial and structural problems were attended to first. Similarly, Mossop recommends that the most efficient strategy is to start with "macro-level" concerns before attending to "micro-level" editing (2007: 37) and to stylistic issues. Therefore, my first editing phase began with the levels of content editing and structural editing to get the macro structure right in terms of the requirements of a thesis. The level of copy editing was further attended to once the macro structure was in order. Copy editing involves the micro structure of a text, it is concerned with the correction of erroneous aspects regarding general rules such as grammar, spelling or punctuation. As the first phase was dedicated to the correction of errors, copy editing technically belonged to this first phase.

3.2.1.1 *Content editing*

As I am not an expert in the field of European financial regulation, with which the sample dissertation is concerned, the content-related editing work was limited to the correction of logical and mathematical errors rather than to the detection of false facts. This is not to say, however, that I ignored the possibility of factual errors in the dissertation. Mossop argues that "one reason specialised texts need to be content-edited by subject-matter specialists is that others may not recognise factual errors" (2007: 81). Hence, as I could not guarantee factual correctness including "the accuracy of quotations from publications" (Mossop 2007: 81), a general note at the end of my edited version of the dissertation reminds the student to ask the supervisor for a final check before the work is handed in.

With regard to logical errors, I found two major problems. First, the thesis exhibited an inconsistent use of tenses in the sections describing a four-level legislative framework for the regulation of the European financial market (see Text A: 6-11; Addendum C). The sections describing level 1 and level 2 are written in the present tense, while the sections about levels 3

and 4 are written in past tense. It does not become clear why the tenses switch from present to past tense until the very last sentence of the section describing level 4:

Through the reform of the Level 3 bodies subsequent to the financial crisis, their tasks now include some provisions, which are intended to aid the Commission at Level 4 (Text A: 9; my comment JGB46).

The explanation for the inconsistency in the use of tenses can be deduced from the logic of the example sentence; the institutional bodies on levels 3 and 4 described in the dissertation were reformed at a later stage and were no longer effective at the time of writing (at least not in the form described in the relevant passage of the dissertation). It was thus obvious that tenses needed special attention in this particular dissertation, since the dissertation “traces” a process over a period of several years, namely the time of “the development of the institutions for prudential supervision of the financial system at the European level” (Text A: 1). The intention of the writer was to indicate to the reader that the level 3 and level 4 bodies had been reformed by using the past tense. However, for the reader to be able to follow the argument, it is not enough to simply change the tense. To avoid confusion, the readers should be informed in the first place that they are reading about institutions which were subsequently reformed at a later stage. My suggestion in this case was that the writer indicate earlier in the paragraph that the institutions had been reformed. It would, however, have been inappropriate to make changes according to my understanding of the proper solution to the problem, since as a non-expert, I was not sufficiently informed about the extent to which the respective institution had been reformed, for instance. Thus I could not have decided on whether parts of the description of the institutions would actually need to be written in the present tense, because parts of these bodies are still in operation, or whether the entire section must be written in the past tense because the institutions are no longer operating. In order to avoid the introduction of errors, which Mossop judges to be “worse than failing to see an error” (2007: 83), I chose to point out the problem in a comment:

Each Member State was to designate one high-level representative of their national public authorities responsible for the national supervision of the securities sector (Text A: 8; my comment JGB38, Addendum C).

Temporal logic is of the utmost importance in this particular case, because it indicates to the examiner whether the student understands the chronology of the respective processes and developments, and whether he was able to produce a realistic picture of the present situation

Comment [JGB1]: It should be mentioned earlier that Level 3 has been reformed, actually at the beginning of the paragraph, where Level 3 is presented. And it should be made clear which points are still valid and which ones have been reformed... It is confusing for the reader if this is just done by alternating past and present tense.

Comment [JGB2]: Why does the tense suddenly switch to past tense? Is everything under Level 3 no longer valid? Or is it still valid, but the past tense wants to indicate that Level 3 was reformed at a later stage (as you indicate in the last sentence of the chapter describing level 4)? Either way, it would be important to inform the reader what the situation is and to choose the tense accordingly. This accounts for the whole paragraph under the heading Level 3. An easy way to help the reader follow would be to indicate at the beginning of the section about Level 3 that this body has been reformed at a later stage and that it is not operative any longer in the way described in this paragraph. In that way, your reader will understand instantly why you are writing in the past tense now.

with reference to the impact of past events. Thus I understood this tense inconsistency as a key problem of my dissertation sample, because it not only confuses the reader in a particular passage, but it can create uncertainty in the reader about the present situation. If it is not made clear which institutions and processes are still operative and which have ceased to operate or have been reformed or replaced, the reader will not be able to follow the argument and might eventually reject the dissertation.

The second major logical problem was less prominent and perhaps less serious than that relating to the use of tenses. On the third page of the dissertation draft, the creation of two committees on different levels of supervision is mentioned:

At Level 2, a political regulatory committee representing the Member States was created and assigned the primary function of supervising the Commission. At Level 3, a technical expert committee representing the national supervisory authorities was instituted with advisory functions for Level 1 and Level 2 (Text A: 4; Addendum C).

A few pages further, the writer refers back to these two committees, but informs the reader that the two committees were both set up on the same supervisory level:

In November 2003, the Commission instituted the two new Committees at Level 3 (Text A: 9-10; Addendum C).

It does not become clear from the context which version is the correct one, and whether the committees were in fact instituted on the same level or on different levels of supervision. As it was again impossible for me as a non-expert to rectify the problem, I decided to warn the writer about it in a comment so that he had the chance to clarify this apparent contradiction:

In December 2002, the Council invited the Commission to extend the Lamfalussy process to the banking and occupational insurance sector, and to establish the corresponding committees as soon as possible. In November 2003, the Commission instituted the **two new Committees at Level 3**; (Text A: 9-10; my comment JGB47, Addendum C).

Apart from these two major logical errors, and as far as I could judge from my non-expert position, the content seemed coherent and comprehensible. More time-consuming, however, was the editing work on the structural level.

Comment [JGB3]: On page 3 you state that one committee is instituted at Level 2 and one at Level 3: "Initially, two new committees were instituted. At Level 2, a political regulatory committee was created representing the Member States and was assigned the primary function of supervising the Commission. At Level 3, a technical expert committee was instituted, representing the national supervisory authorities and was assigned advisory functions for Level 1 and Level 2."

Here you state now that two committees were instituted at Level 3. Please clarify which statement is correct.

3.2.1.2 Structural editing

Regarding the structure of my dissertation sample, the most obvious problem was a lack of clarity in the heading system. Mossop argues that consistency in the heading system is important, because features such as positioning, numbering and formatting of headings “are visual signals of the structure of an argument” (2007: 77). In addition to that, sub-headings “signal a change of topic” and help the reader follow the argument (Mossop 2007: 78).

In the dissertation sample no consistent formatting of the headings nor any kind of sub-headings were found to indicate which paragraphs come under the same topic. Some of the headings were written in bold and capital letters throughout, while others were written in small letters. The combination of these different types of formatting has a severe eye-straining effect, as can be seen here if we take as an example the sequence of the following headings in the dissertation draft:

THE DEVELOPMENT OF THE EU SUPERVISORY SYSTEM

3L3 JOINT COMMITTEES

REVIEW OF THE LAMFALUSSY PROCESS 2007

2009 Redrawing of the Committees

EVALUATION OF 2009 CHANGES

FINANCIAL CRISIS – DE LAROSIÈRE

(Text A: 9-16; Addendum C)

Sequences of uppercase letters are generally more difficult to read than sentence case as in usual continuous text (Telg 2012: 2); apart from that, uppercase sequences easily create the impression of an aggressive attitude of the writer towards the reader (Telg 2012: 2). I did not categorise the capitalised headings as wrong, but suggested to the student that it would be enough to use bold formatting for the main headings. The required simplicity of a heading system in order to guarantee clarity for the reader, as suggested by Mossop (2007: 77-78), is

not only valid with regard to the number of layers in the heading system, but can also be regarded as a norm for other visual aspects such as font and type face. The combination of bold and capitalised letters in a heading appears quite pompous, almost aggressive, and is harder to read than usual running text. This combination therefore rather obscures than contributes to clarity and is hence a choice that could be reconsidered.

To facilitate the reading process, I further suggested introducing numbered headings (Text A: 2; my comment JGB11, Addendum C), so that sub-headings can be introduced and recognised as such by the reader.⁴¹ In order to help the student, I designed such a heading system throughout his text – which turned out to be a time-consuming project. It was necessary to fully understand the content and the relationship between the ideas discussed in order to be able to find sub-headings for sub-topics and place them correctly. In retrospect, I would like to argue that it is not necessarily the job of an editor to complete such structural work for the client; depending on the commission and the situation, the editor might hand the text back to the client with the information that the heading system needs to be revisited. Particularly in thesis editing, it may be seen as too interventionist if the editor, rather than the student, reworks the structure of the text. This problem is considered again in 3.4.1, and reasons are given why the heading system was changed as part of the editorial process.

Lengthy paragraphs were divided up into shorter sequences and numbered sub-headings were introduced for the readers' guidance. In line with this, Mossop notes that it is generally "easier to read a text in which subheadings appear every few paragraphs" (2007: 78). After my corrections, the above example of a heading sequence was amended as follows:

2. The Development of the EU Supervisory System

2.1 3L3 Joint Committees

2.2 Review of the 2007 Lamfalussy Process

2.2.1 The Content of the Review

2.2.2 Redrawing of the Committees in 2009

⁴¹ See also 2.3.1.3.

2.2.3 Evaluation of the Changes in 2009

3. Financial Crisis – De Larosière

(Text A: 9-16; my changes, Addendum C)

As the section headed “3L3 Joint Committees” turned out to be a sub-topic of “The development of the EU Supervisory System”, it would help the reader to see the relationship between these two sections. This could easily be achieved by changing “3L3 Joint Committees” into a sub-heading. Similarly, as the paragraph headed “Review of the 2007 Lamfalussy Process” is rather lengthy and discusses a number of aspects, the reading will be facilitated if this division into several aspects becomes visible in the physical structure of the text. Therefore, the sections headed “Redrawing of the Committees in 2009” and “Evaluation of 2009 Changes” should appear as sub-headings under “Review of the 2007 Lamfalussy Process” rather than as unrelated main headings. The content of the review appears as another aspect at the beginning of this section. An additional sub-heading was therefore introduced.

Mossop argues that it may be confusing for the reader if a heading system has too many layers unless the text is a manual, which will be read in parts only and thus needs an expansive heading system for “quick referencing” (2007: 77). Therefore, the heading system suggested in this thesis sample consists of three layers only. Mossop suggests further that the layers should be signalled to the reader (2007: 77). The numbering introduced into the suggested heading system will help the reader to instantly recognise the different layers. The main headings have been formatted as bold to highlight their prominence and assist the reader to gain a quick overview of the central topics.

Apart from such major changes in the heading system, smaller consistency problems in the headings had to be attended to as well. The following example of four headings shows such a case of structural inconsistency:

LEVEL 1 – BASIC POLITICAL CHOICE

LEVEL 2 – DETAILED TECHNICAL REGULATION

LEVEL 3 – FOSTERING SUPERVISORY COOPERATION AND CONVERGENCE:

LEVEL 4

(Text A: 6-9; Addendum C).

The first two headings are largely consistent. They announce the level discussed in the subsequent paragraph and indicate the functions of the respective level in the form of a nominal phrase. The third heading, however, contains a gerund and thus deviates syntactically from the first two headings. The gerund “fostering” gives additional information on the nature of the activities on level 3, but if it is indeed the main concern on level 3 that supervisory cooperation and convergence are fostered, it will become clear from the context of the subsequent paragraph and thus must not necessarily be mentioned in the heading. Since the headings are structurally more consistent without the gerund, it was decided to take it out. The last heading, by contrast, needs additional information to achieve consistency. While the first three headings indicate the functions of each respective level, the last heading fails to do so. Once again, I informed the student about the problem and made a suggestion for a solution. The edited version looks as follows (including my major formatting adaptations):

1.2 Level 1 – Basic Political Choice

1.3 Level 2 – Detailed Technical Regulation

1.4 Level 3 – Supervisory Cooperation and Confidence

1.5 Level 4 – Enforcement

(Text A: 6-9; my changes, Addendum C).

The third most prominent structural problem was the recurrence of unexplained acronyms (Mossop 2007: 76), or more precisely, the introduction of institutions by their acronyms without their full names being mentioned first. As established in 2.3.1.3, the readers will have difficulties understanding the text if institutions unknown to them are not introduced with

their full name before using acronyms thereafter, especially if the readers are non-experts on the subject. I found a number of unexplained acronyms in the text and pointed out the problem to the student in a comment, as for instance in the following section:

Just as the **CESR**, the CEBS and CEIOPS were independent advisory bodies, and each committee was to ²²⁶“adopt its own rules of procedure and organise its own operational arrangements²²⁷” (Article 7).

(Text A: 10; my comment JGB48, my changes, Addendum C).

The structural editing absorbed the greater part of my first editing phase as specifically the creation of a new, functional heading system was a time-consuming affair, demanding a high level of alertness and a holistic overview of the dissertation.

3.2.1.3 Copy editing

The copy editing in my first editing phase included those parts of copy editing which are closely related to the structural features of the thesis and affect logic. The copy editing work concerning idiom was done later on in my second editing phase, which was concerned with the language of the text.

In the first phase, comma placement needed attention. A number of commas were inserted in passages in which a compulsory comma was absent, such as in non-restrictive relative clauses. In the following example, there was originally no comma in the sentence; the comma after “objectives” was introduced:

In order to improve the efficiency of the committees, the Commission suggested that they should be given specific objectives, which they had to achieve in a given timeframe (Text A: 12; my change, Addendum C).

The comma after “objectives” affects the logic of this non-defining clause in so far as it clarifies that the subordinate clause after the comma contains additional, qualitative information about how the Commission was to handle the specific objectives. Without a comma the same clause would only relate to the noun “objectives” as an attributive description thereof. The omission of the comma in this sentence would thus falsify the intended meaning.

Comment [JGB4]: Who is this? You still didn't introduce the full name. Please see also comment JGB22 page 3 where CESR appears for the first time.

In other cases, a decision had to be made on whether to place an optional comma or not. As presented in 2.3.1.1, Mossop speaks in favour of a lighter punctuation, meaning a limited use of commas only where they are absolutely necessary (2007: 49), and he suggests as a rule of thumb to omit a comma “if in doubt” rather than place it (2007: 49). There might be cases in which such a rule is helpful, but the editor must be able to resist the temptation of declaring any comma problem as a “case of doubt” simply because it would be a greater effort to investigate grammar rules, to enquire about possible shifts in meaning which could be effected by placing or omitting a comma, and to come up with an individual solution which serves the reader. The editor should first take all such effort, and if he cannot come up with a conclusive solution, Mossop’s rule of thumb might become applicable. On the one hand, one might think, why place a comma only “to mark grammatical boundaries” (Mossop 2007: 49) if the sentence would be clear without it. On the other hand, there are instances in which a sentence may be clear without a comma, but an optional comma would serve as a “mental pause” (Mossop 2007: 47) and spare the reader some unnecessary work. The effect of such a pause becomes clear in the following example:

The European Banking Authority (EBA) substituted the CEBS, the European Market and Securities Authority (EMSA) substituted the CESR and the European Insurance and Occupational Pensions Authority (EIOPA) substituted the CEIOPS (Text A: 29; Addendum C).

If we leave the sentence as it is, the reader may have to do some additional mental work to understand the content correctly. The sentence consists of three idea units:

- 1) the substitution of the CEBS by the EBA,
- 2) the substitution of the CESR by the EMSA,
- 3) the substitution of the CEIOPS by the EIOPA.

The first idea unit may become clear to the reader at first sight, because a comma, in other words a mental pause, after CEBS indicates that a second unit follows. However, there is no such break after the second unit, and the readers are not informed that while reading on, they are moving from the second to a third idea unit. Consequently, they will presumably understand that the EMSA substituted the CESR *as well as* the EIOPA, and only when they have nearly finished the sentence will they realise that the EIOPA has in fact not been substituted, but by contrast, substitutes yet another institution. The readers will thus have to take the effort to go back, insert their own mental pause after the second idea unit, and re-read

the sentence in order to process the information correctly. The writer, or the editor, can easily spare the reader such extra effort by inserting an optional comma:

The European Banking Authority (EBA) substituted the CEBS, the European Market and Securities Authority (EMSA) substituted the CESR, and the European Insurance and Occupational Pensions Authority (EIOPA) substituted the CEIOPS (Text A: 34; my change, Addendum C).

I agree with Mossop that an overly heavy use of commas is not necessarily the best choice because it might disturb the visual pattern of a text, and the readers might find too many mental pauses tiresome. Nevertheless, I would like to suggest that the placement of optional commas cannot be summarised in an ‘either/or’ rule of thumb, but that it must be decided in each individual case which will be the better solution in order to serve easy mental processing. If one would want to create a rule of thumb, I would suggest a more reader-focused rule such as “if a comma helps the reader, place it, and if it helps avoid misunderstanding, place a comma too”.

Mossop warns that rules can sometimes be misleading, or rather, that following the strictest version of rules might “reduce the number of semantic options”, and that the editor might even create a disaster by blindly following rigid rules (2007: 48). Copy editing can become a particularly challenging task because the editor may need to make a decision against a certain rule, should this rule not be applicable in a specific case. In addition, copy editing can depend on spadework on other levels of editing before amendments on the copy level can be made.

The following example shows such a case:

By the end of the 1990s, however, it became increasingly obvious that the previous policy had not delivered the desired results, a single financial area had not developed and that in numerous legislative areas harmonisation had not set in (Text A: 2; Addendum C).

Before copy editing could be attended to, an adaptation had to be made to ensure structural consistency. The writer mentions (Text A: 1) three “increasingly obvious” facts:

- 1) the policy had not delivered the desired results,
- 2) a single financial area had not developed,
- 3) in numerous legislative areas harmonisation had not set in.

(Text A: 2; Addendum C)

Mossop argues that “parallel ideas [must be] expressed through parallel forms” (2007: 68). Mossop presents the requirement of parallel form as part of stylistic editing; in the case of the above sentence, however, the absence of parallelism overlaps with the level of structure. In order to achieve a parallel form in the above sentence, all three facts must be connected to the umbrella notion of “having become obvious”. If we try to link each of the three facts separately to the introductory part of the sentence, we will find that the first and the third facts are well linked up with the introductory part by a connecting element, which is, however, missing in the second fact:

- 1) it became increasingly obvious **that** the previous policy had not delivered the desired results
- 2) it became increasingly obvious a single financial area had not developed
- 3) it became increasingly obvious **that** in numerous legislative areas harmonisation had not set in

(Text A: 2; Addendum C; my emphasis,.)

Clause 2) is grammatically incorrect in itself – the conjunction “that” is necessary to correct it and connect the second fact to the rest of the sentence in the same way as the other two facts to achieve a parallel form.

My edited version of the sentence includes the conjunction as well as an additional comma:

By the end of the 1990s, however, it became increasingly obvious that the previous policy had not delivered the desired results, that a single financial area had not developed, and that in numerous legislative areas harmonisation had not set in (Text A: 2; my changes, Addendum C).

Through the insertion of the conjunction “that”, the comma after “results” needs a revisit. A common rule of thumb instructs writers never to place a comma before “that”. This rule of thumb is presumably a reversion of the principle that the pronoun “that” should be used in restrictive clauses (which are not split by commas and therefore, “that” never follows a

comma), while in non-restrictive clauses, which are separated by commas, the pronoun “which” should be used. In the above example, the comma after “results” is followed by “that”. Following the above rule of thumb, the editor would have to take the comma out. Only by being aware that this rule is actually a derivation of the relative clause principle can the editor choose a useful solution. If we look at the sentence closely, after all, we will realise that this is in fact not a relative clause, but that the sentence actually consists of an enumeration of the three facts listed above.

Without the comma after the first fact, the readers would mentally connect the first and the second fact while reading, as there is no sign indicating any change. They would then realise that there is a second fact following the first one, and they would have to make an extra mental effort to determine where the information about the first fact ends and where that about the second fact begins. Apart from that, the above sentence without a comma in the considered place would be grammatically misleading. This supports Mossop’s thesis that it is not always the best choice to blindly follow the most “rigid rules” (2007: 48), and it proves that even though rules might lead to correct results in most cases, they need to be treated with caution – there is always the chance of encountering an exception. In order to spy out such exceptions, the copy editor must go beyond grammatical rules and always focus “on meaning” – on the level of copy editing to the same extent as on the level of content editing (Mossop 2007: 84).

The additional comma inserted in my edited version of the sentence is an optional comma. It helps the readers in so far as it informs them that what follows after the “and” is not just additional information about the second fact, but that actually a third fact is following, which is of equal importance as the first and the second fact. I propose that an optional comma here is a worthwhile investment in the readers’ comfort.

Apart from comma placement, smaller errors such as missing words, spelling mistakes or apostrophe errors had to be attended to. The dissertation discusses various kinds of committees on various institutional levels, and the writer sometimes seemed to have had difficulties differentiating between *committee’s* and *committees’*. In most cases, the context made it possible to construe whether a single committee or a number of committees was referred to, and a correction could be made accordingly by using the tracking function. Where it was not entirely clear from the context, the problem was pointed out to the student in a comment, as in the following example:

In order to ensure the presence of the Commission, it was decided that the Commission would designate a high-level representative, who would be entitled to participate in the Committee's debates but would not hold voting rights (Text A: 8; my comment JGB39, Addendum C).

Comment [JGB5]: Is the apostrophe correct here? Or does the entitlement actually refer to the right to participate in the debates of all level 3 committees? If that is the case, it must be committees' with the apostrophe at the end.

Throughout the entire dissertation German inverted commas with the introductory inverted commas at the bottom had been used accidentally and needed to be adapted to the English use of inverted commas with both introductory and conclusive inverted commas at the top. The Search and Replace function of Microsoft word served as a helpful tool to make this correction throughout the whole dissertation in one step.

Apart from that, a few syntactic weaknesses could be found where in most cases the sentence structure was not wrong but uncommon. An attempt was made to amend the sentence structure so that it became less complex. The following example shows such changes in the structure of a sentence with regard to rendering it more compact and less clumsy:

Original:

Second, in view of the pace of innovation in the securities market, the Committee was charged to assess the suitability of the legislative framework to keep pace with the rapid speed of innovation (Text A: 3; Addendum C).

Edited version:

Second, the Committee was charged with assessing the suitability of the legislative framework as to its potential of keeping up with the rapid speed of innovation in the securities market (Text A: 3; my change, Addendum C).

The original sentence begins with a subordinate clause. By changing the sentence to begin with the main clause and by modifying the subordinate clause to attach fluently to the main clause, the sentence is easier to read because the main idea – that is, the committee being charged with something – becomes clear right in the beginning. The sentence is a few words shorter and appears less complex. In addition to that, the repetition of “innovation” within the same sentence was edited out.

The intervention in this case might also be categorised as pertaining to Mossop's smoothing phase on the level of stylistic editing. Amongst other aspects, Mossop's smoothing has to do with the correct linking of sentences in order for the flow of the text to be maintained, and

with the amendment of the positioning of the different parts of a sentence.⁴² These tasks are rather technical and overlap with structural editing. The intervention in the example sentence particularly features the re-positioning of parts of the sentence in order to facilitate reading. Hence, the category of smoothing applies in principle as well to this particular example. Smoothing is, however, still part of stylistic editing and thus focuses on language problems. The intervention in this particular example sentence was of a technical rather than a stylistic nature; the amendment was less concerned with language aspects per se than with the technical relocation of the different parts of the sentence. Therefore, the sentence was amended as part of the first phase; it might, however, also have been possible to attend to this sentence in the second editing phase as a rather technical case of stylistic editing.

As a last aspect, referencing was attended to as well as possible. The problem was that the referencing was not complete in my sample. There was no sign of any bibliography, nor were all in-text references in place. On several occasions, the student had provided an incomplete reference, which was highlighted in red, apparently as a reminder that the reference still needed additional information, as in the following example:

In the latter case, the Commission would lay down a timeframe in which the committees' had to deliver their advice (Article 2)

(Text A: 8; Addendum C).⁴³

There was no chance for me as editor to establish whether the student's referencing was complete and consistent and whether all sources cited in the text re-appeared in the bibliography. Even though I see such work as pertaining to a thesis editor's copy editing tasks, since referencing is an essential element of a thesis or dissertation, my editorial intervention remained rather restricted by the absence of the necessary information. Where information was given, the editorial commentary on referencing either concerned small-scale issues such as spelling enquiries, as in the following example, or consistency issues as in the subsequent example:

⁴² See 2.3.1.2

⁴³ Please note: "(Article 2)", as in the example, including the red highlighting, is not a product of the editor but an exact copy of the original.

As Quaglia notes, “the regulation and supervision of financial services has lagged behind in the agenda of the European Union (EU) until the very end of the 1990s” (politics 269)

(Text A: 2; my comment JGB12, Addendum C).

Moreover, the Report criticised the Council for adopting overly complicated legislation by attempting “to fit 15 sets of national legislation into one Community framework” (Lamfalussy final 14)

(Text A: 3; my comment AB15, Addendum C).

A note at the end of the edited dissertation informs the student of the fact that his referencing was incomplete and the editing relating to referencing aspects was accordingly restricted. The comment further reminds the student to include all missing references as well as the bibliography.

A combination of a variety of aspects, the copy editing work on this dissertation was a challenging task and required a keen eye. And in fact, with reference to Mossop’s four levels of editing, my copy editing work was not completed after my first editing phase, since I had not yet attended to idiomatic questions.⁴⁴ In the first editing phase the focus was on the correction of erroneous parts of the text and on the adaptation of the text to general textual rules, while in the second editing phase, the focus was on the language of the dissertation. Idiomatic language use was thus included in the second phase as part of the linguistic polishing of the sample text.

3.2.2 Phase II: style and idiom

The second phase mainly focused on improving the language of the dissertation wherever it seemed insufficient or unsuitable with regard to the requirements for postgraduate research writing. Therefore, the level of stylistic editing was the main focus of the second phase. Additionally, the second phase included the aspect of idiomatic language usage. Mossop originally categorises idiom as pertaining to copy editing (2007: 64); however, an unidiomatic sentence is not necessarily wrong in a grammatical sense. Idiom was found to be technically more closely related to the phase in which the language of the text is improved on rather than to the phase in which grammatical errors are corrected. Idiom affects the linguistic quality of

Comment [JGB6]: Is the lower-case spelling correct here?

Comment [AB7]: Please note: Your reference of the same document on Page 3 reads: (Lamfalussy final report 99). Please review whether your reference is correct with or without the “report” and use the correct version consistently throughout your paper. Please also check: should “final report” be capitalised?

⁴⁴ Mossop categorises idiomatic issues as pertaining to copy editing (see Mossop 2007: 40).

a text; therefore idiomatic language use was pooled with stylistic editing in the second editing phase, in which the dissertation was given a linguistic polish.

As described in 2.3.1.2, Mossop divides stylistic editing into two phases. The first phase concentrates on “tailoring of language to the readers” (2007: 60) by adapting the language to the readers’ characteristics, and the second phase is aimed at “smoothing” of the text to facilitate processing (2007: 64) of the text by the reader. In the case of the dissertation sample, the profile of the reader was determined rather quickly, since the readership consists of the examiner in the first place and the academic community within the respective subject area in the second place. This means that the readers will be educated academics with presumably a high level of knowledge of the topic. The examiner’s motivation to read the text will be the same as the use he makes of it – examine the work for assessment. With regard to the examiner-as-reader, time and place in which the work is written and read will be close together, since a thesis is normally examined within a year at most after its completion. The writer-reader relationship will be generally distant and impersonal.

As far as tailoring vocabulary to the reader is concerned, my “treatment plan” as a language therapist in this particular dissertation was as follows:

- Guarantee an adequate degree of formality. Mossop argues that “the formality of the language needs to reflect the relationship between writer and reader” (2007: 63). This means in the case of the dissertation sample that colloquial expressions should be removed and replaced by more formal ones as appropriate for an unfamiliar writer-reader relationship, and that the word choice must be analysed and revised wherever applicable.

Regarding smoothing, the treatment plan in the dissertation sample included the following:

- Clarify unclear and ambiguous passages, even though we can say that an expert will be reading another expert’s work and will understand complex facts in the respective subject field. Nevertheless, the dissertation should be written in a way that does “not give rise to the ‘huh?’ question” (Mossop 2007: 64). After all, the examiner can be expected to evaluate the student’s ability to reproduce a complex topic in a clear way.

My editorial intervention regarding idiomatic language usage included the following:

- Render unidiomatic expressions idiomatic to achieve a more convincing overall impression, which might translate into plus points in the marking. Mossop notes that unidiomatic usages may be particularly present in the writing of people working in a “multilingual environment” or in the writing of people who are “not native speakers” (2007: 42-43). As the writer of the dissertation sample is a German native speaker, an investigation into English idiomatic language usage in the dissertation was considered advisable.

Following Mossop’s structure of stylistic editing, examples of my editorial intervention on this level are described in the categories “tailoring the language” and “smoothing”, with the additional category of “idiom”.

3.2.2.1 Tailoring the language

As far as tailoring vocabulary and the degree of formality to the reader’s needs are concerned, my approach was to draw the student’s attention to informal passages or word choices through a comment rather than rewriting the passage, since in most of the cases the text passages were not wrong but only unsuitable. As it is the student’s work which is to be evaluated, I found it more appropriate to point out the problem and make a suggestion, such as in the following two examples, but to leave it for the student to make a decision.

Comment with suggestion:

“However, if the Level 2 committee rejects the Commission’s proposal, the Commission may not adopt it. In this case, the proposal is submitted to the Council, which **has three months to consider it**” (Text A: 7; my comment JGB28, Addendum C).

Comment [JGB8]: A bit colloquial. Suggestion: “which has to consider the proposal within a period of three months.”

In-text suggestion supported by a comment:

“Especially in the context of cross-border institutions, the **lack-absence of cooperation stands out** is particularly prominent” (Text A: 16; my change, my comment JGB67, Addendum C).

Comment [JGB9]: The two expressions “lack” and “stand out” are a little colloquial. Please see the alternative suggestion in your text.

The following four sentences present cases in which the word choice was found to be not ideal:

- 1) “Lenders **who knew that they would** sell their entire credit default risk to **someone else** had little incentive to ensure high standards of lending” (Text A: 17; my comments JGB68 and JGB69, Addendum C).
- 2) “This is clearly **shown** by the reform” (Text A: 39; my comment AW99, Addendum C).
- 3) “This was further reinforced by the **lacking** transparency of the market and the internationalisation of finance” (Text A: 18; my comment JGB72, Addendum C).
- 4) “After the **manifestation** of the international financial crisis in 2007” (Text A: 1; my comment JGB2, Addendum C).

Comment [JGB10]: intending to

Comment [JGB11]: a third party

Comment [AW12]: demonstrated

Comment [JGB13]: obscured

Comment [JGB14]: emergence

In examples 1) to 3) the word choice of the student implies spoken language and is rather informal; it seems that he simply chose the word which usually comes to mind first, without pondering whether another solution might be more to the point or more suitable in terms of the expected degree of formality. In examples 1) and 2) a comment was placed to suggest synonyms with a higher register. For sentence 3) an expression could be found which is both less colloquial than “lacking” and more descriptive of the way in which transparency is affected. The word choice in example 4) is not necessarily colloquial, but “manifestation” would rather be used in a medical or philosophical context. For the political context of this dissertation, I consider a slightly more neutral term such as “emergence” more appropriate.

3.2.2.2 *Smoothing*

The smoothing work largely consisted of the specification of pronouns such as “this” and “it”. Mossop categorises amending work on this level as part of the smoothing phase of stylistic editing (2007: 68). There were quite a few sentences in which the relationship between the elements was ambiguous because pronouns and their antecedents were not specified sufficiently, as in the following three examples. I attempted to clarify these ambiguities, again in the form of suggestions wherever I could deduce the intended relationship from the context

as in examples 1) and 2). In cases where the relationship did not become clear from the context, I pointed the problem out to the student, as in example 3).

- 1) “The Council was further reprimanded for relying too heavily on directives, giving the Member States a high degree of discretion. **This** frequently resulted in EU legislation being implemented delayed and in various national interpretations, which obstructed the goal of an even playing field for financial actors” (Text A: 3; my comment JGB16, Addendum C).
- 2) “Second, whereas the Member States were highly reluctant to grant significant powers to the EU supervisory bodies prior to the international financial crisis, it seems that a change of mind has set in after **it** and that a consensus arose that some tasks are more efficiently conducted at the European Level” (Text A: 39; my comment AW100, Addendum C).
- 3) “Whereas the draft technical standards have the potential of being powerful tools to foster harmonisation and convergence, it is yet to be seen if the ESAs can use them freely. **This** is predominantly dependent on the Commission, the Council and the EP” (Text A: 34; my comment JGB89, Addendum C).

Comment [JGB15]: It is not clear what “this” refers to here. Your reader might understand it as referring to the fact that the Council was reprimanded, or even as referring to the Member States being given a high degree of discretion. But I suppose the intended reference is the reason for which the Council was reprimanded? Please check. Suggestion: “This lapse frequently...”

Comment [AW16]: the crisis

Comment [JGB17]: It is not quite clear what “this” refers to. Perhaps the question of whether the ESAs can use the tools freely? In that case, you could write: “This freedom of the ESAs ...”. Please check again what you are intending to say.

3.2.2.3 *Idiom*

The aim of editing idiomatic usage in the dissertation was to give the text a more English-sounding final touch, since the writer is not an English native speaker. It was thus worthwhile to consider the text for unidiomatic passages and render them more idiomatic. Those members of the academic community who might read the dissertation can also be expected to either be native speakers or to have a certain level of English proficiency; thus they might be alienated by unidiomatic phrasing in the same way as the examiner. It can only be an advantage to eliminate from the text all such passages, which may potentially give rise to some doubt in the examiner. The dissertation exhibited a number of unidiomatic usages where two idiomatic expressions had been combined and confounded. Mossop identifies this phenomenon as typical unidiomatic usage, because the mind may “retrieve two expressions at once” (2007: 42). In the following two examples, the unconscious combination of two idiomatic expressions resulted in unidiomatic phrasings. The problem was pointed out to the student in a comment suggesting idiomatic solutions:

1) “Nonetheless, by recommending regulations as primary policy instrument, the Committee ~~made a case in favour of~~ more harmonisation and less Member State discretion” (Text A: 5; my comment JGB20, my change, Addendum C).

Comment [JGB18]: You have mixed up two idiomatic expressions here. To make it idiomatic, two solutions are possible here: either “made a case for”, or “pleaded in favour of”.

2) “This may lead to ~~an overeagerness of the ERSB being overly concerned with making sure to avoid to prevent that uncertain warnings are expressed, which would put it in danger~~ In that way, however, the ERSB might run the risk of issuing warnings too late or of underestimating the magnitude of a risk” (Text A: 36; my comments AW93 and AW94, my changes, Addendum C).

Comment [AB19]: Perhaps consider putting this a little more idiomatically? Please see suggestion in your text.

Comment [AB20]: I think “to put in danger” is not very idiomatic. “To expose to a danger”, “to put at risk” or “to run the risk of” would be more idiomatic (see suggestion in your text, but please note that “risk” appears at the end of the sentence already...).

The second editing phase turned out to be less comprehensive than the first phase. Polishing style and idiom was entirely different in the very nature of the work than correcting errors on the macro and the micro levels of the text, as had been done in the first editing phase. The reflection on the two-phase editing approach in the following section explains this difference in the comprehensiveness of the two phases. In addition, essential insights from the retrospective application of Mossop’s approach to the practical editing work will be discussed.

3.3 Comparison of two editing phases

This section presents a comparison of the two phases in which the sample dissertation was edited. The objective of such a comparison is to show that there is a characteristic difference between these two phases, and that this very difference has a decisive formative impact on the thesis editing model suggested in 3.5.

3.3.1 Correcting versus improving

The two phases in which I had edited my text sample differed in terms of a qualitative aspect. The primary goal of the editing assignment was to produce a draft of the dissertation which is factually correct, logical and clearly structured in order to avoid any unnecessary loss of marks in the final examination. Therefore, the first editing phase was intended for the correction of errors. It combined editing intervention on the levels of content, structure and copy in order to cover all aspects where we can speak of “right or wrong” with regard to general rules as well as the requirements in the specific context of thesis writing.

The secondary aim of my editing work was to improve the quality of the language in order to increase the chances for plus points in the final marking. The second phase therefore focused on stylistic editing and idiom. Unlike the first phase, it was not primarily concerned with correcting what was wrong, but rather with deciding about “suitable” or “unsuitable” language use with regard to the requirements of thesis writing, and with improving the linguistic and idiomatic texture of the dissertation where this was found necessary in order to meet these requirements.

The two phases therefore differ in the nature of the respective kinds of editorial intervention. While the first phase was concerned with correcting what was wrong, the second phase was concerned with improving passages which were not wrong but rather phrased in a way which was regarded as unsuitable, inelegant or unidiomatic. While the correction of primarily technical aspects is bound to a rather rule-focused and thus restricted frame, the improvement of linguistic patterns is open to a certain artistic freedom.

This division matches Mossop’s description of two ways in which a text can be amended. He argues that a text can either be *corrected* or *improved* (Mossop 2007: 17; his emphasis). As presented in 2.3.1.5, Mossop associates these two types of editorial intervention with the two roles of gatekeeper and language therapist (2007:17).

3.3.2 Gatekeeper and language therapist

In retrospect, I realised that the two phases in which I had edited the text sample in this inductive study turned out to share a key feature with Mossop’s editing approach. This feature is found highly practical for thesis editing and is not present in a similar form in any other of the approaches presented in Chapter 2. After a review of Mossop’s approach subsequent to the practical editing of the dissertation, it became apparent that the two-phase editing strategy applied in the practical work was unconsciously a surprisingly close replication of Mossop’s task division according to the two roles of gatekeeper and language therapist.

In the first editing phase, which included the levels of content, structure and copy, I had assumed the perspective of Mossop’s gatekeeper, concentrating on the correction of erroneous parts of the text and on the adaptation of the text to general textual rules (2007: 17). In my second editing phase, in contrast, which focused on style and idiom, I had assumed the role of Mossop’s language therapist, who works on the linguistic makeup of the text and “improves

the text to ensure ease of mental processing and suitability of the text for its future users” (Mossop 2007: 17).

3.3.3 Comprehensiveness

The two editing phases did not only differ in their nature but also with respect to their comprehensiveness. Three major reasons were found to explain why phase one turned out more comprehensive and intensive than phase two.

First, the gatekeeping phase encompassed a much greater diversity of editing tasks than the second phase. Because of time pressure, which required a comprehensive edit in a short period of time, three of Mossop’s four levels were combined and attended to in the first editing phase. The second phase, in contrast, was focused on language therapy and was thus concerned with only one of Mossop’s four editing levels, with the inclusion of idiom as an additional matter of linguistic concern.

The second reason why the first editing phase turned out more time-consuming was the fact that I am not an expert in the subject matter in which the dissertation was written and had to acquaint myself with the topic before being able to make reasonable decisions. It is vital for an editor to determine as well as possible whether a text passage appears to be unclear because the writer has failed to present the argument clearly or because the editor’s own subject-specific knowledge is insufficient. I found that editing in a field “with which you are not yet familiar” (Mossop 2011: 41) has both advantages and disadvantages. On the one hand, it is the perfect test for the quality of representation of the argument in a thesis or dissertation, if the work is edited by a non-expert in the respective scientific field. Even though the work is written by a prospective expert and will thus contain subject-related features such as jargon, it needs to be written clearly enough so that a non-expert can follow the argument. Therefore, it might be easier for an editor who is not acquainted with the subject matter than for an expert to tell whether the argument is presented logically enough. On the other hand, editing work done by a non-expert can be a waste of time for both the editor and the client because of unnecessary comments from the editor questioning jargon or subject-related facts. In the mistaken belief that an uncommon rendering of a certain phrase is wrong, the editor might even replace correct subject-specific phrases with more unsuitable universal ones (Mossop 2011: 41) and thus weaken the quality of the argument. Unconsciously aware of this danger, I preferred to work with comments to communicate with the student instead of making in-text corrections where I was not able to judge whether a correction was indicated. Even though

some or other comment might be dispensable and might mean an extra step for the student to delete it again, I did not run the risk of replacing precise jargon with general phrasing, for instance.

The third reason why the first editing phase turned out particularly comprehensive was the extensive work on the structure of the dissertation. The structural editing was specifically time-consuming, because it required a profound overview of the whole paper and a good understanding of its substantial structure. Otherwise it would not have been possible to introduce a functional heading system.

3.4 Reflection on the practical editing work

This section reflects on the observations which have been made and problems that have arisen during the practical editing of the dissertation sample.

In reviewing the different editing approaches it became obvious that the finalised practical work had more features in common with Mossop's approach to editing than with any other approach, and that of all the approaches reviewed, Mossop's approach – with its division of the work into the competence fields of gatekeeper and language therapist – provides a highly suitable basis for the editing of theses and dissertations.⁴⁵

Considering the fact that it is the student's academic skills which are to be tested and evaluated in a thesis, my approach to the practical editing was as transparent and as communicative as possible in order to work together with the student. I used the tracking function of Microsoft Word in order for the student to be able to see where changes had been made directly in the text. Where direct change was considered inappropriate because it would have become too extensive for a thesis, I worked with comments in which I indicated problems in the text and, where applicable, made suggestions for possible solutions. In some cases comments were also used to explain in-text changes where the reason for the change might not become clear to the student without any explanation. Even without having considered any theory prior to the practical work (the practical editing of the dissertation was the first step of my research), my approach presented on the whole a realisation of Mossop's (2007: 34) statement that an editor should have a "helping" function rather than being a "substitute writer" competing with the original author. Aware of the purpose of thesis writing,

⁴⁵ See 2.4 for a detailed account of the suitability of Mossop's approach to thesis editing.

I had intuitively chosen an approach which was appropriate for the particular situation and which was in line with the general conception of the role of the thesis editor.⁴⁶

All changes, comments and suggestions I had made in the practical editing of the dissertation could be attributed to Mossop's four major levels of editing and the various sub-levels which belong to each of these levels. In other words, the retrospective application of Mossop's approach to the practical editing work in 3.2.1 and 3.2.2 of this study shows that Mossop's approach has all the necessary features to provide the basis for practical thesis editing.

3.4.1 Unethical intervention on the structural level

In retrospect, I realise it would have been enough to give the student a thorough account of the structural shortcomings of the paper and recommend that he reviews the structure again instead of amending the structure for the student. In this particular case of dissertation editing, my comprehensive structural editing might be seen as too interventionist. In effect, with my acquired knowledge through the literature review on the conception of the role of the thesis editor and the conceptualisation of "ethical thesis editing" I would contend in retrospect that my structural editing was indeed too interventionist to be truly within the lines of what might be considered appropriate in this particular assignment.

Given the narrow timeframe in which the dissertation had to be prepared for submission, it was perhaps more efficient that I arranged a more functional structure for the student. In addition to that, the structural amendment and the introduction of a heading system facilitated my own editing work in the second editing phase; with a reworked structure, it was easier to follow the text and to fully concentrate on language. Nevertheless, with the theoretical knowledge gathered in the course of my own study,⁴⁷ I consider my intervention on the structural level as too interventionist in terms of the purpose of thesis writing and the prerequisite of originality, and therefore not ethical in this particular assignment. The argument that the introduction of a functioning heading system facilitated my own work does not on its own justify such a degree of intervention; after all, the introduction of a heading system by the student would have facilitated my editorial work in a similar way. If I were to complete the same assignment again, my approach to the structural editing would be different. I would point out structural problems to the student clearly, encourage him to amend the

⁴⁶ See literature review and discussion in 2.5.

⁴⁷ See discussion on the role of the thesis editor in 2.5 and 2.6.

structure accordingly, and only on receiving back the amended document would I carry on with my editorial work.

In case of the student failing to improve on the structure in the course of revision, an alternative way of intervention on behalf of the editor might be indicated. It cannot really be considered ethical to give a willing student no further assistance should he have failed to amend the structure of his text in the first place. There are certainly cases in which more extensive intervention is necessary for the student to come to understand what is needed. In certain cases a learning effect might also be achieved by imposing a structure onto the text in order to show the student what is expected. Such a strategy may work and be of value for the student in any upcoming projects. However, this strategy should be used rather as an “emergency strategy” and not as the strategy of first choice.

3.4.2 An incomplete draft and a written agreement to avoid trouble

Even though the running text of the sample dissertation was complete as such, certain elements which are essential in a dissertation were absent, so that the draft could not be considered as complete. Aside from the fact that the title was missing, there was no bibliography, nor were all in-text references complete. I attended to referencing matters as well as I could; however, I was not able to check the absent bibliography for completeness, consistency or for its correspondence with the MLA style, which the student indicated to me as his style of referencing. My editorial intervention with regard to referencing remained rather limited, as demonstrated in 3.2.1.3.

The difficulty with an incomplete draft is two-fold. First, after editing the draft that he was presented with, the editor might find another version of the same draft on his desk at a later stage, with the student, after having added information, expecting a second edit of his work. Second, if the editor works with an incomplete draft and the student finalises his work without any further editorial control, deficits might turn up during the examination, resulting in a loss of marks. If the editor is acknowledged in a thesis which exhibits severe deficits with regard to essential elements such as the referencing system, but there is no written document in which the scope of editorial intervention is determined, the defects in the thesis might eventually rebound upon the editor as a supposed failure on his side.

Therefore, as experience from my practical work and the subsequent literature review indicated, it is extremely advisable to clarify the level of intervention and the editing tasks

comprising the editorial service beforehand in each particular assignment and to negotiate them with the client in detail before accepting the commission, so that no misunderstandings occur later. It is therefore indeed advisable for the editor to draw up a written agreement,⁴⁸ after having had a first look at the student's work and profile, in which the level of intervention is determined and a tasks profile is compiled for the specific editing assignment. Such a document should be signed by both the editor and the student, and, if possible, acknowledged by the supervisor. Apart from negotiating the levels and the degree of editorial intervention, it can also be stipulated that the thesis draft presented to the editor will be treated as a final draft version and that no later versions will be accepted. The student can be made aware of such a regulation beforehand, so that he has the opportunity to complete the draft before handing it in for editing.

3.4.3 Idiomatic language usage and the limits of second-language editing

Even though the second editing phase had its own difficulties, it seemed less heavy and intricate on the whole, not only because I was acquainted with the text and the topic from the first run-through, but also because it concentrated on language matters only. Working as a language therapist turned out to be more enjoyable in so far as it feels more comfortable to show the client a way of putting a correct phrase still more elegantly than pointing out to the client where he has made errors.

The work on idiomatic language usage, however, turned out to be challenging. I am not an English native speaker, and acquired as opposed to native language skills always come with a restricted sense of idiom. Hence, it is likely that I was not able to detect every case in which a correct phrase could have been rendered more idiomatically. Things were further complicated by the fact that I am a German native speaker as well and both the writer and I are constrained by the German idiomatic context. It is definitely an advantage if the editor is a native speaker of the language in which the thesis or dissertation is written, but an editor should be acquainted with the native language of the writer if it differs from the editing language. It is possible that a passage is found unidiomatic during editing, and yet it is difficult for the editor to determine what the writer intended to say, particularly if the editor has no acquaintance with the writer's native language. This is especially delicate in cases where a language A idiomatic expression uses a different metaphor than its language B idiomatic counterpart. Therefore the editing situation in the case of the dissertation sample was not ideal; an English

⁴⁸ As suggested in the EAC "Guidelines for ethical editing of theses / dissertations" (2012).

native editor with advanced German language skills would presumably achieve a result of higher quality, at least with regard to the linguistic features of the dissertation.

3.4.4 Working documents as a support to retain a proper overview

During my practical editing work it became obvious that in a written document of extended length it can become difficult for the editor to keep track of all changes and suggestions so that they are made consistently throughout the paper. There are Microsoft Word functions which can assist the editor in this regard, such as the “Search and Replace” function, which allows changes on recurring elements to be made in the whole paper with a single operation. When it comes to content and structure, however, the editor needs to have a good overview of the text and to internalise the facts and arguments presented as thoroughly as possible and memorise them to be able to maintain (or query) the logical flow of the argument. There is presumably no general recipe on how to train such memory capacities, but they will certainly grow with editing experience. If there is time, it could be helpful for learners to work through the text several times and use coloured highlighting to mark important relationships between the different facts presented, or to mark spots in which consistency problems occur in order to correct them later. Another valuable option might be the compilation of a memory sheet on which the editor makes extensive notes for himself in order to facilitate recall. This particularly applies to copy editing work during which the consistent use of micro-level elements such as spelling or abbreviations is to be achieved throughout the paper.

In retrospect, the compilation of a working document⁴⁹ for the student, as suggested by Van Aswegen, in which major changes that were made and problems which occurred in the thesis are pointed out collectively to the student (Van Aswegen 2007: 1147) seems highly advisable in addition to a memory sheet for the editor. In my practical assignment no such document had been drafted, and the indication of problems and major changes merely occurred in comments in the margin of the text. In retrospect, I can conclude that my editing work and the incorporation of my editorial suggestions by the student were not substantially impeded by the absence of such a working document and a memory sheet. The communication was effective enough through the comments alongside the text. However, it might have given the student a better overview of the major problems in his paper had he been provided with such a working document. The greater the variety and number of problems in a thesis or dissertation, the greater the danger that the student and/or the editor loses track of all aspects, and the more helpful is such a working document. Even though it is also possible to use comments at the

⁴⁹ See 2.5.1.

respective points of the thesis at which a major problem has manifested, it seems more effective to indicate such major shortcomings in a separate document so that the student is informed about and alert to them right from the beginning. Comments can still be placed additionally in the respective text passage to remind the student of the problem.

There may be theses or dissertations that are of such high quality before they undergo editing that only small changes are necessary and no major problems occur. In such cases, it makes sense to dispense with a working document for the student. Whether such a document is worth being compiled in each particular assignment must be left to the editor's discretion. Nevertheless, it is suggested that such a document be drafted whenever it may contribute to a better orientation of the student in the process of thesis editing and whenever it promotes the engagement of the student in the process of textual improvement.

3.4.5 A two-phase editing strategy as a practical approach to thesis editing

Unconsciously in line with Mossop's recommendation that learners in the field of editing should not try to manage all editing levels at once from the start, I had divided my practical editing work into two sequential phases.

Mossop's recommendation for learners, however, to "master each of the types of editing" separately (2007: 35) seems a little idealistic and is presumably viable in classroom situations only. As soon as a real-life assignment is on the table, there will always be time pressure and four separate run-throughs would have taken too long in my assignment.

The first editing phase, concentrating on three of Mossop's four levels, was comprehensive and challenging enough at the beginning, but I would always recommend splitting a comprehensive assignment into more than one editing phase, not least because one always misses out on errors which might be spotted in a second or third run-through.

For a division of an editing job into separate phases, one should keep in mind that the boundaries between the different editing levels are not always definite. This should not be regarded as a problem, but rather as an opportunity to come up with an ideal strategy for each respective assignment – such as in the editing process of the sample dissertation, in which I decided to cluster Mossop's four levels into two consecutive phases and furthermore to include idiom-related issues in my language editing phase, even though Mossop categorises editing work on idiom as part of copy editing.

For my editing assignment I found the division of my work according to the two roles of a gatekeeper and a language therapist very useful in retrospect. I had not planned to start working as a gatekeeper and subsequently as a language therapist; this situation in fact resulted from the division of my work into the two phases according to what I considered to enjoy priority in this particular situation.

I would like to argue that in thesis or dissertation editing, the role of the gatekeeper should enjoy priority before the role of the language therapist. The most vital features of a thesis are correctness of the facts presented, clear and grammatically faultless presentation of the argument, and fulfilment of the technical requirements of a thesis – features which all fall under the gatekeeper’s range of editing tasks. Fine-tuning of the language is a worthwhile goal, yet it is a secondary priority; a stylistically well-written piece of intellectual hollowness will not go very far as a thesis or dissertation.⁵⁰

I would like to recommend that editors of postgraduate research writing consider a division of the editing work into a gatekeeping and a language therapy phase as a practical approach to thesis editing. By means of such a division, correctness and logical presentation of the argument are automatically guaranteed before language is improved.

A division of the editor’s work in thesis editing according to Mossop’s roles of gatekeeper and language therapist will thus feature as the backbone of the editing model suggested in 3.5. An adaptation of Mossop’s four-level editing approach to the task of thesis editing will produce a two-phase editing model, in which the thesis editor carries out the work of gatekeeper and language therapist consecutively – according to the primary goal of factual correctness and the secondary goal of linguistic refinement.

On the whole, Mossop’s approach and his recommendations for learners offer great assistance for practical editing, and I would like to recommend *Revising and editing for translators* (2007) as a worthwhile purchase for every current or prospective thesis editor.

⁵⁰ Naturally the weight of the stylistic and idiomatic features of a thesis or dissertation may vary according to the nature of the aspired degree. Language-related matters can be expected to have a considerably higher importance in theses written as part of programmes in which language plays a central role. Nevertheless, substantial, structural and grammatical correctness will hardly ever become less vital in a thesis than stylistic matters, irrespective of the nature of the programme.

3.5 Suggestion of a practical model

This section brings together insights from the literature review in Chapter 2 and the empirical study reflected on in the foregoing sections of this chapter. The aim of such a combination is the design of a practical model for the editing of postgraduate research writing. The suggested model is intended to provide guidance for everyone entrusted with the task of editing such research work. The model is therefore equally intended for the use of professional editors, editors still in training and non-professionals, given that not every student can engage the services of a professional editor, and it is thus not uncommon practice that students have their work edited by friends or colleagues.

The model does not provide a rigid set of rules for thesis editing, nor does it prescribe any definite and immutable order for the process of thesis editing. It rather serves as a suggestion for a practicable way to proceed through a thesis editing assignment.

This study has been undertaken in the course of postgraduate studies at a South African university and thus focuses on the South African context to a certain extent. Some of the examples used or considerations presented in this study, as well as a significant portion of theory consulted, refer back to the South African environment. The editing model as such, however, is deliberately not bound to any specific context. It is to be understood and utilised as a general aid for thesis editing but which is, however, flexible enough to be adapted to the specific context in which a given thesis editing assignment is to be completed.

3.5.1. Process-oriented approach as general basis

- Approach your editing commission as part of the student's learning process. This means that you help the student to the best of your own abilities without doing the decisive work for the student and without violating the prerequisite of originality.
- If you handle the thesis itself and the working document (see 3.5.3.2) as medium through which you can help the student understand, correct and learn from his own mistakes, you are contributing to a better chance for the student to complete the degree successfully in a legitimate way.
- Make extensive use of query and communicate with the student instead of making changes yourself, particularly on editing levels on which direct change by the editor can easily be seen as too interventionist (as predominantly on the levels of structure and content). Through a process-oriented approach, there is no pressure for you to

avoid working on any given level of the text, because by use of the appropriate method, you can circumvent the danger of doing an unethical job. If you pick the appropriate method, you can do a more comprehensive job than if you were to restrict your service to the correction of minor mistakes.

3.5.2 Mossop's approach as technical basis

- You may use Mossop's four levels of editing and the respective sub-categories as point of reference to categorise your editing work. Mossop's categorisation is logical and easy to understand, and his range of editing tasks is adequate for a comprehensive editing job. Mossop's four editing levels are:

1. Content editing;
2. Structural editing;
3. Copy editing;
4. Stylistic editing.

Each of these four editing levels has a different range of sub-tasks which you will have to attend to. You will find a comprehensive sequence of all the sub-tasks below in 3.5.3.4 and 3.5.3.5, where this model will guide you through the procedure of editing your text. A more concise checklist version of the editing model is attached as Addendum J for printout.⁵¹

- On the level of copy editing, checking referencing and for plagiarism should be included into your tasks portfolio as vital aspects of research writing.⁵²
- Take seriously Mossop's recommendation not to attempt all four levels of editing simultaneously, in particular if you are not very experienced with editing.
- Use Mossop's role models of gatekeeper and language therapist for a division of the editing job into two phases according to the different nature of the work of gatekeeping and language therapy, as suggested in 3.5.3.3. This division is particularly helpful for thesis editing.⁵³ The gatekeeping phase includes the levels of content editing, structural editing and copy editing, while the language therapy phase consists of stylistic editing and idiomatic usage. If either of these two phases is too

⁵¹ See also 3.5.5.

⁵² See Van Aswegen (2007: 1139).

⁵³ See argument in 2.4; see also 3.4.5.

comprehensive, each of Mossop's four levels can also be attended to separately, if time allows. It is nevertheless recommendable to complete the editing work on the levels included in the gatekeeping phase before attending to language therapy.⁵⁴

3.5.3 The procedure

3.5.3.1 *Assessing the assignment*

- Obtain the draft from the student and scan through it. It is recommendable to obtain the whole final version instead of only a sample of a few pages for two reasons. First, a sample may be deceptive. Perhaps not all passages are of equal quality. While the sample pages may demand moderate editing effort, other passages may turn out to require much more intense intervention than predicted by the sample, and you might fail to finish your work in the time available. Second, the sample might not give you a sufficient overview of the structural design and the structural quality of the paper. A negative surprise in the form of a structural disaster will delay your work, since fixing the structure of a large document (whether done by yourself or by the student) can be very time consuming.
- On your first read through, list the most prominent problems in the text. This may help you to get an overview of the work ahead of you and to compile a quotation and a written agreement (see 3.5.3.2).
- Assess the dimension of the necessary editorial intervention on each of the four editing levels and decide whether you can accept the commission according to your capacities.
- The level of editorial intervention can vary extensively according to the skills level of each individual student. Based on the quality of the text and the pattern of problems in the text, you can try to assess the extent to which communication with the student is indicated. If you know the student, you might also have a feeling for his capability to understand and respond to queries and criticism. If you do not know the student, you might be able to get at least a first impression from your communication with the student prior to the actual editing work. The result of your assessment will have an impact on the extent to which you correct errors directly and raise queries with the student. The way in which you communicate with the student will also depend on the pattern of problems in the text. While over-communication may antagonise your

⁵⁴ See argument in 3.4.5.

client, under-communication may have negative effects on the result of your cooperation. Even though it is advisable to always ponder critically whether a problem needs to be discussed with your client, or whether you can solve it yourself without doing the decisive work for the student, you should generally communicate sufficiently with your client to achieve the best possible editing result. The heavier the problem load in the text, the more intense may have to be your interaction with the student, depending on the nature of problems you encounter in the text.. The medium of communication should be selected according to what is deemed appropriate and most successful from the choice of available media. If the student has difficulties with working productively with queries in the form of commentary in his text, you might have to employ alternative ways of communicating problems. While in some cases e-mail may be enough, a more complex problem may require a phone call or even a personal meeting.

3.5.3.2 Accepting and preparing the assignment

- Send a quotation to the student which entails providing an indication of the necessary degree of intervention on each of Mossop's four levels, with an indication of the range of editing tasks included in the service, editing tasks explicitly not included, an indication of the modes of intervention (in-text corrections, comments, other forms of query etc.) and an approximate indication of the fees payable by the student.
- Inform the student about any missing sections and give the student a final opportunity to include missing parts into the draft before the editing starts.
- Once the student has accepted your quotation and you have obtained the whole final draft, set up a written agreement,⁵⁵ (the information already given in the quotation may serve you as a basis) which includes the same elements as the quotation and any adaptations to them, should adaptations have been made. Include a paragraph confirming that the draft handed in with the signed agreement will be treated as the final draft. Also discuss with the student the form in which the edited work will be returned to the student (paper, or electronic document) and include the decision in the agreement.
- Obtain a signature on the agreement from the student and, if possible, from the supervisor. Sign yourself and send a copy of the agreement to the student.

⁵⁵ As suggested by EAC (2012).

- The list of major problems may be completed as you work through the text to keep an overview of aspects that need to be attended to. The list of problems can then also be used as a basis for a working document⁵⁶ for the student, in which you compile all major changes that have been made during editing (if any) and which lists major changes that the student needs to attend to. This serves as an overview for you of your own work as well as a point of reference for the student with regard to the work that is still required from the student.
- If there is a lot to remember and you feel that you might lose track of these things in the course of your work – such as particular spellings, abbreviations or changes to be made at a later stage – compile a memory sheet for yourself, which will serve you as a memory aid for consistent, high-quality editing.

3.5.3.3 *Two editing phases: gatekeeping and language therapy*

- Divide the editing job into a gatekeeping phase and a language therapy phase.
- Adapt the degree of attention to each phase and each of the four levels to the necessary degree of intervention.
- On levels on which direct change may be regarded as too interventionist for thesis editing (especially on the levels of structure and content), make use of query as much as possible in order to avoid unethical editing. Where appropriate, you may use the tracking function. Changes should never be made without indicating them.
- Start with the gatekeeping phase and work from the macro level to the micro level, i.e. start on the levels of content and structure before attending to copy editing.
- Mossop's sub-categories of each editing level⁵⁷ may be used as a guide in the order suggested below. The major part of the suggested order has been adopted from Mossop (2007); however, small adaptations have been made regarding the sequence of editing tasks where an adaptation offers a practical advantage for the specific case of thesis editing. Apart from that, referencing and plagiarism have been included in Mossop's general range of editing tasks, as these two elements play a vital role,

⁵⁶ As suggested by Van Aswegen (2007: 1147).

⁵⁷ The model is presented here as concisely as possible. Therefore, only a list of Mossop's four editing levels with the respective sub-tasks is given here in bullet point form. 2.2.1 can be used as a reference for detailed information on the nature of editing work envisaged for each of the listed sub-tasks, as well as for a reflection on the relevance of the respective sub-tasks for thesis editing. Mossop (2007: 37-86) can also be consulted directly for a description of the nature of the different editing tasks. However, Mossop's descriptions are general and do not consider the specific situation of thesis editing.

specifically for the thesis editing type of assignment (Van Aswegen 2007: 1139 and 1147; EAC 2012: 8).

3.5.3.4 Phase I: gatekeeping

3.5.3.4.1 Content editing

Content editing involves the following sub-categories, which may need attention in the gatekeeping phase of thesis editing process:

- Factual errors;
 - Conceptual errors;
 - Obscure passages;
- Logical errors;
- Mathematical errors.

(Mossop 2007: 80-84)

On this level you may check and correct the text “for its ideas” (Mossop 2007: 80). However, in order to avoid violation of the prerequisite of originality of the student’s work, it is highly advisable to query problems with the student and to ask the student to review problematic passages instead of adding, removing or changing content directly as part of the editorial intervention.

3.5.3.4.2 Structural editing

Structural editing involves the following sub-categories, which may need attention in the gatekeeping phase of the thesis editing process:

Problems with the heading system:

- Misconceived headings;
- Confusing heading system;
- Lack of subheadings;
- Headings that do not match the table of contents.

(Mossop 2007: 77-78)

Problems typical for prose texts:

- Missing markers;
- Unfulfilled announcements;
- Empty backward references;
- False backward or forward references;
- Unexplained acronyms;
- References to graphics and tables;
- Poor paragraphing.

(Mossop 2007: 74-76)

On the level of structural editing, the editor is supposed to “help the reader follow the conceptual structure” of the text “by making adjustments in the physical structure” (Mossop 2007: 74). With regard to originality and the purpose of thesis writing, it is highly advisable to leave the actual practical work of adjusting the physical structure to the student. Just as on the level of content editing, the editor should adopt an editing mode of query and point out problems and areas of improvement to be attended to by the student instead of completing the decisive work on the student’s behalf.

3.5.3.4.3 Copy editing

Copy editing involves the following sub-categories, which may need attention in the gatekeeping phase of the thesis editing process:

- House style, i.e. conformity with the university’s preferred style manual;
- Spelling and typographical errors;
- Syntax;
- Punctuation;
- Usage;
- Consistency.

(Mossop 2007: 37-54 and 87-91)

Two additional sub-categories are incorporated into Mossop’s copy editing category as important aspects of thesis editing (see argument in 2.5.1):

- Referencing,⁵⁸
- Plagiarism.⁵⁹

To a great extent copy editing is concerned with micro-level elements of the text. Even though on the whole, it is advisable to let the student do the decisive work himself, the use of the tracking function on the level of copy editing may indeed be justified, depending on the nature and the severity of a given problem in the text. Careless mistakes such as spelling errors, for instance, are made by everyone, and a spelling error does not say much about a student's academic competence. Therefore, direct changes by the editor with the tracking function may be justified for such minor problems. However, if a major problem is found on the level of copy editing, such as perhaps serious errors in basic grammar that are made consistently throughout the thesis, it might be indicated for the editor to draw the student's attention to the problem and let the student correct his own mistake as a step of his learning process. The same accounts for problems with referencing or plagiarism. Both these elements play a decisive role in a thesis in different ways, and the quality of the student's referencing as well as the occurrence of plagiarism have an impact on the evaluation of the student's academic skills as part of the purpose of thesis writing. Therefore, severe problems with referencing or instances of plagiarism might better be queried than amended by the thesis editor. On the level of copy editing, it is the thesis editor's responsibility to decide on the appropriate mode of intervention for each individual copy editing problem.

3.5.3.5 Phase II: language therapy

3.5.3.5.1 Stylistic editing

Once the gatekeeping phase has been completed and the micro and macro structure of the text has been brought into order, the language therapy phase may follow with attention to the following sub-categories:

Tailoring the language to

- the reader's motivation to read the text;
- the reader's knowledgeability of the subject;
- the reader's education level;
- time and place of reading;

⁵⁸ Stipulated as an extremely vital element of thesis editing by Van Aswegen (2007: 1139).

⁵⁹ Stipulated as pertaining to thesis editing by EAC (2012: 8) and by Van Aswegen (2007: 1147).

- the writer-reader relationship;
- the reader's use of the text.

(Mossop 2007: 60-64)

Smoothing

- Establish clear relationships between all aspects in a sentence;
- Clarify the position and relationship of subject and verb;
- Ensure proper linking of sentences in terms of information flow and focus;
- Ensure that connector words are in the right position and not ambiguous;
- See that parallel ideas are expressed in parallel forms;
- Establish clear and unambiguous antecedents and references to the pronouns in a sentence;
- Make sure that ambiguous structures become clear in context;
- Check, and, where needed, amend unidiomatic language usage.⁶⁰

(Mossop 2007: 64-69)

Idiom

- Render unidiomatic passages more idiomatic;
- Watch out for sentences where the writer has mixed up two idiomatic expressions;
- If the writer is a non-native speaker and you are familiar with his native language, you may be able to figure out passages where the writer translated an idiomatic expression from his native language literally into the language in which he wrote the text at hand. Those passages may sound odd in the editing language. Try to rephrase the author's words with a more idiomatic and natural sounding expression.
- Be careful not to superimpose your personal preference of idiom upon the author's text if there is a choice of more than one idiomatic way of expressing something. Only interfere if it is necessary, but do not change a correct idiom simply because you prefer another way of putting it.

(Mossop 2007: 40-44)

For the level of stylistic editing, it is particularly difficult to determine the “appropriate” mode of intervention. A combination of comments with queries and tracked in-text changes may be

⁶⁰ Mossop originally categorises idiom as part of copy editing. However, since idiom concerns language use, it is practicable for thesis editing to attend to idiomatic matters in the course of the language therapy phase.

needed here. While the editor may find that a formulation is unclear or the style of a passage is too colloquial and the student might be able to amend the sentence through revision, a comment explaining the problem may be a favourable solution. However, in other cases, a direct change by the editor may be in order because the problem is of minor importance, or direct intervention may be needed because the student would not be able to solve the problem.⁶¹ A second-language writer, for instance, may have difficulties coming up with the correct idiomatic phrase if a comment indicates that a certain passage is unidiomatic. In such a case it may be up to the editor to replace the original passage with a more idiomatic version. It is a matter of individual decision by the responsible, process-focused editor for each instance of stylistic editing which mode of intervention is appropriate.

3.5.3.6 Finalise and dispatch the editing assignment

- After all levels of editing have been attended to, you may go through your work again if time allows and if you feel that you might raise the quality of your work by proofreading it and by running a last check for missed errors. A printout of the edited thesis might help you to spot errors that you might have missed in the electronic copy.
- Store a copy of your edited work in a safe place in case questions arise from the supervisor, the university, the examiner or any other party at a later stage.
- Send the edited draft together with your invoice back to the student.

⁶¹ Such a level of intervention, however, has ethical implications which are considered and discussed in 2.5.

3.5.4 Visual representation of the model

The following chart represents the editing model visually for a compact overview of all its major elements which are described in 3.5.3 to 3.5.3.6:

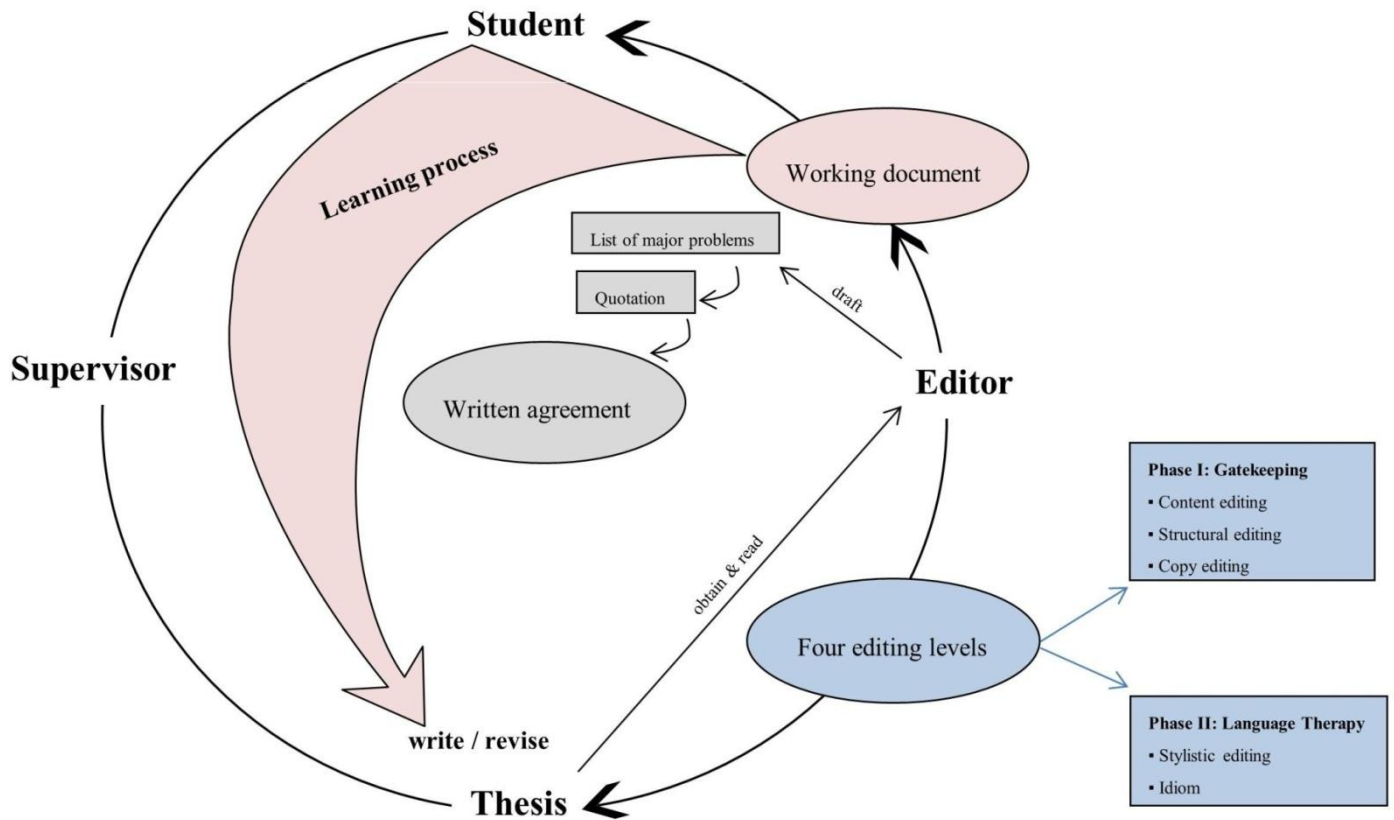


Figure 3.1: Thesis editing model

3.5.5 Printout version of the editing model

A printout version of the thesis editing model is attached to this thesis in Addendum J. The printout version includes three elements. First, all major steps of the editorial process presented in 3.5 are attached in the form of a concise checklist for the editor. Second, the attachment includes a checklist version of Mossop’s four editing levels with their respective sub-tasks and a short description of the mode of intervention indicated on each level. Third, the printout version includes the chart of the editing model presented in 3.5.4.

The printout version is intended to serve the thesis editor as a concise guide through the editorial process without reproducing the more elaborate argument in 3.5. Once the elaborate

version has been read and its argument internalised by the thesis editor, a concise checklist version will be more convenient to use as a guide in the editorial process.

3.6 Summary – practicality through flexibility

The sequence given in 3.5.3 for the procedure through the different stages and levels of editing is functional for a thesis editing assignment; however, it is not absolute. The order in which sub-categories and main categories are attended to may be changed and combined according to the requirements of each particular assignment and according to which order the editor feels is appropriate. Mossop's flexible and independent categories allow an equally flexible and individual arrangement of their order for each assignment. Nevertheless, it remains a general recommendation to repair the macro structure of the text before the micro structure is attended to. For the editing of research work, it is in general practical to adapt a process-oriented approach and to divide the job into a gatekeeping and a language therapy phase.

Even though this model combines insights from both theory and practice, it is still largely theoretical in nature. It provides guidance through a practical assignment, however, with the sort of generalised perspective that usually characterises a theory. There is no guarantee that the model will be one hundred per cent replicable in any given practical thesis editing assignment for the simple reason that practical situations, as opposed to theoretical situations, always take place in a particular context. It has been found on the basis of a literature review and a practical editing assignment that the suggested model provides a practical solution for thesis editing. However, it cannot be excluded at this point that there may be situations where the specific context constrains the practicality of the model significantly, or even makes it impossible to utilise the model successfully. The probably safest and perhaps also the only way of testing the suggested model with regard to its practicality is the application of the model in other practical assignments. Comprehensive testing of the suggested model would exceed the scope of this thesis. The suggested model must be seen as a prototype until further studies deliver comprehensive insights with regard to the practicality of the suggested thesis editing model. As one initial step, however, the model shall be applied to a sample of research writing in the following chapter to test its practicality in a different assignment.

Chapter 4: Empirical study – application of the editing model to a sample thesis

This chapter reflects on the application of the model suggested in Chapter 3 to another sample of postgraduate research writing. The objective of such an application is to test the model with regard to its practicality. To this end, the procedure suggested in 3.5 will be followed, with the editorial intervention undertaken according to the sequence of steps suggested in the model. A reflection on the editorial intervention will determine the level of compliance with or deviation from the model at each major step. In the case of non-compliance, reasons for the departure will be analysed. The findings from this analysis will lead to conclusions regarding the practicality of the model.

4.1 Introduction

The text used for the testing of the model is a thesis (Text B), which was drafted as a joint project by two students in 2013 in English and submitted at University B. The writers of the thesis are Ukrainian (Student B) and German (Student C) native speakers.

Text B presents another piece of second-language postgraduate writing and is attached to this study in two different versions. The unedited original draft can be found in Addendum D. The full edited version containing the editorial changes in tracked format as well as all comments made by the editor is attached in Addendum E. All examples cited in this study from Text B in order to demonstrate the editorial intervention are taken from the version attached in Addendum E. The page numbers as well as the numbers of editorial comments cited in this chapter therefore also refer to the edited version of the thesis attached in Addendum E.

4.2 Procedure of application of the model to the sample text

4.2.1 Overall approach

The overall approach for the editing of the thesis followed what is suggested in 3.5.1. A process-oriented approach by which the editor assumes partial responsibility for the student's learning process was combined with Mossop's four-level classification of editing tasks. Furthermore, as proposed in 3.5.2 and 3.5.3.3, the editing process was divided according to the roles of gatekeeper and language therapist. Hence, the editing tasks pertaining to these two role models were to be carried out in two separate, consecutive phases.

The fact that the sample thesis was edited in a real-life situation, however, had implications for a one-to-one application of the suggested model with regard to the division of the editing assignment into two subsequent phases. The thesis was handed in for editing only eight days prior to the deadline for submission of the final printed version for examination. The students claimed to need at least two to three days to work through the editorial corrections and suggestions and to complete the final formatting. Given the fact that the thesis draft comprised about 80 pages (excluding appendices), a time frame of three days for a complete revision of the edited document by the students was rather short. Nevertheless, since the editing itself had to be completed as well, no more than two days were available for revision by the students in the end. Five days in total were left for the editorial work on the document, and during the first few hours of editing it became clear that two completely separate and subsequent editing phases was unrealistic because of the limited time frame, and that it might even become difficult to complete one run-through in the available time.

Therefore an adaptation of the model had to be made with regard to the division of the job into two entirely separate phases. The separation of the gatekeeping and language therapy tasks was still retained; in order to save time, however, this division was not put into practice in two completely separate phases.

It may be argued at this point that, in order to test the editing model thoroughly, a different thesis or dissertation should have been chosen which would not implicate a constraint with regard to time. This thesis was nevertheless used as a sample for two reasons. First, the thesis was the only sample which could be obtained at the time as a real-life assignment; it was the only thesis found which was just in the final draft stage at the point where a sample was needed in this study to test the editing model. Other theses would have been available at a later stage, however, with a waiting period of three to five months – a time span which would have made it practically impossible to meet the deadline for examination targeted in the research proposal to this study.

Second, the intention was not to test the model in a simulated assignment where possible constraints, which might arise in the context of a particular assignment, may be avoided. The intention was to test the practicality of the editing model in a real situation, not least in order to investigate whether the model is capable to accommodate any particular implications of a specific assignment.

Therefore, despite the “unideal” circumstance that the time frame for the completion of the testing assignment was constrained, the thesis was used as a sample presenting a real-life assignment.

After the document had been skimmed for serious structural or substantial problems, the editing work was carried out paragraph by paragraph, whereby each paragraph was checked twice, first for problems occurring in the gatekeeping range, and subsequently for issues pertaining to language therapy. In that way, the gatekeeping still enjoyed priority as proposed in the model as adequate for thesis editing; gatekeeping tasks were completed first, and language therapy followed.

Because of the limited time frame, the objective of language therapy in this particular assignment had to be restricted to removing those linguistic and idiomatic shortcomings which presented an acute threat to the reading flow and thus to the reader’s understanding of the argument. Fine-tuning of the language in the sense of refining slightly ineloquent but understandable passages had to be deferred in the unlikely event that there was extra time left at the end for a second run-through. In other words, the language therapy phase was largely compelled to adopt Mackenzie’s principle of leaving what is “bearable” (Mackenzie 2004: 157).⁶²

The fact that the model could not be applied to the new sample text step by step with regard to the division of the editorial work into two separate phases and the inadequate response of the model to time pressure implies a possible shortcoming of the model.⁶³

4.2.2 Assessing the assignment

The thesis draft was obtained from the students together with the University Style Sheet (2013) for thesis writing, which their university had provided to them. The thesis was first read in its entirety in order to get an idea of the subject, the structure and the quality of the discourse and to establish the most prominent problems in the text. At first glance it became clear that the document exhibited deficits on all four editing levels. However, the problems found on the levels of content and structure were not of such severity that drastic changes were necessary on these two levels. The work was complete in the sense that all parts commonly required in a thesis were present, and the overall sequence of the different sections was in accordance with the requirements of a thesis in general as well as with the

⁶² See also 2.3.4.3.

⁶³ See 4.4.4 for further discussion of potential shortcomings.

requirements for thesis writing stipulated in the University Style Sheet (2013) in particular. A list was compiled⁶⁴ indicating the major problems on each level in order to have a point of reference for estimating the necessary dimension of editorial intervention.

The core of the major problems was situated at the levels of copy editing and stylistic editing, and it was to be expected that the focus of the editorial intervention would lie on the micro level of the text. Even though it was clear that the project at hand meant work under severe time pressure, the assignment was accepted.

As suggested in 3.5.1 my general approach to the editing assignment was intended to focus on the learning process of the students. Even though corrections on the textual product were part of my assignment, the learning process of the students had priority, and where applicable, queries would thus be used to indicate problems to the students and to let them work on the improvement of their own document.

Based on the quality of the textual product and the problems identified on first reading, I tried to assess the extent to which communication with the students was indicated. The fact that the thesis appeared rather well written without major structural and substantial shortcomings, but that micro-level problems in the text predominated, suggested a well-balanced mixture of direct intervention through changes in the text and communication in the form of commentary and queries. My impression was that the students had understood the purpose of thesis writing and the requirements of such a document. Their major problem seemed to be related to writing in English, which was apparent in an uncertainty about grammar, sentence structure and punctuation, on the one hand, and in a certain limitation in expression with regard to word choice, idiom and the degree of formality required in thesis writing, on the other.

Therefore, queries with regard to micro-level concerns were considered appropriate in the case of recurrent problems, in particular as far as issues of consistency were concerned. A learning effect for the students could be expected by giving the students the chance to correct their own recurrent mistakes. However, the potential of learning effects through query in copy editing and stylistic matters is limited; a feeling for a language and its grammar and subtleties will hardly develop overnight, and if the authors of the thesis are not familiar with grammatical and linguistic jargon, a comment criticising the faulty placement of an adverb might have little or no effect at all; the authors might not be able to make use of the term “adverb” as such, nor of the grammatical function of an adverb in a sentence, and might thus

⁶⁴ See Addendum F.

not be able to correct the mistake. The same holds true for certain stylistic problems; a comment pointing out unsuitable or overly colloquial style might not have a learning effect at all, if the writers are not fully acquainted with the stylistic potential of their second or third language. Recurrent errors, however, can be explained to the students and perhaps corrected once or twice in order to show them where the mistake is and how it can be corrected, and the students can then be asked to correct the remaining instances of such a recurrent mistake. The tight time frame within which the thesis was edited, however, additionally reduced the potential of learning effects for the simple reason that the time which the students had for a revision of their document was limited as well. Against this background, the approach to this particular editing assignment would have to combine queries wherever a learning effect was indeed realistic, but direct amendment of the text wherever a query would not be productive in terms of the time problem and the students' learning process.

From the pattern of problems found in the thesis draft, the overall mode of editorial intervention was planned. A process-oriented approach with queries, in particular on the level of structure and with regard to referencing, had to be combined with a slightly more interventionist and rather product-oriented approach with direct correction of problems on the level of stylistic editing and the copy editing sub-levels of idiom, punctuation and grammar. As far as content was concerned, my intervention as a non-expert in Finance would have to remain restricted to querying incomplete sections or missing substance.

The mode of communication would be a combination of query in the form of comments in the margin of the thesis, comments in the working document and e-mail for more complex problems.

4.2.3 Accepting and preparing the assignment

The editing model presented in 3.5 suggests that a quotation and a written agreement be compiled to be signed by the student, the editor and if possible by the supervisor. These two documents were compiled⁶⁵ and sent to the students, even though this assignment was not a classic commission in the sense of a professional editor providing a service to a paying customer. The editing service was provided for free as part of this thesis research project; therefore no balance of interests in the classic sense had to be guaranteed. The agreement was nevertheless compiled, and in retrospect the effort proved to be beneficial in that it served the purpose of transparency for all stakeholders. I was informed by the students that their

⁶⁵ See Addenda G and H.

university placed restrictions on changes to theses at this late stage; every major change of structure and content had to be reported. Against this background, a written agreement in which the mode and degree of intervention was specified for each of the four editing levels proved to be a convenient way of limiting the editorial intervention to an acceptable scope in a transparent way. The supervisor's signature⁶⁶ of the agreement provided the necessary assurance that the editing project was accepted from the university's side. Written permission to include the thesis as a sample in this study was obtained from the students⁶⁷.

As suggested in 3.5.3.2, the list indicating major problems⁶⁸ compiled during a first assessment of the text was transformed into a separate working document⁶⁹ for the students on which major editorial changes were registered as well as problems which were still to be attended to by the authors. Since the bibliography was automatically generated in the MS Word document and no comments could be inserted, a comprehensive list of queries concerning deficiencies in the bibliography was included in the working document.

As a last point, a memory sheet was compiled⁷⁰ for the editing process, consisting simply of key words to remind myself of consistency issues that needed to be kept in mind, or of problems that needed to be addressed later in the editing process or communicated to the student.

4.2.4 Two editing phases: gatekeeping and language therapy

As suggested in 3.5.2, Mossop's four editing levels were used as a basis for the practical work, and the editing job was divided up into a gatekeeping and a language therapy phase as suggested in 3.5.3.3, but with the time pressure-related adaptation described in 4.2.1. The degree of intervention was adapted to the pattern and severity of problems found in the text. With regard to the mode of intervention, query through comments was predominantly employed on the levels of structure and content in order to avoid unethical intervention, while the editing on the levels of copy and style consisted of a combination of comments and direct changes in the text with the tracking function of MS Word.

As suggested in 3.5.3.3, I started my editing work with the gatekeeping phase, working from the macro level to the micro level. The overall structure and substantial makeup of the

⁶⁶ Removed from the written agreement in Addendum H for reasons of anonymity.

⁶⁷ The written permission is not included in the Addenda for reasons of anonymity.

⁶⁸ See Addendum F.

⁶⁹ See 4.3.1.

⁷⁰ See Addendum I.

document was considered holistically before smaller structural problems and substantial matters were attended to in each paragraph, combined with the necessary intervention on the level of copy editing. After the gatekeeping work had been completed in a paragraph, a language therapy phase followed for the same paragraph to remove stylistic and idiomatic obstacles from the text for a better reading flow and to enhance the language, as far as the tight time frame allowed.

The following sections will describe major problems on the three editing levels of the gatekeeping phase, and a selection of examples is used to demonstrate the editorial intervention. The same will be done subsequently to describe the editorial intervention during the language therapy phase. The description and the examples are presented in the same order in which the sub-levels of each editing level are ordered in the model in 3.5.3.4 and 3.5.3.5; the respective sub-levels will be highlighted through bold type for better orientation. Not all sub-levels required the same degree of editorial intervention in the sample thesis, since the text did not exhibit errors on all sub-levels. Whenever no noteworthy editorial intervention was necessary on a sub-level listed in the model, that sub-level will be skipped in the following description of the editorial intervention.

4.2.4.1 Phase I: gatekeeping

4.2.4.1.1 Content editing

The elimination of *factual errors* in this assignment was largely restricted to identifying and querying the meaning of obscure passages. Factual errors both in the sense of wrong information and the absence of important information could not be addressed for the simple reason that I am not an expert in Finance – in Mossop’s terms an inconvenient precondition for the editing of such a highly subject-specific text (Mossop 2007: 81). However, as established in 2.5.1, the correctness of facts in a thesis is commonly seen as part of the student’s and the supervisor’s responsibilities. In this light, it might even be an advantage if the editor is not an expert in the subject of the thesis, since he will be less tempted to make major substantial changes on his own account. My non-expert status in the field of Finance was noted in the written agreement⁷¹ to inform the students and their supervisor of my limited capacities with regard to content editing.

⁷¹ See Addendum H.

As far as I could tell without subject-specific knowledge, the content of the thesis seemed in order in so far as all sections generally required in a thesis (such as a table of contents, a summary, the main chapters and a list of references) could be found in the usual order.

Apart from that, however, it was often difficult without subject-specific knowledge to determine whether a passage of the sample thesis was indeed written in an obscure way or whether a passage was difficult to understand only for a layperson because of the complexity of the topic. Nevertheless, I opted for the lesser evil and to rather query passages which appeared obscure to me rather than discounting them as simply too subject-specific for a layperson's understanding. I preferred to run the risk of "annoying" the authors by asking too many question and with creating unnecessary work for them rather than running the risk of failing to point out a potential problem which might result in a loss of marks.

The following sentence from the sample thesis is an example of an obscure passage where the reader might have difficulties in inferring the intended meaning.

Epistemology dictates acceptable knowledge of the study, describes how to gain it and how it will be interpreted (Text B: 11; my comment AB85, Addendum E).

Comment [AB1]: Unclear. What do you mean? Does epistemology dictate which kind or form of knowledge is important for a particular study? Or which sources of knowledge are accepted? Please clarify.

It is not clear in the sentence what is meant by "acceptable" in this particular context. The adjective "acceptable", however, is the main carrier of meaning in this sentence since it characterises the associated noun more particularly. Without any information on the modality of the adjective, the meaning of the sentence becomes arbitrary and the reader will not be able to make sense of the information. The problem was pointed out to the students in a comment in the margin. Alternatively, I could have obtained the sources from which the students had taken their information about epistemology and could have tried to work out how "acceptable" was to be understood in order to correct the problem. However, as pointed out in 2.5.1, the research and correction of content-related problems lies beyond the thesis editor's responsibilities. Furthermore, it might be seen as too interventionist of the editor to change the content autonomously. Therefore, the problem was queried and passed on to the student for further attendance.

Another example of an obscure passage is particularly remarkable, since it is merely a proposition which is responsible for the imprecision of meaning in the following sentence.

With 22,1% growth of assets over the past 5 years, the European market by now accounts for 19% of the global ETF market, while **in** the same time we observe a decline of cash flows to Mutual Index Funds (Text B: i; my comment AB2, Addendum E).

Comment [AB2]: It is not fully clear (at least to a layperson) what you mean here. Do you mean: now that the European market accounts for 19%, the cash flow is declining as well? Then it is supposed to be “at the same time”.

If you mean that over the past five years, a decline in cash flow occurred while assets grew, the preposition “in” is in principle correct. However, in order to avoid obscuring of the meaning of your sentence, you might just use an alternative and less ambiguous formulation such as “while a decline of cash flows to Mutual Index Funds could be observed for the same five-year period”.

As explained in the comment in the margin, the preposition “in” obscures the time relation between the growth of assets and the decline of cash flows. Furthermore, it is not entirely clear whether “in the same time” is meant to refer to the point in time in which the students have made the stated observation or to the timely relation between growth of assets and decline of cash flow. It is possible that a subject specialist would be able to infer the right meaning of “in” through application of specialist knowledge – say, for instance, if it was clear to the expert that a decline in cash flow over a five-year period is technically impossible. It is also possible that the time relation between these two circumstances is of minor importance but that the important message for the reader lies in two facts, namely a growth of assets and a decline in cash flow. However, since it does not lie within my editorial competence to clarify the content, nor to decide about the importance of this time relation, nor to judge an expert’s ability to infer the right meaning, the query was chosen as the appropriate means of intervention.

The fact that a preposition is the trigger of the problem shows that the borders between the different editing levels are at times diffuse. It might be argued that the problem in the sample sentence results from an incorrect use of a preposition – and since prepositions are grammatical elements and grammar has been categorised as part of copy editing, editorial intervention with regard to the problem at hand pertains to copy editing rather than content editing. However, the problem in this particular sentence is not merely about the right or wrong use of a preposition, because several prepositions could theoretically be right in this construction. The “correct” preposition in this sentence depends on the intended specialist meaning rather than on grammatical rules. And meaning is, in Mossop’s terms, a key factor of content editing (2007: 84).

It might also be argued that the sentence, considered as a whole, is an ambiguous structure, since an inappropriate use of a preposition introduces ambiguity into the sentence. In this case, the problem could be categorised as pertaining to Mossop’s level of stylistic editing, since in terms of Mossop’s definition, the clarification of ambiguous structures is part of stylistic editing (2007: 69). However, the underlying problem is not simply a problem of

incorrect grammar nor a problem of inappropriate word choice which can be identified and amended through application of grammatical rules or stylistic knowledge. I understand the problem underlying the obscurity of the sentence as a problem of meaning and thus as a problem of content editing, since the intended meaning in this particular sentence cannot be derived by substituting one preposition with another.

With regard to *logical errors*, minor problems could be found, such as the tautology in the following example sentence.

This approach justifies the need of a literature review, which is essential in any research (Text B: 15; my comment AB105, Addendum E).

Comment [AB3]: Tautology? If a literature review is essential in any research, there is no need to justify your literature review.

Even though technically it would have been possible for me as editor to directly correct the problem, I decided that it would be worthwhile to point it out in a comment and let the students make their own correction as part of their learning process.

The detection of *mathematical errors* was also highly restricted to the indication of elements which seemed awkward to the eye of a layperson. Even though mathematical correctness of a thesis in Finance can be regarded as a crucial feature, re-calculation of the calculations and checking mathematical elements for correctness would have exceeded my editorial capacities – not least because any practice of my humble mathematical skills would present an acute danger of error introduction rather than a secure source of error removal. Therefore, a note was included in the written agreement to inform the students and their supervisor about the exclusion of the correction of mathematical elements from the editorial work. Editing of mathematical errors was hence restricted to querying superficial issues such as the absence of a digit in the following example.

The outcome is that the average slope for ETF is 0,88 and 0,8 for MIF; t stat is ,02, the difference is not significant at 5% (Text B: 68; my comment AB332, Addendum E).

Comment [AB4]: Is there a digit missing before the "02", or is the comma just one too many?

A last problem which occurred on the level of content was incomplete information. Mossop's level of content editing does not specifically include such a sub-section; however, among Mossop's four editing levels the absence of information is best categorised as pertaining to content editing matters. Missing information can be seen as a factual error in the sense of factual incompleteness.

3.1.1. Definition and Use of an Index

Financial indices are frequently used to capture information about regional, industrial or sectional markets of economic interest and their development. Thus, the purpose of an index might be, for instance, to represent a geographical or political region (e.g. Asia, South America, Europe, continental Europe or the EU), a country's economic development (e.g. France, Germany, Spain), an industry (health care, entertainment, food) or a sector (e.g. emerging markets). Further, indices can be specialized in specific themes or strategies such as sustainability, dividends, sports etc. (Text B: 21; my comment AB136, Addendum E).

Comment [AB5]: Your heading announces two elements, namely first a definition and second the use of an index. Your section elaborates on the use of indices, but you have not really given a definition of what an index is. Perhaps just add a paragraph at the beginning of your section in which you define an index.

In this example paragraph, the heading announces a discussion about, first, the definition and, second, the use of an index. The paragraph following the heading, however, gives information on the use of indices, and the subsequent paragraphs of the section carry on naming different indices, elaborating on the accuracy of indices and warning investors of certain problems that might occur with indices. The section terminates without the definition of an index having been provided as promised. A comment was inserted for the students, pointing out the problem and recommending them to insert a definition of an index in order to deliver the information announced in the heading.

This last problem overlaps with Mossop's structural sub-category of unfulfilled announcements. The same example will therefore be used again as an example of an unfulfilled announcement in 4.2.4.1.2 and the overlap of these two sub-categories will be explained.

4.2.4.1.2 Structural editing

While the macro structure of the thesis draft was in order in terms of the overall organisation of the document, several smaller problems were identified on the structural level.

A number of problems were found which Mossop describes as typical structural problems in prose texts (2007: 75). *Missing markers* are one such problem, as apparent in the following example.

We don't have any third party participants and thus parts of ethics related to participants such as: contacting participants, privacy invasion, consent issues and

appropriate informing them are not related to our research. **Third**, we can justify that in our study, data gathering and analysis are performed objectively – accurately and fully (Text B: 18; my comment AB130, Addendum E).

Comment [AB6]: Where are “first” and “second”?

Since the paragraph preceding these two example sentences did also not contain any indication of a first and a second fact, it seemed that the students had forgotten to insert the necessary markers “first” and “second” to show a relation between three facts and to justify the use of “third”. It was not possible to determine from the context which other two facts were meant to be grouped under a cumulative idea, with the fact labelled as “third” in the example sentence; several relations under different aspects were possible. Therefore a comment was inserted to make the students aware of the two missing markers.

An *unfulfilled announcement* was found in a section heading in the thesis. However, this particular instance was not a classic example of an unfulfilled announcement as described by Mossop. The same paragraph is also presented in 4.2.4.1.1 as an example of incomplete information in the category of content editing.

3.1.1. **Definition** and Use of an Index

Financial indices are frequently used to capture information about regional, industrial or sectional markets of economic interest and their development. Thus, the purpose of an index might be, for instance, to represent a geographical or political region (e.g. Asia, South America, Europe, continental Europe or the EU), a country’s economic development (e.g. France, Germany, Spain), an industry (health care, entertainment, food) or a sector (e.g. emerging markets). Further, indices can be specialized in specific themes or strategies such as sustainability, dividends, sports etc. (Text B: 21; my comment AB136, Addendum E).

Comment [AB7]: Your heading announces two elements, namely first a definition and second the use of an index. Your section elaborates on the use of indices, but you have not really given a definition of what an index is. Perhaps just add a paragraph at the beginning of your section in which you define an index.

After Mossop’s definition, an unfulfilled announcement occurs when the writer announces two subjects,⁷² but discusses only one of these two, and the paragraph ends without the second subject having been addressed. A discussion of the second subject appears pages later in a different part of the document (Mossop 2007: 75).

⁷² For instance, a definition of an index as a first subject followed by the use of an index as a second subject, as announced in the heading of the example.

In the case of our example, the heading announces two subjects; however, only the use of an index is addressed in the subsequent paragraph. The definition, however, is not only absent where it is supposed to occur, but no definition of an index could be traced in any other place in the document. In this regard, we have a special case of overlap between unfulfilled announcement and incompleteness of content. In terms of Mossop's definition of an unfulfilled announcement, all information is present in the document, only not in the appropriate place. In our example, information is not only announced and the announcement not fulfilled at the expected place, but the announced information is missing altogether from the manuscript. Since the presence or absence of information is a matter of content editing and unfulfilled announcements fall within the ambit of structural editing, our example presents a special case of overlap of two editing levels.

The thesis also exhibited *unexplained acronyms*. In the following example the students had used an acronym without first having introduced the full term represented by the acronym to their reader beforehand. Only in the subsequent sentence is the full term given, followed by the acronym in brackets.

In addition, we will analyze variations of TE and its usefulness. We start with the calculation and analysis of Tracking Errors (TEs) to create the basis for a comparison that provides us with the necessary evidence to answer *hypothesis 3* (Text B: 65; my comment AB325, Addendum E).

Subject-specific terms and their respective acronyms are alternated in a haphazard way in the manuscript. Technically, I could have done the work for the students by introducing a system in which acronyms are introduced with the first use of their associated term and subsequently used after the respective term has been written out on its first appearance in each new section or paragraph. However, I decided to point out the problem to the students in a comment and to suggest my solution to the problem, but to let the students do the work as part of their process of learning to structure their own document.

Editorial intervention was also necessary with regard to *references to graphics and tables* as well as to figures and equations. Figures and tables are repeatedly referred to as to be found "above" or "below" as in the following sentence:

Comment [AB8]: This is a good way of introducing a short form of a term. However, the short form should occur the first time you refer to Tracking Error (I think the first time the term occurs is in your summary, and then again on page 3). Please never use the short form alone as you have done at the beginning of this section without having introduced the full term with the acronym following in brackets.

You may use the short form alone after you have introduced it together with the full term, but it is always a good idea to use the full term again once in a while just to remind your reader of which term you are talking about.

Perhaps you can also find a "regular" way of using full term and short form alternatively in order to give your reader some orientation. After having introduced your term and its short form for the first time in your thesis, you could, in each following section or longer paragraph, write out the full term at the beginning, and then use the short form afterwards. In the next section or paragraph you repeat the full term once and then use the short form, and so on. Such a strategy will give your reader a feeling of security and orientation.

Please treat all other short forms of terms used in your text (MIF, ETF etc.) in the same way: Where you introduce a term for the first time, write out the full term, followed by the short form in brackets.

The summary is provided below in the *Figure 8*

(Text B: 20; my comment AB134, Addendum E).

Even though the respective number of a figure or equation was always given as a reference in the manuscript, it was explained to the students in a comment that verbal indication of the place of a figure or table is a potential source of error. Mossop recommends using only numbers and abstaining from verbal indications of the location of graphical elements, since graphics and tables may shift to a different place in the document during changes of the format at a later stage (Mossop 2007: 76). Again, in order to achieve a learning effect, I did not make the necessary corrections but pointed out the problem to the students in a comment.

A few instances of *poor paragraphing* in the sense of poor visual structure of paragraphs occurred in the document. Punctuation and other copy editing problems aside, the following example paragraph contains a numeration of three components. The running-text style in which the numeration is written, however, creates difficulties in reading the paragraph; the enumeration is not visible at first glance and the reader has to make the unnecessary effort of entangling the three components from the text block.

Effectively, market indices are a compound factor of three variable components: 1. the quantity of Share (whether Free Float or Total issued). 2. the prices of the Equity Shares and 3. the constituent companies of the Market Index each influencing the determination of the state of capital market (and hence the marked index) in its own manner. (Ghorawat, 2013)

(Text B: 23-24; Addendum E).

The edited version therefore suggests a numeration of the three components in list form to facilitate the processing of the information for the reader:

Effectively, market indices are a compound factor of three variable components:

- 1) the quantity of share (whether Free Float or Total issued),
- 2) the prices of the Equity Shares and
- 3) the constituent companies of the Market Index.

Each of these components influences the determination of the state of the capital market (and hence the marked index) in its own manner (Ghorawat, 2013).

Text B: 23-24; my changes; my comment AB162).

Comment [AB9]: I strongly recommend you to not refer to a table or a figure as being situated “below” or “above” for the simple reason that something might change in the formatting of your document at a later stage and a table or figure might suddenly not be found above its description anymore, but have been shifted to a different place in your document below the description, or vice versa. To be on the safe side and to not produce unnecessary work for yourself and potential sources of error, I recommend you to only refer to tables, figures and equations with the respective number, i.e. “Table 4 presents...”. This is enough information for your reader, who can even go back to your list of figures and tables to find the relevant page number. If you make any change in this regard, please do so consistently throughout your paper for all tables, figures and equations.

Comment [AB10]: The change in layout is a suggestion to facilitate reading.

4.2.4.1.3 Copy editing

The copy editing part of the gatekeeping phase turned out to be relatively intensive and time consuming. While the thesis was in fairly decent shape on the macro level, a comparatively higher density of problems on the micro level required intensive intervention.

As far as *house style* is concerned, the editorial intervention concentrated on making the references in the thesis conform to the style guide which the students had been given by their university. Therefore, the editing on the sub-level of house style is undertaken together with referencing matters.

A number of *spelling errors* were found in the text. Spelling errors require a keen editorial eye; they are small, often involve only a single letter and are easily overlooked, especially if one only skims the text instead of reading it properly. Therefore, copy editing requires careful, thorough reading and pondering of each word. Where possible, spelling errors were corrected directly in the text and the change was tracked electronically for acceptance or rejection by the students. The following sentence exhibits a simple spelling error in the form of a forgotten plural “s”. The missing letter was inserted and the change tracked.

Mutual index funds usually adopt a passive management style, because managers of such funds only need to mimic the chosen index performance and not to outperform it (Text B: 7; my change, Addendum E).

Another form of a simple spelling error is present in the following example, in which an accidental “t” had been added in the wrong place:

This requirement ist true for our approach (Text B: 12; my change, Addendum E).

It is conceivable that this error was not even introduced by the writer of the passage but by the spellchecker of the word processing programme. If the passage was written by the German student, it is thinkable that he had forgotten to change the default language of the spellcheck programme from German to English. The addition of a “t” to the verb “is” would be a logical reaction from a German spellchecker since “is” does not exist as a verb in German; “ist” would be the German equivalent of the English verb “is”. The letter was deleted and the

change tracked. Furthermore, a comment was added to the working document (see 4.3.1; comment 1) to remind the students to change the language of their spellchecker to English.

Spelling errors are mostly not serious in the sense that they do not usually affect meaning fundamentally; in most cases the reader will notice the spelling problem and will still be able to figure out the right word by correcting the error mentally. Nevertheless, spelling errors may distract the reader from the content of the text and thus may effect that the reader fails to internalise important parts of the argument. Apart from that, as Mossop argues, even simple spelling errors create an unfavourable image of the writer with the effect that the reader of the text may take the writers for “sloppy thinkers” and eventually “lose confidence in the actual content of the work” (2007: 39). In the case of a thesis, such an image is most harmful for the final assessment. Therefore it is important that spelling errors are detected and corrected.

Spelling errors which create wrong words in a sentence are perhaps even worse, both for the image of the reader and for the reading process, since they may distort the meaning of the text (Mossop 2007: 39) and confuse the reader. The following two examples carry the same example of a spelling error, which changes the meaning of a word:

Even though ETFs are often linked to closed-end funds in that ETF shares can be purchased and sold on exchange markets, the ability to create or redeem ETFs in-kind silhouettes them from the [laetter](#) (Text B: 29; my change, Addendum E).

In the [laetter](#) case (and if our results are generalizable), we present a revised perspective for European Index trackers (Text B: 14; my change, Addendum E).

In both sentences, the author meant to write “the latter” but had accidentally retrieved a similar sounding word with a different meaning. Because of the recurrence of the error, it can be assumed that the author was perhaps not aware of the different spelling of these two words, but thought in effect that the word “letter” is the right word to use in the given context. The error was corrected in both sentences and the change tracked. In order to familiarise the students with the correct spelling of “the latter”, I purposely used the expression regularly in my comments in the margin where possible, as in the following example:

Tashakkori and Teddlie explain the existence of the **mixed method** as a result of the possibility that a single research project can contain two paradigms or two worldviews (Text B: 14-15; my comment AB100, Addendum E).

Comment [AB11]: Is that a subject-specific term or your formulation? In the latter case I would rather use "combined method" for a slightly more formal sound.

Typing errors also convey an unfavourable image of the writer and distort the reading flow. In the following sentence I suspected a typing error, but was not able to correct it and thus had to query the problem in a comment.

Next, there are many fund strategies indices, which are created by funds. Their strategy is usually to **bit** the given benchmark. (Text B: 25; my comment AB175, Addendum E).

Comment [AB12]: Do you mean "to bid on" or "to beat"?

The verb "to bit" seemed unknown. A dictionary search gave no hit for such a verb, and neither did an Internet search for particular use of this expression in the context of Finance. Therefore I had to assume that the writer had meant something else but had used the wrong spelling. A non-expert in Finance, I was not able to solve the problem with subject knowledge. I was also not able to determine from the context of the paragraph which expression was required instead. I suggested two verbs in a comment in the margin, either of which might fit in this context. It is possible that the writer meant "to bid on the benchmark" but made a spelling mistake and, as non-native writer, did not know that the preposition "on" was needed in this expression. Another possibility is that the writer meant to write "to beat the benchmark", but because of incorrect pronunciation derived the wrong spelling of the word "beat". I suggested these two possibilities in a comment and left the final decision to the students.

The thesis draft further exhibited two major types of *syntactic* weakness. The first type is concerned with the placement of adverbs, particularly in constructions with modal verb + adverb + verb as in the following two example sentences:

An index ~~also~~ could also be based on low -volatility (Text B: 25; my changes, Addendum E).

In addition, one could say that there will always be ~~always~~-a trade-off between minimization of return differences and cost minimization (Text B: 26; my change, Addendum E).

The wrong order of such constructions was corrected and the change tracked in the document for the students' consideration.

A similar problem with the placement of adverbs is present in the following example sentence, in which an adverbial construction has a connecting function between two ideas in different sentences:

Similarly to positivism, This epistemological stance ~~similarly to positivism~~ follows a scientific approach; however, it implies that a human mind cannot adequately influence reality (Text B: 11; my changes, Addendum E).

The phrase “similarly to positivism” connects with the two foregoing sentences in the thesis draft, in which positivism is described as a particular epistemological perspective. Such adverbial connector phrases are usually best placed at the beginning of a sentence to indicate to the reader right away that there is a relation between the idea of the present sentence and the idea from a preceding sentence. Therefore, the connector phrase was moved to the beginning of the example sentence and the change tracked.

The second type of syntactic weakness, which was found in several instances in the document, was the sometimes excessive length of sentences as in the following example.

TE_1 was suggested by Roll (1992) as an idea to investigate managers' performance (produce positive returns over a benchmark and keep TE volatility low) relative to the index and to determine the exact composition of the particular portfolio, which could dominate the benchmark and possess low TE by imposing constraints on a beta (Text B: 53; my comment AB296, Addendum E).

Comment [AB13]: Very long sentence; try to split.

In the example, nine idea units can be counted, if the clause in brackets is taken into account. These nine ideas can be extracted as follows:

1. TE_1 was suggested by Roll;
2. There is an idea to investigate the performance of managers;
3. The performance of managers is to be investigated relative to the index;
4. Positive returns can be produced over a benchmark;

5. TE volatility can be kept low;
6. The exact composition of the particular portfolio is to be determined;
7. The portfolio could dominate the benchmark;
8. The portfolio could possess low TE;
9. The portfolio could impose constraints on a beta.

In principle, each of these nine idea units can be formulated as a full and independent sentence. If a writer was given the list of these nine units and was asked to express these ideas in running text, he would probably never pack them all into just one sentence; the idea seems almost impossible. I did not rewrite or shorten such long sentences for the students; I placed a comment in the margin in which I made the students aware of extremely long sentences and suggested to the students to split such sentences into more manageable components.

Punctuation was another source of various kinds of error in the thesis draft. Perhaps the most frequent punctuation problems occurred in connection with the use of “however”.

After “however” at the beginning of a sentence, commas were mostly placed correctly as in the following sentence:

However, our review was unsuccessful when searching for the respective literature for Mutual Index Funds (Text B: 41; Addendum E).

“However” in the middle of a sentence, by contrast, seemed to pose a problem for the students with regard to punctuation. Especially the comma before “however” was rarely placed. In the following two examples, three out of four necessary commas had to be placed during editing.

Accuracy in reflecting the true values and development is, however, limited due to index staleness (Text B: 21; my changes, Addendum E).

The size, however, can vary according to the respective ETF (Text B: 30; my changes, Addendum E).

Constructions with “however” in which a colon precedes the conjunction to separate two main clauses may be seen as the “advanced” case of punctuation in sentences with “however”. Since the students had had problems with comma placement in simpler constructions with

“however”, it was no surprise that in the majority of sentences in which a colon was necessary, a colon had to be introduced for the students:

Several authors claim that using standard deviation to measure risk of deviations of a fund from a benchmark is inappropriate due to return distribution characteristics; however, if we take samples from the market as a whole and use a long time horizon, the standard deviation should be a reasonable estimator of risk (Text B: 27; my changes, Addendum E).

Problems with comma placement were not restricted to clauses containing “however”; comma errors also occurred in other sentences, as for instance in the following restrictive relative clause, in which a comma had to be deleted:

The idea behind this stance is that a researcher should understand reality from the viewpoint of social actors, who create this reality; one should be “empathetic” in order to understand the researched phenomenon (Text B: 11; my change, Addendum E).

A different punctuation problem in the thesis was the recurrent confusion of the hyphen and the dash. Whether it was a mere careless mistake or whether the students did not know the difference between hyphen and dash remained unresolved.

Active management (*also active investing*) is a strategy of portfolio management which aims to beat the benchmark through effective operational activity (Text B: 7; my change; my comment AB55, Addendum E).

Comment [AB14]: The hyphen is wrong here since you are not hyphenating two words. I think you meant to use a dash, which is, however, not necessary since you have a full sentence here. The same applies to the two subsequent definitions.

I could have changed the hyphen to a dash and adapted the sentence without further comment. However, since this was not the only instance in which hyphen and dash had been confused, I chose to use a comment to point out the problem to the students and let them make the changes, just in order to give them some practice on the difference between the hyphen and dash.

In other cases, primarily where referencing was concerned, I corrected an erroneous use of a dash by changing it to a hyphen, as in the following example of an in-text reference.

Original version:

(Herring & Hunke, 2001, pp. 908–909) (Text B: 36, Addendum E).

Edited version:

(Herring & Hunke, 2001, pp. 908-909) (Text B: 36; my change, Addendum E).

Another recurrent error was the creation of compound nouns by insertion of a hyphen in cases where normally no hyphen would be used in English:

This leads to a deficit of the ETF stock basket, which has to be aligned by transferring funds from the swap-partner to the ETF (Text B: 35; Addendum E).

German native speakers writing in English may be particularly inclined to form compound nouns by hyphenating two nouns or an adjective and a noun, or by fusing two words to form a new compound, since the German language has a high incidence of compound nouns. Neologisms through hyphenation or fusion of two originally unconnected words are not uncommon in German, and writers are rather free to form such new compounds. The compound “swap partner” from the example sentence would be translated into German as “Tauschpartner”, a compound of the two nouns “Tausch” and “Partner”. If in the German language, a compound of two separate words is difficult to read, a hyphen is used instead to form the compound. “Swappartner” as a single word in English would not only read awkwardly, but someone with a moderate feeling for the English language and grammar will know, consciously or intuitively, that “swappartner” is hardly possible as an English compound. For a German native speaker the alternative of hyphenating the two words immediately suggests itself. The recurrence of erroneous formations of compound nouns through hyphenation in the thesis draft can be explained by the fact that one of the two writers is a German native speaker. Even though the problem was explained to the students in their working document, in such cases hyphens were removed accordingly during editing. The note in the working document in this case was meant as a general remark to draw the students’ attention to differences with regard to hyphenation rules in German and English, but it was not expected that the students would spot every hyphenation error in their text and correct it accordingly, not least because such grammatical issues often need a little training until they occur naturally in practice; but there was no opportunity for this in the restricted time frame of this editing project.

In contrast to the occasional overuse of hyphens in compound nouns, undue modesty with regard to the use of hyphens became apparent elsewhere. The hyphenation of compound adjectives seemed to create difficulties for the writers, and the impression came across that they were uncertain about compound adjectives and their use, as is apparent in the following example.

There are capitalization-weighted, equal-weighted, **modified market capitalization weighted**, price-weighted and attribute weighted indices (Text B: 21; my comment 142, Addendum E).

Since the concepts at hand are specific to the subject of Finance, I abstained from making corrections without having read the relevant literature. Even though I was fairly sure that “attribute weighted” was a case of a hyphenated compound adjective and that the concept “modified market capitalisation weighted” might also benefit from some hyphenation, my internet search produced hyphenated and non-hyphenated variants of the concepts in question, obviously since hyphenation will also depend on whether they are used attributively or predicatively.⁷³ I pointed out the problem in a comment and left the decision to the students.

Apart from hyphenation issues, singular instances of punctuation errors were found in the document as well. The following example combines two different errors regarding the use of quotation marks:

Ethics is about drawing the line between right and wrong. It emphasizes the “do”s and “don’t”s in society. Ethical expectations exist in higher education as well as in society as a whole. Ethical behavior is underscored by numerous written and unwritten laws and regulations. However, new issues continuously emerge as societies become more complex.” (Errikson and Kovalainen, 2008) (Text B: 18; original type face; my comment AB124, Addendum E).

First, the paragraph ends with quotation marks and with a source. However, the beginning of the quotation is not indicated; introductory quotation marks are missing. Second, two additional pairs of quotation marks are used to frame “do’s” and “don’ts”, but erroneously. In effect, it seems that the quotation marks are used in a two-fold sense, namely as quotation marks in the classic sense, on the one hand, and as apostrophes, on the other (the closing

⁷³ I.e. an equal-weighted index; an index that is equally weighted.

Comment [AB15]: I suppose this is a financial term. However, please check in your literature whether there is indeed no hyphen used (as in contrast to the foregoing compound adjectives). The same accounts for the compound adjective “attribute weighted”.

You might also run a web search to check whether hyphens are used in particular terms, but rather trust your literature.

Please make sure that you generally hyphenate compound adjectives (adjectives which consist of more than one word) throughout your entire thesis. If you have any questions or problems with adjectives and compound adjectives, please feel free to ask me.

Comment [AB16]: Two problems:

1) The paragraph ends with quotation marks, however, it is not clear where the quotation begins. Please check, compare with your source text, and add the missing quotation marks. Please also note that if the entire paragraph is a quotation, the double quotation marks embracing “do’s” and “don’ts” should be changed to single quotation marks, as is usually the rule for a quotation within a quotation.

2) I suppose that the author did not write “do’s” and “don’t’s” in the way you did here. A certain variation in the spelling of this expression exists, but the probably most common form is “do’s” and “don’ts”. If you want to use quotation marks, you would write “do’s” and “don’ts”. If you are citing a source here and this is really how it is written in your source text, you might indicate with a [sic] that this spelling is very odd.

quotation marks in both cases are set in the place of the missing apostrophe). It can be assumed that the entire paragraph is a quotation, and that the author of the text also used quotation marks for “do’s” and “don’ts”. However, the placement of the quotation marks in the example sentence might be a careless mistake by the students rather than a mistake by the original author. I pointed out the problem in a comment and suggested that the students should check their source text again. There seems to be no definite rule for the spelling of “do’s” and “don’ts”; according to the *Oxford advanced learners’ dictionary* (2005:449), a certain variation is possible here. My additional web search produced by far the most hits for the way of spelling in the preceding sentence. Therefore I decided to suggest to the students that version from the dictionary which gave the most hits in my web search.

The use of *articles* further presented a major problem in the thesis draft. Mossop’s editing categories do not explicitly include articles as a sub-category of copy editing. This is not surprising, since problems with the use of articles are a rather special case. In the sample thesis, however, problems with the use of articles were so prominent that this matter deserves to be treated as a separate sub-category of copy editing. The text exhibited both the omission of necessary articles and the insertion of articles where no article was required. In the following three example sentences, articles had to be inserted during editing.

Such [a](#) view from the financial studies perspective implies that investment products follow [an](#) organized “hierarchy” (Text B: 10; my changes, Addendum E).

[...] one should be “empathetic” in order to understand [the](#) researched phenomenon (Text B: 11; my change, Addendum E).

[...] a prospectus must be disclosed to [the](#) potential buyer (Text B: 28; my change, Addendum E).

The following example presents the opposite case – an article was placed before a noun where no article is required:

The subjectivist~~tm~~ position is usually followed by the interpretivist position of epistemology, because both stances see [the](#)-reality from the perspective of individual social actors (Text B: 10; my changes, Addendum E).

The author is not referring to a particular reality but to reality in general. Therefore, no article is required for further specification of the concept.

The problem with the use of articles was not present in all parts of the thesis draft to the same extent. While certain paragraphs exhibited a large number of omitted or wrongly inserted articles, other paragraphs were largely in order in this regard. Upon my enquiry, the students explained that they had not divided up the writing between them into whole chapters but into sections; thus two writing styles alternated rather frequently within a single chapter. While the German native speaker (Student C) had no particular difficulties with the use of articles, paragraphs written by the Ukrainian native speaker (Student B) exhibited a high incidence of errors in this respect, since the Ukrainian student was uncertain about the correct use of articles.

As far as *usage* is concerned, one aspect became apparent in the manuscript. The students had used commas in digital numbers throughout, combined with a fairly consistent usage of American English spelling. The punctuation of digital numbers with a comma, which is rather uncommon in American English (and in British English also predominantly used only in large numbers), was preferred by the students' university department as the "more European" way of punctuating numbers, as was explained to me upon enquiry. Against this background, I left the punctuation of numbers aside, especially since the comma was used consistently in the thesis. Nevertheless, I informed the students in the working document (see 4.3.1; comment 10) that their manuscript combined different usages in the form of a mostly British punctuation of decimal numbers, but American spelling of words. I suggested to the students to discuss the matter with their department before making any changes, since in a subject area with little linguistic orientation, usage might carry little weight as long as it is not tremendously inconsistent.

Referencing was another source of diverse kinds of error in the thesis draft. As a guideline for the editing of referencing matters, the University Style Sheet (2013), which their university had provided to the students, was consulted. The manual contains a comprehensive guide to the specific Harvard referencing style preferred by the university. The manual can be seen as a catalogue of the university's house style, and in order to fulfil the requirements of thesis writing at this particular university, the house style should be followed consistently.

As I proceeded through each paragraph in the gatekeeping phase, each in-text reference was checked against a printout of the list of references. Furthermore, the date of each in-text reference as well as the spelling of each author's name was compared with the respective entry in the list of references. If a source was referenced in the text but not included in the list of references, a comment for the students was placed in the margin:

[...] with \bar{x} and \bar{y} as the respective sample mean ($\sum_{i=1}^N x_i$ and $\sum_{i=1}^N y_i$) (Tsay, 2005, p. 26). (Text B: 56; my comment AB286, Addendum E).

Comment [AB17]: Not in your list of references.

Wherever the author's name or the date in the in-text reference did not match the information in the list of references, a comment was inserted to point out the problem to the students:

It implies that both qualitative and quantitative methods are possible (Tashakkori and Teddlie, 1998, p. 21). (Text B: 10; my comment AB84).

Comment [AB18]: Please compare with the date in your reference list and correct the error.

The following example shows several problems with references in the same sentence. Comments were used again to explain the problem with each respective error to the students:

Frequently used books were "The Practice of Statistics for Business and Economic" (Moore at al., 2011), David Ruppert's "Statistics and Data Analysis for Financial Engineering" (2010) and "Statistics and Finance" (Ruppert, 2004). (Text B: 17; my comments AB113, AB113, AB115 and AB116, Addendum E).

Comment [AB19]: Not in your list of references. You only have a Moore (1996) reference.

Comment [AB20]: Please compare with the year in your reference list.

Comment [AB21]: Not in your list of references.

Comment [AB22]: Harvard style usually only requires author and date to be mentioned in your running text. Book titles are only given in the bibliography.

A few more specific referencing problems occurred in the thesis, such as in the following example. As with all referencing problems (except for certain punctuation and consistency errors), the correction was not made for the student but the problem pointed out in a comment:

Several authors claim that using standard deviation to measure risk of deviations of a fund from a benchmark is inappropriate due to return distribution characteristics; however, if we take samples from the market as a whole and use a long time horizon, the standard deviation should be a reasonable estimator of risk (Louargant et al., 2006, p. 193). (Text B: 27; my comment AB190, Addendum E).

Comment [AB23]: You have only referenced one work below. Even though it is a work written by several authors, your introduction here can be mistaken as referring to several works by several authors; it is then unfavourable that you only reference one work. If you only want to refer to this one work, I recommend you to write "Louargant et al. claim". Otherwise please add at least one or two more references to other works.

The list of references was edited separately. Since it was generated automatically in the MS Word document, the insertion of comments was not possible except for the first two references in the list. Therefore, a detailed list was compiled in the working document (see 4.3.1; comment 15), in which major problems in the list of references were discussed; small changes such as corrections of the punctuation were made directly in the manuscript.

The problems in the list of references ranged from simple punctuation mistakes and non-compliance with the style guide to serious referencing errors. Simple punctuation errors were corrected directly in the list of references. The students' guidelines were consulted in this regard. Simple punctuation errors were found and corrected such as in the following example (the changes are highlighted in grey).

Original Version:

Agapova, A. (2011). Conventional mutual index funds versus exchange-traded funds. *Journal of Financial Markets*, 14(2), 323–343. doi:10.1016/j.finmar.2010.10.005

Edited Version:

Agapova, A. (2011). Conventional mutual index funds versus exchange-traded funds. *Journal of Financial Markets*, 14(2), 323–343. doi:10.1016/j.finmar.2010.10.005

(Text B: vi; my changes, Addendum E).

In other references slightly more intensive editing was necessary. A recurrent problem was incorrect volume and issue numbers of journals; different versions were found in the document and all were corrected to conform with the way notation was prescribed in the manual. The following example presents a correction of the notation of volume and issue as well as the change of the dash into a hyphen between page references, which was another recurrent problem.

Ammann M. & Zimmermann H. (2001) Tracking Error and Tactical Asset Allocation, *Financial Analysts Journal*, Vol. 57, No. (2), March/April, pp 32–43.

(Text B: vi; my changes, Addendum E).

Apart from smaller errors concerning spelling, punctuation or minor notation matters, more severe problems were found in the list of references. These were not corrected directly, but listed for the students in the working document (see 4.3.1).

While a number of references used in the text were not listed at all, on the one hand, a few double entries were made, on the other. A number of book references were not provided with a place of publication. In a few instances references were compiled in such a confusing way that it was not clear what type of document the reference was referring to. In such cases I ran a web search to be able to tell the students which kind of reference they were to produce from the bits of information compiled in the wrong way. My Internet searches were not all successful; in such cases the students were asked in a note to identify the kind of document and reference it according to their style guide.

Other errors were found with regard to the wrong indication of names of authors, or web links which did not retrieve the respective web pages. Another prominent error was the referencing of a chapter of an edited book as an article or as a book by a single author.

Each reference was examined carefully and a list of erroneous references was compiled in the working document, together with an explanation of each problem and, where applicable, a suggestion of a way to solve the problem. The complete list with my suggestions can be found in 4.3.1.

Instances of suspected *plagiarism* were brought to the students' attention. In two cases a certain discrepancy in style was noticeable in a sentence in comparison to the rest of the paragraph in which the sentence was situated. The difference was pointed out to the students in comments.

Index staleness occurs when an index includes stocks which are not traded on a daily basis and therefore compromise the indices monitoring accuracy (Text B: 21; my comment AB139, Addendum E).

Comment [AB24]: A slight change in style is noticeable here. Please check whether you have perhaps used the words of a source which you forgot to reference.

And yet, considering fee adjusted returns, the tracking error between underlying index and index fund deviates across the index fund landscape (Text B: 3; my comment AB31).

Comment [AB25]: A certain difference in style compared to the sentences before. Please double-check whether you have used the words of a source here but forgotten to reference the source.

Apart from punctuation inconsistencies in the bibliography, a number of major **consistency** problems occurred in the thesis draft concerning the entire document or large parts of it. All consistency problems were listed in the working document. I had the feeling that a general comment in the working document is more reliable in emphasising the significance of consistency issues which affect the whole document than a single comment at one particular spot in the manuscript. With a considerable load of comments in the edited manuscript, the assessment of a comment regarding its scope and significance in relation to all other comments becomes increasingly difficult for those revising the document after editing. The discussion of major consistency problems in the working document was thus a measure to prevent consistency problems from being overlooked or not taken seriously.

Five major consistency issues were prominent in the thesis draft. The first problem was an arbitrary combination of capitalisation and lower-case spelling for the major words⁷⁴ in the headings as well as in the titles of figures, tables and equations. There was no identifiable system or logical pattern behind the alternation of capitalised and lower-case initial letters. The following are examples of section headings and captions to equations, figures and tables with alternating capitalised and lower-case initials.

3.1.1. Definition and use of an index

3.2.1. Return difference

4.1.2. Selection Criteria

4.2. Data Treatment and adjustment

4.3.1. Statistical Expression of Hypotheses

5.2.1. Summary of Results: Logistic regression

(Text B: iii-v; Addendum E).

Table 8: Regression of outliers with their benchmarks

Table 12: Overview of Hypothesis outcomes

(Text B: vi; Addendum E).

Figure 6: Logics of induction

Figure 7: Flow of Information

(Text B: vi; Addendum E).

⁷⁴ Nouns, adjectives, verbs, adverbs, pronouns and subordinating conjunctions.

Equation 14: Volatility of a return series

Equation 12: Calculation of Returns

(Text B: vii; Addendum E).

Up to section 4.2 of the sample thesis, I capitalised lower-case major words in order to give the students a point of reference. All remaining headings after section 4.2 were purposely left uncorrected (the students were informed about that in their working document), first because I did not intend to decide for the students whether to capitalise initials or whether to use lower-case spelling, and second because I considered it part of the students' learning process to engage with the arrangement of consistency in their document. The problem was explained in the working document (4.3.1; comment 4), and I pointed out that capitalisation and lower-case spellings in headings were two possible options; however, I suggested that capitalisation was perhaps the more convenient solution in this particular thesis, since the occurrence of (capitalised) subject-specific terms in certain headings might distort the visual image of an otherwise lower-case spelling system. I further reminded the students that the same accounted for all captions to figures, tables and equations and asked them to revise these for consistency as well.

The second consistency problem was concerned with the capitalisation of subject-specific terms. Similarly as in the headings and captions in the document, capitalisation and lower-case spelling of subject-specific terms alternated arbitrarily throughout the thesis draft. A comment was inserted at the very beginning of the thesis to draw the students' attention to the problem and to give them the chance to correct the error right from the beginning as they worked through my corrections. The problem was further addressed in the working document (see 4.3.1; comment 5). The comment in the margin refers to the working document, in which the matter is addressed again with some additional information.

Keywords:

Mutual index funds, exchange traded funds, tracking error, index replication,
European index funds (Text B: i; my comment AB11, Appendix F).

The third major consistency problem was a non-uniform layout of captions and the respective sources indicated for figures, tables and equations. A variety of layout versions was found in the manuscript, as present in the following four examples.

Comment [AB26]: Please check the orthography of these terms regarding capitalization of the first letters. In your text, for instance, you are constantly using a capitalized form for Exchange Traded Funds. If any of these terms are established concepts in your field and are usually capitalised, please capitalise them here too and remember to make your change consistently throughout your entire document. "Tracking Error", for instance, is sometimes capitalised and sometimes written in lower case. The same accounts for all other subject-specific terms in your document. It is confusing for your readers if you refer to one and the same concept with capital and lower-case letters alternating arbitrarily. Please also see my comment "Capitalisation of subject-specific terms" in your working document.

Version 1 – no punctuation after the title; full source in brackets:

Figure 3: Theoretical Framework (Source: own design)
(Text B: 4; Addendum E).

Version 2 – comma after the title; no brackets framing the source:

Figure 8: Methodological summary, Source: own design.
(Text B: 20; Addendum E).

Version 3 – Full stop after the title; brackets framing the publication year of the source only:

Figure 1: Logit and Probit regression differences. Source: Logit (2010)
(Text B: 59; Addendum E).

Version 4 – no punctuation after the title; entire source in brackets:

Figure 2: ETFs (blue) and MFs (green) cash flows for developed market equity
Source: (BlackRock, 2012, p. 8)
(Text B: 2; Addendum E).

As a first step of my editorial intervention, I consulted the referencing guidelines in the University Style Sheet (2013: 33-34). I found two examples for the layout of captions to figures with the first example accounting for figures designed by the writer of the thesis and the second example accounting for figures taken from an external source.

Figure 4. Overview of the analysis process.

Figure 4. Interest in entrepreneurship based on gender: □ – men, ● – women. Source: SCB, Entrepreneurship monitor, 2005.

(University Style Sheet 2013: 33-34).

Based on the examples from the guidelines, I created two examples based on the information of two of the students' captions and suggested these as examples in the working document.

Figure 3. Theoretical Framework.

(Text B: 4; my changes; 4.3.1).

Figure 3. ETFs (blue) and MFs (green) cash flows for developed market equity.

Source: BlackRock, 2012.

(Text B: 2; my changes; 4.3.1).

In my comment in the working document (see 4.3.1; comment 6) I further pointed out to the students that their guidelines only explicitly require the addition of a source to captions of figures and tables which are taken from an external source (University Style Sheet 2013: 33) and that it is therefore not necessary that the students reference themselves as a source of figures of their own design. However, I suggested an example of such a caption, should the students wish to state themselves as a source explicitly. The example follows the guidelines as closely as possible:

Figure 3: Theoretical Framework. Source: Own design.

(Text B: 4; my changes; 4.3.1).

The fourth major consistency problem in the thesis draft was an inconsistent use, and at times a disturbing overuse, of italics and/or bold font. The students had used italic font for a number of different purposes, such as for the addition of information as in the following example:

Passive management (*also passive investing, passive indexing*) - is the opposite of active investing, where managers have to make as few decisions as possible to minimize transaction costs (Text B: 7; Addendum E).

Italics were also used to emphasise words or parts of their text as in the following examples; however, emphasis was not placed on words through italic font throughout. At times, the students had used bold font instead for emphasis (see also in the example above):

Interpretivism embodies the opposite of positivism (Text B: 11, Addendum E).

Leveraged ETFs (*also Enhanced Index Fund (EIF), Active Index Fund*) - differ from traditional IF as they are actively managed (Text B: 8, Addendum E).

In other cases italics were used to emphasise a certain concept; however, not every occurrence of the same concept was italicised. While the word “phenomenon”, for instance, was italicised

in the first and second paragraph of a section, it appeared in non-italic font in the third paragraph of the same section. Two comments in the margin refer to the working document for further comments on the use of italics and on consistency:

After performing logistic regression, we found no evidence that index returns and/or volatility could influence the *phenomenon* (Text B: 64; my comment AB321, Addendum E).

Comment [AB27]: Please see my comment about the use of italics in your working document.

We have not obtained any proof that those variables could influence the studied *phenomenon* (Text B: 65; my comment AB322, Addendum E).

Comment [AB28]: If you really want to italicize “phenomenon” (which I do not recommend, as I have explained in your working document), please do so consistently.

In other cases, an overuse of italics had to be criticised. The students had used italic font to refer to figures or tables in their text as in the following sentence.

Figure 2 shows the development of ETFs and MFs on developed markets for the year 2012 (Text B: 2, Addendum E).

Even though the students had done so consistently, I classified such instances as an unnecessary overuse of italics. There is no acute need for a change of font; the reader would not derive any benefit from italic writing of a figure number. He will recognise a non-italic “Figure 2” just as well, and will equally be able to make use of the reference. By contrast, italic font in this case might disturb the reading flow rather than promoting it. The reader notices italics and intuitively expects a “deeper reason” for their use such as a particular emphasis. He will make an unnecessary mental effort to understand a deeper reason which is not present; “Figure 2” is but a normal reference to a figure. I explained to the students in the working document (see 4.3.1; comment 7) that an overuse of italics may disturb the reading process rather than helping it. I suggested a revision of the use of italics in the thesis and recommended that the students restrict their use of italic font to instances where an emphasis was indeed necessary and would support the reader’s understanding of the argument.

The fifth issue was a punctuation inconsistency at the end of paragraphs which terminated with a source. While in some instances, a full stop was placed at the end of the sentence and the source followed after the full stop with no further punctuation terminating the paragraph, in other instances the paragraph ended with a full stop after the source, as apparent in the following two examples:

Example 1: full stop before the source

In reality, however, hedge funds tend to strive towards higher returns, which eliminates safety and leads to high risks and in many cases to bankruptcy. (Anderson et al., 2010, p. 6) (Text B: 29; my changes; my comment AB200, Addendum E).

Comment [AB29]: Please note: there is an inconsistency in your entire thesis with regard to the punctuation around sources which are given at the end of paragraphs. Please see my comment about punctuation around sources in your working document.

Example 2: full stop after the source

In addition, ontology is usually presented as the starting point of a research, because it structures the understanding of the world's functionality (Grix, 2002, p. 177).
(Text B: 10, Addendum E).

I could not determine whether the students were aware of the rule that a source usually only follows the full stop at the end of a paragraph if the source relates to the entire preceding paragraph, or whether this punctuation inconsistency was a careless mistake due to the students' lack of knowledge in this regard. I therefore considered this problem as a punctuation inconsistency, even though it is possible that the students were in fact aware of this punctuation rule. I placed a comment in the margin to draw the students' attention to the problem. A more detailed description of the problem with examples was added to the working document, and the students were asked to revise all paragraphs concerned.

4.2.4.2 Phase II: language therapy

4.2.4.2.1 Stylistic editing

After gatekeeping matters on the levels of content, structure and copy had been attended to in a paragraph, the language therapy phase followed for the same paragraph, considering style and idiom. A selection of examples will demonstrate problems which were attended to in the language therapy phase and the respective editorial intervention.

The language therapy phase is divided into the two major sub-categories of tailoring the language to the readership and smoothing of the language. As far as the first sub-category is concerned, the readership can be identified as consisting of three larger groups of readers. The first group is the examination committee. The second group can be identified as the larger

academic community reading about and conducting research in the subject field of Finance. The third group consists of investors seeking information about the topic. While the first two groups can always be seen as the primary readership of a thesis, investors as potential readership are explicitly added to the group of readers by the writers of the thesis, who understand their work as a source of information for investors intending to “complement their understanding” of two major groups of financial indices discussed in their thesis. Furthermore, the thesis writers encourage investors to “consider [the] findings [from the thesis research project] for decision making” (Text B: 85).

The first task of the language therapy phase was therefore to tailor the language of the thesis to a language level appropriate for this threefold readership. To this end, Mossop’s (2007: 60-64) six reference points for the assessment of a reader profile were considered, as also suggested in 3.5.3.5. The *reader’s motivation to read the text* will be, as far as the examiner is concerned, to examine the thesis and to mark it with reference to the requirements of thesis writing. The larger academic community will most likely read the thesis to obtain information or to use data from the thesis for further research, and investors might also use the thesis to obtain information, but from a less academic point of view; investors might rather use the information directly for their activities on the market. The *reader’s knowledgeability of the subject* can be expected to be rather high; the examiner as well as the academic community can be considered to be experts in the subject area. The knowledgeability of investors may tend to be more of a practical nature and might be slightly lower compared to that of the academic community, especially since the writers of the thesis particularly address investors who intend to complement their knowledge about the fund types discussed in the thesis (Text B: 85). The difference in the level of knowledgeability between investors and the academic community, however, might be rather minor and, in comparison to that of laypeople, the knowledgeability of investors is still high. The *reader’s education level* can also be regarded as high. An academic community is always associated with a certain level of education, and stock traders are also to be seen as specialists in their particular field, which presupposes a certain level of education. *Time and place of reading* will lie quite closely together with time and place of writing as far as the examiner is concerned. With regard to the wider academic community and to investors, time and place of reading may vary significantly. If the thesis is made available on a publicly accessible database, researchers and investors from all over the world will be able to access the thesis at any given point in time. The language of the thesis document can surely not cover all the linguistic idiosyncrasies and preferences of any particular readership group in a particular place in the world at a particular point in time;

however, a stylistic editor can attempt to render the language as clear as possible, so that the chances of the thesis being understood correctly in general are as high as possible. The writer-reader relationship is one of anonymity; a certain distance and formality as well as a certain respect for the reader are adequate for the thesis. *The reader's use of the text* is rather similar to the reader's motivation for reading the thesis. While the examiner's use of the text is primarily marking and evaluating it, the academic community as well as investors will use the thesis to obtain information and data.

If we summarise the profile of the reader, it can be said that the language of the thesis needs to be tailored to an overall well-educated readership with a rather high knowledgeability of the subject and a two-fold motivation for reading the thesis, namely first to evaluate and mark it, and second to obtain information. Time and place of reading may be close to time and place of writing, but may well vary considerably. The relationship between writer and reader features distance and anonymity. The language of the thesis should be tailored to the profile of the readers in order to address them adequately. A certain degree of formality and a certain linguistic accuracy is therefore indicated.

Tailoring the language of the thesis to the profile of the readership constituted the major part of the language therapy phase. On a broader scale, the thesis exhibited problems with regard to the use of tenses, and almost exclusive use of the personal voice, which were both considered as not quite matching the profile of the readership. In addition to that, a rather high incidence of informal elements such as contractions and colloquial formulations as well as occasionally unsuitable vocabulary called for intervention.

As far as the use of tenses is concerned, the thesis draft exhibited an inconsistent use of tenses, or more precisely, at times an unsuitable use of the present tense in text sections in which past or future tense would be more appropriate. Chapters 1-3 are predominantly written in the present tense, as evident in the following examples:

We calculate return differences and different measures of tracking risk (Text B: I, Addendum E).

We compare benchmark performance to fund performance by analyzing returns (Text B: 3, Addendum E).

We do not include actively managed or institutional funds but only use returns of passively managed retail funds (Text B: 6, Addendum E).

We investigate expense ratios and their effect on index tracking accuracy (Text B: 39, Addendum E).

From Chapter 4 onwards past tense forms are predominantly used where the text reports on completed research; however, the past tense is not used consistently for text sections reporting on completed research, as can be observed in the following comparative example:

We therefore assessed our population by approximation (Text B: 42, Addendum E).

We performed a regression (Text B: 65, Addendum E).

We found no significant difference (Text B: 68, Addendum E).

BUT:

We exclude active fund strategies and use a fixed time frame (Text B: 43, Addendum E).

We will structure the TE analysis as follows: (Text B: 65, Addendum E).

It seemed that the writers of the thesis had, intentionally or unintentionally, presented chapters 1-3 as if these had been written before and were leading to their practical research. Between Chapters 3 and 4, an “invisible break” symbolises the commencement of the practical research, since from Chapter 4 onwards past forms are used more frequently (even if not entirely consistently) to report on the findings of the practical research. An educated, academic readership, and especially an examiner of a thesis, might expect the writer of a thesis to have a proper understanding of the different tenses and their function, and to be able to use tenses as indicators of the succession of different stages in a research process. Above all, an academic readership, and in particular an examiner will be especially critical with regard to a writer’s ability to use tenses to the advantage of the reading process rather than to its detriment.

I did not make any major changes with regard to the use of tenses, not least because I could not identify the tense problem as categorically wrong. However, I pointed out to the students in the working document (see 4.3.1; comment 14) that a thesis should be understood as a report on research which has been completed before writing, and that the regular use of past forms might thus be more appropriate than the present tense for passages reporting on the practical study. I did not classify the students' strategy of presenting the introductory chapters as leading to the practical research as wrong, but in case they preferred such a temporal structure, I recommended the use of future forms such as "we will investigate" or "we shall use the following theories" to indicate that the practical research was yet to be completed. I also suggested that the students might approach their supervisor on this matter to find out whether there was any preferred strategy regarding the use of tenses; after all, such rather specialised linguistic issues might not matter to a great extent in a subject area such as Finance, and the students might actually spend unnecessary time making major changes regarding the use of tenses.

The thesis further exhibited almost exclusive use of the personal voice,⁷⁵ as evident in the example sentences demonstrating the use of tenses. The writers constantly refer to themselves as "we" and make little use of impersonal constructions. Here again, I did not make any corrections in the text since the use of personal forms cannot be considered categorically wrong. I chose to point out to the students in the working document (see 4.3.1; comment 12) that the use of the personal form in research writing may be regarded sceptically by their department and that certain universities prefer an impersonal style in thesis writing, since it may be associated with a higher degree of formality and even objectivity than the personal voice. I recommended the students to refer back to their supervisor in order to find out whether the personal voice was acceptable in their department before making any unnecessary changes to their text in the short period of time left for corrections.

Apart from larger-scale stylistic problems such as the use of tenses or the personal voice, smaller-scale problems required more punctilious intervention in order to attain an adequate degree of formality matching the profile of the readership. A recurrent problem was the use of contractions, as apparent in the following two examples.

This idea entails that the researched dilemma cannot be adequately measured (Text B: 10; my changes; my comment AB83, Addendum E).

Comment [AB30]: Contractions are too informal for scientific writing on this level and are not popular among examiners. Please make sure that you always use the full form rather than a contracted form.

⁷⁵ The personal voice is also equated to the first person (singular or plural).

Both ETFs and MIFs have zero **intercepts**, which signals that they do not outperform their benchmark (Text B: 66; my change, Addendum E).

Contractions are rather informal and, as pointed out in the comment in the margin, not very popular among thesis examiners. On the first occurrence of a contracted form, I inserted a comment in addition to my correction in order to explain my corrections to the students. From there on I corrected all contractions I found in the thesis without further comment.

Colloquial formulations were another recurring stylistic issue effecting a low degree of formality. Colloquial expressions were never directly changed in the text; comments were placed in the margin instead, each giving an alternative suggestion of a higher degree of formality as in the following four examples.

~~An often argued~~ recurrent problem in ~~previous-existing~~ literature is the lack of data for the relatively new investment vehicle ETF, which makes it hard to find a sufficient set of observed returns to compare to mutual index funds returns ~~,which-that~~ track the same index (Text B: 4; my changes; my comment AB42, Addendum E).

Comment [AB31]: A little colloquial. Alternative suggestion: "which complicates the search for".

Matching mutual index funds with ETFs in order to compare their performance relative to the benchmark index from 2001 to the end of 2002, Rompotis ended up with 16 index-pairs tracking several U.S indices (Text B: 4-5; my comment AB43, Addendum E).

Comment [AB32]: Colloquial. Perhaps "extracted"?

Looking at different time periods furthers the understanding of how the two fund classes are affected by different market conditions (Text B: 5; my comment AB45, Addendum E).

Comment [AB33]: A little colloquial. Alternative suggestion: "An analysis of".

~~For example, w~~hen weights in the index change, due to changes in volume or prices of the securities, for instance, the index adjusts the new portfolio weights automatically and calculates the value. As it happens, a portfolio manager needs to adjust his weights by performing real transactions on the market, which is subject to broker fees and taxation (Text B: 26; my changes; my comment AB184, Addendum E).

Comment [AB34]: Colloquial. Alternative suggestion: "As calculation proceeds,"

Even though presenting an alternative in a comment technically equals a direct change in the text, and furthermore, means an extra step for the writer who has to copy the alternative, insert it in the text and delete the comment (instead of simply accepting a tracked change in

the text), I purposely used comments since my intention was to convey to the authors a feeling for the difference between a colloquial and a formal expression. Had I directly exchanged the colloquial expression for something more formal in the text, the students might just have accepted the change without thinking about it and perhaps without understanding why the change was made. Apart from that, the editor must be cautious with formulations which are not wrong but simply unsuitable. There are often several ways of expressing the same idea. A direct tracked change in the text has something definite to it, and if no further explanation is given for such a direct change, the thesis writers might think that something was wrong about their formulation and simply accept the change. A comment inserted with an alternative suggestion implies that there might be more ways of expressing the idea in question. The thesis writers might even come up with another, perhaps better, idea of formulating their text – which is only to be welcomed, considering that the more original writing a thesis contains the better.

Unsuitable vocabulary in certain passages also had the effect of reducing the formality of the language. An unsuitable expression is not necessarily informal as such; a rather formal word can also be unsuitable in a particular context. Nevertheless, unsuitable vocabulary creates an impression of clumsiness and may thus disappoint the reader's expectations regarding an appropriate register. The reader might experience unsuitable vocabulary as too informal. Therefore, a comment with an alternative suggestion was inserted where an expression was considered not suitable. No direct change was made in the text since in a case of unsuitability, we cannot speak of right or wrong in the classic sense. More solutions than just one might again be possible, and a comment with a suggestion deliberately leaves room for other solutions. The following selection of examples demonstrates instances of unsuitable vocabulary and the respective editorial intervention.

Our review of previous literature on the topic **showed** that there has been comparative research between ETFs and mutual funds with distinct focus on structural differences, management fees and trading characteristics (Text B: 4; my comment AB40).

Comment [AB35]: Perhaps rather “confirmed” or “demonstrated”?

This first sentence presents a rather mild example of an unsuitable word. “Showed” is simply the easiest option and presumably the word that the mind retrieves first. It is acceptable in this sentence; however, there might be other expressions which describe the situation more precisely, as for instance “confirmed”, as suggested in the comment, or which are slightly more formal, as for instance “demonstrated”. This case is a classic example of polishing the

language of a text. The original word choice is not wrong; there are simply stylistically more elegant ways of expressing the same content.

One of the main dominants of a proper study is the determination of philosophical stances related to the **flow** of the research (Text B: 10; my comment AB72, Addendum E).

Comment [AB36]: Rather "procedure"?

The expression "flow" in this example is not wrong, but it comes across as a little colloquial, on the one hand, and it does not match the context well, on the other. The flow in a research project is something that comes automatically once the project has been started. It is therefore nothing that must really be planned or can be directly influenced by any philosophical perspective. It is rather the way in which a study is performed, or in other words, the actual procedure of a study which can be determined by a particular perspective. Therefore a comment was inserted to suggest replacing "flow" with "procedure".

Even though by the end of the 20th century^{2s} research was dominated by quantitative methods, **during-in** the recent past, the qualitative method became of increasing importance. This development is, among other aspects, **justified by** a shift towards a more subjective and culture-bound approach **of-to** research in order to conduct more socially and culturally sensitive research (Text B: 14; my changes; my comment AB99, Addendum E).

Comment [AB37]: Best word? Perhaps "a function of" or "caused by" rather than "justified by"?

In this third example sentence it seems that the writer accidentally used the wrong word. The shift towards a different approach to research, which is the focus of the example sentence, seems to be the cause rather than the justification of the development described in the preceding sentence. However, since I was not entirely certain what the writer had intended to convey, and since there were certainly several options for formulating the idea, a comment was placed in the margin to give the writer an alternative and a chance to rethink the sentence.

Fundamental indexation was first introduced by Arnott et al. and is based on the idea that prices are not **good** representatives of the current value of a stock (Text B: 24; my change; my comment AB163, Addendum E).

Comment [AB38]: "Good" is often a little vague as an adjective. Perhaps "reliable" here?

The expression "good" in this sentence is not wrong as such; good, however, is often suboptimal as an adjective. "Good" does not carry much qualitative information – a

vagueness which easily creates the impression of unexplained subjectivism on the part of the writer. If something is described as “good”, the reader is only informed that the writer has a positive attitude towards the subject of discussion; however, no indication is given of why the writer has this particular attitude. In a thesis, in which the student’s capabilities of reasoning are tested, unexplained subjectivism is not particularly favourable and should be edited out. Therefore, I inserted a comment suggesting “reliable” as an alternative to “good” in the example sentence. “Reliable” also conveys a positive attitude of the writer towards the subject of discussion, but in a more objective manner. Since additional information is given on the particular quality of the subject, the positive attitude of the writer towards the subject is motivated.

Smoothing of the language of the thesis formed the second sub-category of the language therapy phase. The most prominent aspects in this sub-category and the respective editorial interventions will be presented with examples in the following paragraphs.

In a few instances the *relationship between all aspects in a sentence* was not entirely clear. Since I am not an expert in the subject, I did not have the necessary knowledge to repair such instances of unclear relationship between different aspects in a sentence in most cases. Thus I used comments to explain the problem to the students and to give them the chance to untangle such instances of obscure relationship, as in the following example.

The reasons for this growth are mostly frequently identified to be the low cost of investing and significant diversification effects which appear available by means of gaining exposure to a broad variety of markets, which in many cases were difficult to access in the past (Text B: 1; my comment AB23, Addendum E).

The *linking of sentences in terms of information flow and focus* needed to be improved occasionally. The following sentence presents a mild example of improvement on the information flow by splitting the sentence and by the introduction of a link in order to create a more natural-sounding sequence of information.

There are three most used strategies, which are worth to have a closer look at. These are known as market timing, sector selection and security selection (Text B: 31; my change, Addendum E).

Comment [AB39]: Clumsy sentence, very difficult to follow with the two “which” constructions. I made a smaller correction to simplify your formulation, but it is still not clear whether the first “which” in your sentence refers to both reasons of growth or only to diversification effects. Apart from that, I cannot understand what you mean with “appear available by means of gaining exposure”. What exactly is exposed to a broad variety of markets? Unfortunately I cannot solve the problem for you because I lack the necessary subject knowledge. Please try to divide the information up into two or three sentences and clarify what relates to what. It also often helps to just use a less complex formulation as I have done with my correction in the first part of your sentence.

The following example demonstrates more substantial intervention in order to adjust the focus to the content of the paragraph and to ensure a logical flow of information. The main focus consequently lies on the second sentence of the following paragraph:

Original version:

Our research topic could be influenced by our own background, experience and knowledge, which can result in particular decision making regarding the topic, methodology, selection of theories, data analysis methods and choice of literature for review (Bryman & Bell, 2007, p. 429). In order to evaluate any business research it is important that its methodology is well described (Bryman & Bell, 2011, p. 7).

Preconceptions

We are aware of possible influences on the research caused by our preconceptions. Thus we aim to reduce them as much as possible by identifying them and discussing our background in relation to our research methodology. (Bryman & Bell, 2011, p. 7)
(Text B: 9, Addendum E).

The two sentences in the first paragraph of the example are not sufficiently linked in terms of a logical flow of the argument. It seems as if two different facts were mentioned which are connected loosely, namely, first the fact that the researchers' background may affect decision making in the research process, and second, the fact that the methodology of a research project needs to be well described in order for a business research project to be evaluated. That the description of the methodology is actually the solution to the problem that subjectivism may distort a research project only becomes vaguely clear in the second paragraph, in which the students explain their intention of reducing subjective influences on their research by analysing their background (and, even though they failed to state it, the students certainly also intend to describe their methodology).

Regardless of minor changes and details addressed in comments in the margin, I tried to enhance the flow of information by creating a logical link between the two facts. The objective of this link is to clarify the relation between the two facts, or more precisely, to demonstrate that the second fact is actually the solution to the problem inherent in the first fact.

Edited Version:

Our research topic ~~could~~ might be influenced by our own background, experience and knowledge, which can result in particular decision making regarding the topic, methodology, selection of theories, data analysis methods and choice of literature for review (Bryman & Bell, 2007, p. 429). ~~In order to evaluate any business research it is important that~~ A business research project such as our thesis is, however, only veritable and evaluable if the danger of subjective influence is under control. One way of minimizing such influences is an explicit description of the ~~its methodology is well described~~ of the projected study (Bryman & Bell, 2011, p. 7)

Comment [AB40]: Not the topic as such may be influenced, but rather your decision-making in your research process. Please revise.

Comment [AB41]: You will rather make decisions in terms of your approach to the topic, but not about the topic as such.

Preconceptions

We are aware of possible influences on the research caused by our preconceptions. Thus we aim to reduce them as much as possible by identifying them and discussing our background in relation to our research methodology. (Bryman & Bell, 2011, p. 7)
(Text B: 9; my changes; my comments AB64-68, Addendum E).

Comment [AB42]: I reformulated this sentence so that the focus lies on the idea that a possible way to minimise the problem of subjectivism is a proper description of the methodology. What you wrote here is not wrong, it only might not become clear for the reader that the second sentence is actually the solution to the problem in the first sentence. This is only a suggestion for a better information flow.

Comment [AB43]: Possible influences or your preconceptions? Please clarify and consider that preconceptions may be of a certain rigidity and not easily changeable. I suppose you are rather talking about reducing subjective influences on your study...?

Comment [AB44]: And perhaps also by describing your methodology well, as suggested by Bryman & Bell?

For easier reading, here is again a clean edited version of the first paragraph with the inserted link:

Our research topic could be influenced by our own background, experience and knowledge, which can result in particular decision making regarding the topic, methodology, selection of theories, data analysis methods and choice of literature for review (Bryman & Bell, 2007, p. 429). A business research project such as our thesis is, however, only veritable and evaluable if the danger of subjective influence is under control. One way of minimising such influences is an explicit description of the methodology of the projected study (Bryman & Bell, 2011, p. 7). (Text B: 9; my changes, Addendum E).

Ambiguous antecedents and references to the pronouns in a sentence occurred rather frequently. Normally it might be seen as the editor's task to clarify such ambiguities directly. In the case of my sample thesis, however, I was mostly unable to establish the correct link between an antecedent or other reference and a pronoun, since in such cases of ambiguity more nouns than one are available to which a reference was possible. Without the expert

knowledge in the subject of discussion, it was mostly impossible for me to establish the right connection. Thus, in order to avoid the introduction of errors, I decided to point out such ambiguities in a comment and ask the students to amend the sentence, as in the following three examples.

With increasing value of a constituent, this stock becomes more influential to the index in the same time and thus makes it more vulnerable to concentration, i.e. that a few stocks tend to be taken as representatives s for the underlying market (Text B: 21; my changes; my comment AB141).

Comment [AB45]: What does “it” refer to? The index, or the constituent? Rather name the subject of reference again to help your reader. Please also consider to split your sentence. Two shorter sentences instead of one long sentence will also help to clarify what you mean here.

To get calculate an index price, one should, for each stock in the index, obtain their market capitalization (*price of the stock x No. of shares outstanding*) and sum all the results (Text B: 21; my change; my comment AB143, Addendum E).

Comment [AB46]: Does this refer to the index or the stock? Please clarify.

Investment companies provide services for investors who are not professionals in finance. Usually they are separated in open-end funds (mutual funds), closed-end funds (CEFs), or unit investment trusts (UITs) (Text B: 28; my comment AB192, Addendum E).

Comment [AB47]: The companies? Please specify. Otherwise “they” sounds as if referring to “investors”.

Another smoothing task was to *establish clear relationships between all aspects in a sentence*, or in Mossop’s words, to clarify “what-goes-with-what” (2007: 64). In the following example, it is unclear what the subordinate clause refers to.

Emitters might also use our findings as a point of departure for further investigation of the tracking performance of the respective instrument on which to base future launches of index funds ~~on~~ (Text B: 5; my changes; my comment AB47, Addendum E).

Comment [AB48]: This part of the sentence is clumsy and it is unclear what “on which” relates to. Technically, it could refer to “findings”, “point of departure”, “investigation” or “instrument”. Please try to reformulate and clarify the relationship of this clause with the rest of your sentence.

As a rule, a modifier should be located as closely as possible to what it modifies (Mossop 2007: 64). In the example sentence, the closest subject would be “instrument”. But this makes little sense if we focus on meaning. If we try to figure out the meaning of the sentence, the subordinate clause presumably relates to “findings”. Technically, however, the modifier “which” could refer to any of the four subjects preceding in the main clause. I chose to point out the problem in a comment and challenge the students a little by suggesting a reformulation of the sentence.

A number of *ambiguous structures needed to be made clear in context*. In the following two example sentences, the thesis writers had expressed their ideas in ambiguous ways. Even though these are rather mild cases of ambiguity and the reader will be able to ignore the problem areas, it is still worthwhile removing the ambiguity. I clearly pointed out to the students in comments where the problems occurred and asked them to revise their sentences.

Our **research topic** ~~could~~**might** be influenced by our own background, experience and knowledge, which can result in particular decision making regarding the **topic**, methodology, selection of theories, data analysis methods and choice of literature for review (Bryman & Bell, 2007, p. 429) (Text B: 9; my changes; my comments AB64 and AB65, Addendum E).

Comment [AB49]: Not the topic as such may be influenced, but rather your decision-making in your research process. Please revise.

Comment [AB50]: You will rather make decisions in terms of your approach to the topic, but not about the topic as such.

Therefore, after having agreed on a fund strategy, emitters have to decide on the further **motivations** and characteristics of the new fund (Text B: 32; my comment AB213, Addendum E).

Comment [AB51]: A fund cannot have motivations itself. Do you mean motivations for creating the fund? Please specify.

Where *unidiomatic expressions* were detected, more idiomatic solutions were sought and introduced into the text. It would make little sense to simply point out in a comment that a certain expression is unidiomatic and ask the writers to find a more idiomatic solution. Non-native speakers have a limited sense of idiom in the foreign language, and if a non-native speaker is simply not familiar with a certain idiom, there is little chance that a more idiomatic solution will be retrieved. In the following sentence the expression “regarded with less quality” was identified as slightly unidiomatic, since when quality is referred to, it usually comes in combination with adjectives such as “high” or “low”, but rarely with the adjective “less”. A quick Internet search confirmed this with a significantly higher incidence of the use of “lower” in connection with statements regarding quality. A comment was inserted with an alternative and more idiomatic suggestion.

There are also disadvantages of secondary data. According to Denscombe (1998, p. 182) and Saunders et al. (2007, p. 260), data may not fit the purpose of the study or **regarded with less** quality (Text B: 17; my comment AB117, Addendum E).

Comment [AB52]: This sounds a little odd. Perhaps “may be lower in quality”?

Another shortcoming with regard to idiomatic usage was the incorrect use of the idiomatic phrase “on the one hand – on the other hand”. The thesis writers apparently had problems with this phrase, since in several instances only one half of this idiomatic phrase could be

found in the text. In the following example sentence, the writers had used “on the other hand”, without the first part of this idiomatic pair, “on the one hand”, preceding it anywhere in the paragraph. The problem was corrected in the text, and an additional comment was inserted to explain to the students that this idiomatic phrase could not be used in parts only.

Generating or using numerical data, by contrast, on the other hand is referred to a known as quantitative research (Text B: 14; my comment AB97, Addendum E).

Comment [AB53]: “On the other hand” can only be used if “on the one hand” precedes! Alternatively you can write “by contrast” or “in contrast to”.

4.3 Additional commentary in the working document

An extensive amount of problems in the thesis draft is approached in the working document which was compiled for the students in the editorial process. Major problems are addressed with explanations, examples and suggestions for solutions. The working document hence represents one of two major sources of editorial commentary for, and communication with, the students. The first source is the edited thesis draft itself with editorial notes and suggestions in the margin of the thesis and direct corrections in the running text; the working document constitutes the second major source of editorial commentary. The first major source of commentary is represented in this study by means of the presentation and discussion of examples of editorial comments and in-text corrections in 4.2.4. In order to present a complete picture of the major editorial commentary, the working document compiled in the course of the testing assignment be incorporated here as the second major source of editorial commentary.

4.3.1 Working document

Dear Student B and Student C

This working document gives you an overview of issues that you need to address as you revise your thesis. I recommend that you study this working document before you start working through my comments and suggestions in your thesis. The issues listed here mostly concern larger parts or even the whole of your thesis, and it is always recommendable to correct major errors before attending to smaller problems.

All the best for your revision!

1) Spellchecker:

Before you start revising your thesis, please check whether you are both using the English spellchecker of your word processing programme. I came across a spelling

error in your thesis which gave me reason to assume that at least one of you might have had a German spellchecker on while writing. Please make sure that you change the language of your spellchecker to English.

1) Punctuation of headings:

Usually no full stop is used after the last digit of numbered headings, i.e. not 1.3.3. but 1.3.3

If you change that, please remember that you also change it in your running text wherever you refer to a particular section by stating the number of the section heading.

2) Punctuation of sources:

As already noted in a comment in your paper, there is an inconsistency in your entire thesis with regard to the punctuation around sources which are given at the end of paragraphs. In some instances you end the paragraph with a full stop, after which your source follows as in this paragraph:

The Security and Exchange Commission (SEC) includes both fund classes in its description of index funds. Even though Mutual Funds (MFs) are usually actively managed when classified as index funds, the SEC describes the management as more “passive” than that of non-index funds, as the tracked portfolio of securities is rather fixed for index funds (SEC, 2007). The peak development of MFs was during the 1990s, when the growth rate of this investment vehicle was around 22 percent in the U.S. as well as in many other countries around the world. The growth in MFs appeared simultaneously with the high growth in stock markets, increasing capitalization and the expanding presence of large multinational financial groups. (Klapper, 2004, pp. 1-2)

Please note: this form of punctuation is only correct if the source relates to the entire preceding paragraph. In this case, your punctuation is correct with the source following the full stop after the last sentence of your paragraph without a full stop following your source.

However, if your source only relates to the last sentence of your paragraph, the full stop is to be placed at the very end of your paragraph after the source, while no full stop is required after the last word of your sentence before the source:

The growth in MFs appeared simultaneously with the high growth in stock markets, increasing capitalization and the expanding presence of large multinational financial groups (Klapper, 2004, pp. 1-2).

Please make sure you check the punctuation of your sources at the end of all paragraphs in your thesis after which sources follow and change the punctuation where necessary in order to be correct and consistent.

3) Case of headings:

Please revise your headings. You are using a combination of capital and lower-case first letters of major words, i.e. nouns, adjectives, verbs, adverbs, pronouns and subordinating conjunctions. Compare, for instance, the first two sub-headings under 3.3.1.

You can decide whether you capitalize all major words in your headings or not, but you should choose one option and follow your choice consistently. If your guidelines specify any preference, please follow your guidelines.

The same accounts for the titles of your tables, figures and equations! Please check these as well for spelling consistency!

Up to your section 4.2 “Data Treatment and Adjustment” I have capitalized all major words in your table of contents as well as in your headings in order to show you what I mean. From 4.2 onwards I have not made any changes. Please make your choice and change all your headings accordingly. Please note that certain terms in your headings may be established technical terms in your subject area. Such terms are often capitalized. Should this be the case, you might be on the safer side if you capitalize all major words in your headings. Even though the readers will then not spot such established concepts in your headings, they will find these through capitalization in your running text. If you are not sure which solution is more appropriate in your subject area, please discuss the matter with your supervisor.

4) Case of subject-specific terms:

Please revise all subject-specific terms in your document. You are alternating capital and lower case of most of these terms in your thesis. I cannot tell you which spelling is better or more popular in your field; I can only tell you that capitalisation of subject-specific terms is not uncommon practice. If these subject-specific terms are capitalised

in your literature, I recommend you to capitalise them in your thesis too since capitalisation makes it easier for the reader to recognise subject-specific terms in your text. However, it is important that you are consistent, that is, you should *either* use capital *or* lower case throughout for all your subject-related terms and for each instance in which you mention such a term in your text.

5) Captions and sources to figures:

A uniform layout of captions to figures, tables and equations should be used. Please compare the following examples from your text:

- Figure 3: Theoretical Framework (Source: own design) → brackets
- Figure 8: Methodological summary, Source: own design. → no brackets.
- Figure 1: Logit and Probit regression differences. Source: Logit (2010) → only year in brackets.
- Figure 2: ETFs (blue) and MFs (green) cash flows for developed market equity
Source: (BlackRock, 2012, p. 8) → Entire source in brackets.

I recommend you to revise all your captions and use one form consistently. Please also consider punctuation. I recommend the use of a full stop after each title of the caption, as stipulated by your guidelines, followed by the source, as in these two examples:

- Figure 3. Theoretical Framework.
- Figure 3. ETFs (blue) and MFs (green) cash flows for developed market equity.
Source: BlackRock, 2012.

Please note that your guidelines only expressly require the statement of a source if the information in a figure or table is borrowed from another source (please see your guidelines on pages 33-34). I do not think, however, that anybody will be irritated if you wish to include yourself as a source as in the first example (Figure 3). In case you include yourself as a source, please follow your guidelines as closely as possible. I recommend the following design:

- Figure 3. Theoretical Framework. Source: Own design.

Please make sure that the layout of your captions and sources is consistent and corresponds to your guidelines. Furthermore, please do not forget to include any external source of a figure or table in your list of references, as stipulated in your guidelines.

6) **Use of italics:**

Please revise the use of italics in your running text. I think some uses of italics are disturbing the reading rather than facilitating it. I think italics are not necessary when referring to equations, hypotheses and chapters or sections in the text, as for instance “*Table 2* illustrates [...]”. I recommend you to use non-italic font for easier reading.

Italics in your summary and in your introductory paragraphs in each chapter is not wrong but perhaps it is not necessary either. I see that you are trying to signal to the reader that there is an introductory part to each chapter. Just consider whether you really want so much italic font. Mostly, the plainer the type face is, the easier is the reading. Do not underestimate your readers; they will recognise an introductory paragraph without italics as well. You might also check other theses that have been written in your subject area and see how others have done it or ask your supervisor if there is a preferred way of writing and formatting introductory paragraphs of chapters.

Apart from that, you are using a combination of bold font and italics for concepts you wish to emphasise in your text. Please compare:

- **Leveraged ETFs** (*also Enhanced Index Fund (EIF), Active Index Fund*)
- *Interpretivism* embodies the opposite of positivism.

I suggest that you choose one option and use it consistently. Apart from that, additional information such as in brackets in the example above does not need to be written in italics unless there is a specific reason, which I cannot find in this particular example.

In other cases you are using italics to emphasise a particular word, such as you have done with the word “phenomenon” (see pages 64 and 65 in my edited version of your thesis draft). However, you are not using italics consistently; on page 65, “phenomenon” occurs in both italic and non-italic font. This is confusing for your readers since there is no obvious reason why you alternate the type face. Your readers might start wondering whether you are talking about two different concepts, and they

will make an unnecessary effort trying to work out why “phenomenon” is written in different type faces. If you use italics to emphasise a certain word or idea, it is important that you do so consistently. However, I do not think italics are necessary or helpful here. Please also see my comments in this regard on pages 64 and 65. I generally recommend you to use as little italics as possible in your running text.

There is, however, one case in which italics seem to be a help for the reader. Whenever you refer to quantities from equations in your text, italics help to differentiate these single letters from the rest of the text, as for instance here: “over n observations”. I recommend you to keep these italics, but please make sure that you use italics consistently wherever you refer to a quantity from any equation.

I suggest that you restrict the use of italics to instances in which italics are necessary for the reader to follow your argument, or in which italics indeed facilitate reading.

7) Hyphenation:

I have found a number of hyphenation problems in your text; they are all pointed out separately in comments in the margin. This note here is just for your record. In English, compound adjectives (that is adjectives which consist of more than one word such as market-weighted) are usually hyphenated. Compound nouns (that is two nouns taken together such as swap partner), by contrast, are usually not hyphenated in English. The rules with hyphenation are different in English than in German; I suppose that some of the problems with hyphenation in your thesis resulted from one of you two writers being a German native speaker.

8) Cross-references to sections or chapters:

When you refer to a specific chapter or section of your own work in your text, you state the section or chapter number, followed by the section or chapter heading in italic font. I recommend you to only use the chapter or section number as a reference without the heading. It is not only enough information for your reader so that he or she can find the text part in question, but it is also easier to read. A section heading following the section number in a reference creates a slightly unnatural sentence structure. Therefore I recommend that you write:

- “Therefore, we highlight existing theories about index tracking in the literature review throughout chapter 3”

instead of

- “Therefore, we highlight existing theories about index tracking in the literature review throughout chapter 3 *Theoretical Framework*.”

Italics for the section numbers are also not necessary. Your text will have a more uniform and clearer look if you stick to one type face and use italics only for exceptions where something from your text is likely to be mistaken without a font change, for instance. Such exceptions, however, are rare.

Please remember to make the change consistently throughout your entire thesis!

9) Usage of British or American English:

I would like to draw your attention to the difference between British English and American English usage since your thesis exhibits elements of both usages. As you have explained to me already, you have decided for a comma in digital numbers instead of a point because your department prefers the comma as the “more European” way of punctuating decimal digits. There is no problem with your decision as such, as long as you use commas consistently.

However, with regard to your running text, you seem to have opted for American usage, and I am not sure whether you have done so consciously or intuitively. You are almost constantly using American spelling, as in words such as

- program
- organization
- capitalization
- minimization
- organize
- summarize
- categorize
- scrutinize
- recognize
- emphasize
- specialize (in British English you would use -ise instead of -ize)
- favorable (British English: favourable)
- endeavor (British English: endeavour)
- behavior (British English: behaviour)

I have found only one instance in which you have used the British spelling of “favourable”; I have changed it to American spelling in order to ensure consistency.

It is beneficial that you are using one way of spelling rather consistently. Nevertheless I would like you to note that you are combining a more European way of punctuating digits (even though the use of a comma in decimal numbers is not always the case in British English; there is a tendency in British English to use commas for large numbers and points for small numbers) with American spelling of words. It is generally unusual to combine different usages in one text, unless there is an explicit reason. Since you are not studying a subject related to languages, your combination of usages might not make any difference in your case and might not disturb your examiner, especially since you are applying both usages consistently. I suggest that you discuss the matter with your supervisor/department. It is possible that they do not mind such particularities regarding usage and you would only create unnecessary work for yourself by making any changes in this regard.

10) Figures, graphics and tables:

Table 3: Please consider using a smaller font size for the designations of your columns just to facilitate reading (especially in the rightmost column).

- Table 7: You have used different font styles in the table. Rather try to use only one font consistently.
- Figure 16: The colour codes on the bottom of your figure are designated in German. Please use English designations (and do not forget to make the same change in the same figure in Appendix 5).
- Figure 22 and 23: use a dash in the titles to your figures rather than a hyphen between the years.

11) Use of the personal voice:

You are writing in a personalised style, i.e. you are using the “we” form extensively. It is not uncommon for scientific research papers to write in the personal voice, but not all universities or university departments accept the personal voice in theses or dissertations because the personal voice is accepted. I suggest that you discuss this with your supervisor and only make changes in this regard should your department

explicitly demand a change since this would require quite a bit of rewriting on your side. Your time is limited and the danger of late changes is that you might end up introducing errors that you will not have time to correct again.

12) References to pronouns:

“It” and “this” are sometimes used in passages where the reference is unclear, i.e. the reader does not understand what “it” or “this” refers to. Normally it might be seen as the editor’s task to correct the problem, but in your case I had to leave the work for you because I have no subject-specific knowledge and cannot safely establish the reference to the right pronoun. I have marked all occasions in your text with a comment, where the use of “it” or “this” is unclear.

13) Use of tenses:

You are using the simple present in your thesis in a relatively constant manner up to the end of chapter 3. Please consider:

- we conduct a deductive study (page i);
- we calculate return differences and different measures of tracking risk (page i);
- we compare benchmark performance to fund performance by analyzing returns (page 3);
- we do not include actively managed or institutional funds but only use returns of passively managed retail funds (page 6);
- we investigate expense ratios and their effect on index tracking accuracy (page 39).

In chapter 4, it seems you were a bit undecided about the tenses since you have combined past and present tense. Please compare:

- During our data allocation we faced both facts which trigger the choice for non-probability sampling (page 42);
- we therefore assessed our population by approximation (page 42);
- we constrained our sample data by the following requirements (page 42);
- we obtained a list of generally eligible indices (page 43).

BUT:

- we exclude active fund strategies and use a fixed time frame (page 43);
- as we conduct a longitudinal study (43).

From chapter 5 onwards you are using the past tense more intensively, but also not consistently throughout for all instances of report on completed research:

- we obtained an average for all pairs in one month (page 63).
- in a nutshell, we tried to find any seasonality of MIF and ETF tracking performance (page 64);
- we performed a regression (page 66);
- we found no significant difference (page 68).

BUT:

- We will structure the TE analysis as follows: (page 65).

I think I understand your concept; you wrote chapters 1-3 as if these chapters had been written before and were leading to your practical research. Between chapters 3 and 4, there is an “invisible cut” in your thesis, which symbolises your practical research. From chapter 4 onwards, you use the past tense more constantly to report on the findings of your practical research.

I cannot say that your way of handling the tenses is categorically wrong. However, I would like you to note that in some instances, extensive use of the simple present comes across a little awkward or might not be the most suitable option in your chapters 1-3.

The simple present is a tense that describes events in the present, sometimes with an orientation to the future. Often, the present tense also expresses generality or continuity rather than a single event.

Your thesis is in fact a report about research you have completed already. The concrete procedures and steps of your practical research thus lie in the past (even if you have indeed written chapters 1-3 before completing your practical study). Considering that, the following sentences from your thesis may sound slightly awkward to the reader:

- “We conduct a deductive research”;
- “For our analysis we gather quantitative data”;
- “We further use a time frame of 7 years”.

The use of the simple present is not totally wrong; for the reader it may even come across as if he or she was directly involved in the process of research. However, I would like you to note that the use of the past tense might be more appropriate for sections in which you report on research that has been completed already. This does not mean that you should use the past tense only. If you consider the following sentences from your work, you will see that the present tense is indeed useful and appropriate in certain cases:

- “We start the second chapter with introducing the reader to the educational and cultural backgrounds of the authors, and proceed with a reproduction of our theoretical methodological choices. I.e. we motivate the chosen research philosophy, research approach, method of inquiry and research strategy. After a critical evaluation of our sources we conclude with addressing important ethical considerations.”

In this case, the present is the tense which best reflects reality. This may become even clearer if the first person is omitted, and some active forms in your paragraph are transformed into passive forms:

- “The third chapter introduces the reader to the educational and cultural backgrounds of the authors and proceeds with a reproduction of the authors’ theoretical methodological choices. The chosen research philosophy, the research method as well as the method of inquiry and the research strategy are motivated. After a critical evaluation of the sources, the chapter concludes with important ethical considerations.”

The present tense is appropriate here, since even at the time of reading, the chapter still introduces the reader to your educational background, and the choice of your research philosophy is still motivated in the chapter at the time of reading.

However, other parts of your text are reporting on completed research. For these parts, past forms may be more suitable. If you really prefer to write your chapters 1-3 as if

they were leading to your practical study, please consider using future forms such as “we will investigate”, “we shall use the following theories”, et cetera. In that way, it becomes clear to your reader that a practical study is going to follow. In your report on the findings you can then make use of the past tense in order to indicate that you are reporting on completed research. Such a division, I think, would be possible.

However, in principle, a thesis reports on research which has been done before writing. I therefore recommend you to use past tense for passages in which you report on completed research and rather stick to present forms for sections in which you explain what your chapter does as well as in sections in which you describe what you are concluding from your findings.

I am not going to not change the tense throughout your whole document because I want you to make your own decision. You could also talk to your supervisor about the tense question and see what her opinion is.

14) Referencing:

I could not comment on your references in your text because the automatised table did not allow me to insert comments. Please revise the following references:

- **ABCD:** you have two ABCD references dated 2013. Please check if they refer to the same source (and in this case remove one reference) since the titles of these two references are very similar.
- **Abner:** You have two references in your list for the same book by Abner. I made a few minor corrections in one of these two to adjust it to your guidelines. Please see the second Abner reference in your list. Please check against your guidelines as well and make sure that you remove the double reference. Please also note: I removed your indication of the first edition (as well as in all other references where you indicate a first edition). Usually, you only need to reference editions other than the first. But please ask your department what they prefer since this problem is not covered in your guidelines.
- **Adams:** Place of publication missing.
- **Adelmeyer:** Place of publication missing.

- **Amenc:** Please check the name of the journal. Are you sure this is the right name, or is it perhaps “The Hedge Fund Journal”? See also <http://www.thehedgefundjournal.com/node/8654>.
- **Blitz and Huij:** What kind of paper is this? Please check in your guidelines whether there is a specific guideline for referencing this kind of document. You may also need a retrieval date for this paper since you obtained it online.
- **Blume:** What kind of document is this? The way in which you have referenced it looks as if it is a journal article. However, volume, issue and page numbers are missing. If it is a different kind of document, please check in your guidelines how to reference this kind of document.
- **CFA:** Is this not a web page? Please check: <http://www.cfainstitute.org/programs/cfaprogram/courseofstudy/Pages/curriculum.aspx>. If this is the right page, please also check the copyright date on the bottom and compare with the date in your reference.
- **Chiang:** Please check this reference. I think it is a chapter in the edited book by Neubert. In any case, the place of publishing is either missing, or it is in fact Chicago and Illinois which you have written as if it was part of the title of the book? I ran a book search on the web and I think it is this work: <http://www.amazon.de/Indexing-Maximum-Investment-Results-Neubert/dp/1888998113>. Please check and correct your reference. If it is a chapter in an edited book, please see your guidelines on page 41.
- **Chu:** Is “Chu Patrick Kuok-Kung” indeed only the last name? Or is “Patrick” the first name? Please revise. Page numbers are missing too.
- **Cottrell:** Please check what kind of document this is and see whether there is a guideline referencing this kind of document. If not, your reference looks alright in the sense that the necessary information is there. However, I am wondering a little about the function of the non-italic “Regression”.
- **Datastream:** The pdf I retrieved with the link in your reference has a slightly different title... please check and correct!

- **Deville:** I think this is actually a chapter in an edited book. Please check and correct according to your guidelines. Please see also: http://www.amazon.com/Handbook-Financial-Engineering-Optimization-Applications/dp/0387766812#reader_0387766812.
- **Di Tollo:** Is this perhaps only an e-book? Please check and correct according to your guidelines for the referencing of e-books on page 41.
- **Elton:** Place of publishing is missing.
- **Gabelli:** This reference is incomplete. There is neither an indication of a website nor of a journal name. Please complete.
- **Hehn:** Place of publication missing.
- **Henry:** Place of publication missing.
- **Herring:** What is “(16/17)” referring to? If it is the volume and issue numbers, please write it in the same way as in all other references.
- **Howell:** Place of publication missing.
- **Huff:** Please note my corrections with regard to the publisher. The way you have written it is not wrong, but not consistent with earlier references. You may write “SAGE” or “Sage” or “Sage Publications”, but I recommend you to choose one option and use it consistently. Short forms of publishing houses are acceptable.
- **Hübscher:** I checked this reference and it seems to be a chapter in an edited book. Your link to the Springer website also retrieves a book. Please check your reference and correct according to your guidelines. Please be careful with regard to page numbers. If this chapter is available as a separate article on the Springer website, I suggest that you only reference the chapter as part of the edited book if the page numbers of the separate chapter and those in the book indeed correspond. If not, you might go a middle way and reference it as a chapter of the edited book, but additionally with the page numbers of the document you have used and the link to the document as well as the retrieval date.

- **Hwang and Satchell:** The “(6)” following your page numbers seems to be in the wrong place, and the way in which you refer to the different volumes is not consistent with other references. Initials of the authors are missing too.
- **Ivanov:** Volume and issue number missing.
- **Koop:** Place of publication missing.
- **Leveraged EFTs:** I think the author here is the U.S. Securities and Exchange Commission. Please check and correct.
- **McGlone:** Please check the title. Usually website titles are not written in italics. Is there any particular reason why you did? Please also check the link; I failed to retrieve the website.
- **Meziani:** Place of publication missing.
- **Roll:** If you include seasonal information about the journal, please do so for all references to a volume of the same journal. However, I do not think this information is necessary; you could also just omit the season.
- **Rompotis 2008:** Page numbers missing.
- **Rudolf:** The last line of this reference is unclear. I do not think that the ISSN number is needed here. A Journal article actually only needs volume, issue and pages.
- **You have a Ruppert (2004) reference in your text but not in your list. Please check and add this reference.**
- **Saunders (2009):** Please add the missing authors to this reference. In your text, Saunders with the publication year of 2009 is referenced as Saunders et al. and my internet search has produced that this edition was written by several authors.
- **You have an SPSS (2012) reference in your text but not in your list. Please check and add this reference.**
- **Standard and Poor’s:** Please check the link. I failed to retrieve the website.
- **Tashakkori:** Place of publication is missing.

- **You have a Tsay 2005 reference in your text but not in your list. Please check and add this reference.**
- **Wagner:** What kind of document is this? You have the year referenced twice. Please check. If it is a chapter in an edited book, you need the names of the editors and the page numbers, as stipulated in your guidelines. If it is a book by just one author, you need no page numbers in your reference.

I could not find these two authors in your text. Please check if you have referenced them somewhere, otherwise you may remove them from your list:

- Eriksson P., & Kovalainen (2008):
- Fry, H.D., (2008)

4.4 Reflection

This section provides some reflection on the application of the editing model to the sample thesis. A brief retrospective account will be given of the editorial intervention on each level as well as of the main elements of the model with regard to their relevance for a thesis editing assignment.

4.4.1 Gatekeeping

Because of time pressure, two entirely separate editing phases were not possible and an adaptation had to be made to the two-phase procedure originally suggested in 3.5.3.3. The editing procedure began with a gatekeeping phase in each paragraph or smaller section, followed directly by a language therapy phase in the same section. Despite this integration of two originally separate phases, the following reflection will treat the two editing phases separately and proceed with a retrospective account of the editorial intervention on each level of the gatekeeping phase, followed by an account of the intervention during the language therapy phase.

As suggested in 3.5.3.4, the gatekeeping phase comprised the levels of content editing, structural editing and copy editing. On the level of content, the editorial intervention was restricted to querying obscure, illogical or substantially incomplete passages through comments in the margin or in the supplementary working document. This mode of query, as opposed to direct correction, proved to be appropriate for the level of content editing, both

because of the requirement of originality in thesis writing, in which too much substantial intervention by the editor would not be indicated, and because I am not a subject specialist in Finance. An expert in the subject might have been able to give the students better feedback regarding the substantial composition of their thesis.

My non-expert status in the field surely complicated the editing process; I had to acquaint myself with the language of Finance, and the number of instances where I was uncertain about correctness or incorrectness because of my non-expert status was notably higher than it would have been in a subject I am familiar with. Mossop remarks that “specialized texts need to be content-edited by subject-matter specialists”, since non-experts may not be able to detect factual errors (Mossop 2007: 81). In this light, my non-expert status was surely a disadvantage both in the editing process and with regard to the quality of the outcome of my editing service. However, my layperson status also proved advantageous in two ways. First, it was an excellent way of testing whether the sample thesis is written and structured well enough that the reader can follow the argument – an aspect which is part of what is tested in thesis writing. This advantage was also noted in the discussion⁷⁶ of the editing process of the sample dissertation presented in Chapter 3. While a non-expert editor may miss – or in the worst case, unknowingly introduce – factual errors, a subject specialist editor may miss logical gaps in the argument, since with the necessary subject knowledge the expert may intuitively fill such logical gaps. The second advantage of my non-expert status was that I could not be tempted to complete any substantial work for the students, simply because my substantial knowledge did not suffice. Therefore, a non-expert status in the editing of theses or dissertations has both advantages and disadvantages. However restricted in terms of the scope of intervention as a result of my non-expert status, the process of content editing in the application of the developed editing model was nevertheless successful, as evident in 4.2.4.1.1.

Because of the requirement of originality,⁷⁷ structural editing of the thesis was also restricted to querying problems instead of correcting them for the students. On this level, the editorial intervention was less dependent on subject-specific knowledge than on the level of content. Suggestions could therefore be made in most cases for possible solutions to problems identified in the text. Since the overall structure of the document was in order, structural editing predominantly focused on smaller structural errors. In the few cases in which a

⁷⁶ See 3.3.3.

⁷⁷ See discussion in 2.5.

structural problem concerned the entire document or large parts of it, such as the capitalisation and lower-case spelling of headings, the first instances of such a recurrent error were corrected to demonstrate a possible solution; the students were, however, asked to complete the corrections in the remaining instances of the same error.

The process-oriented approach of the model is also an effective constraint on the editor, as it encourages the editor to allow learning opportunities for the author. The theoretical background to the role of the thesis editor,⁷⁸ which was discussed after the practical editing of Text A,⁷⁹ brought about a learning effect in terms of ethical intervention in thesis editing. As demonstrated in 3.2.1.2 and further discussed in 3.4.1, my structural editing in the first sample text was too interventionist for a thesis editing assignment; I had created a functional heading system for the student instead of pointing out the problem to the student for revision.

The literature review⁸⁰ completed subsequent to my practical work lead to the realisation that my intervention on the structural level had been unethical in terms of the requirements of originality in thesis writing. The editing model developed on the basis of the reviewed theory helped me to avoid such unethical intervention through the framework of a process-oriented approach,⁸¹ in which the editor focuses on the learning process of the student. In that way, direct correction is replaced by constructive criticism; the thesis writer is given the chance to amend his own work and the requirement of originality can thus be respected. The structure of the heading system as such was present in my sample thesis and did not require such extensive editing as the heading system in my sample dissertation. Yet my approach to the structural editing of my second sample was a lot more considerate. In summary, it can be said that the quality of my editorial intervention on the structural level was raised in terms of appropriateness for a thesis editing assignment through the application of the developed editing model and that the application of the developed editing model was successful on the structural level.

Copy editing of this sample thesis was an intensive and complex job. A great variety of problems in a text of nearly a hundred pages required a keen eye and perseverance. The pressure of time presented an additional challenge. Copy editing with its focus on the micro level of the text takes time, since every word and every punctuation mark needs to be considered; skimming through the text in steps of entire sentences, which may suffice when

⁷⁸ See 2.5.2.

⁷⁹ Presented in Chapter 3.

⁸⁰ Documented in Chapter 2.

⁸¹ Presented in 2.5.2.2.

the macrostructure is being attended to, is not appropriate in copy editing. The fact that theoretically the restricted time frame did not allow for consideration of every word and comma presented the challenge of high precision work at high speed. Checking the list of references was particularly demanding, since it involved several concurrent aspects from punctuation and formatting over consistency to compliance with the university's style manual. In effect, the reference list presented a comprehensive copy editing project of its own.

The mode of intervention combined direct changes in the text with the tracking function of MS Word and query through comments in the margin. The latter were predominantly used to point out more extensive consistency problems. These were further explained in the working document provided to the students.⁸² It was seen as beneficial for the learning process of the students to give them the chance to improve consistency in their own document. Therefore, consistency matters were explained and solutions suggested in examples, but the corrections were not all made for the students.

The application of the editing model on the level of copy editing was successful. Especially for such a multi-layered and complex level of editing, a model providing a list of sub-categories as a checklist is very helpful to keep track of all aspects that need attention.

4.4.2 Language therapy

After the gatekeeping tasks had been completed in a paragraph or smaller section, language therapy followed for the same section. Stylistic editing was attended to as one major component of language therapy. One of the two main foci of stylistic editing, the tailoring of the language to the readers expectations, required a rather high level of intervention since the level of formality in different aspects of the language of the thesis was found to be too low. The second point of focus, smoothing of the language, also required a rather high degree of intervention, since neither writer is an English native speaker. Even though the editing work in the language therapy phase seemed easier than that for the gatekeeping phase, since it was less technical and involved a less comprehensive catalogue of sub-categories, one major disadvantage arose in this particular assignment. The low incidence of suggestions for improvement with regard to idiomatic language usage indicates that an editing service by a second-language speaker is suboptimal in terms of the linguistic improvement of a thesis. This is particularly the case for a thesis written by non-native speakers, since a higher

⁸² See 4.3.1.

incidence of unidiomatic expressions can be expected in second- or third-language writing. With regard to language therapy, a native speaker might accomplish an editing result of higher quality.

Despite the disadvantage resulting from my second-language status in English, the application of the model on the level of stylistic editing (including idiomatic language usage) was successful. The drawback regarding idiom did not result from a misconception of the editing model but from a suboptimal external circumstance, namely the editor's status as a second-language speaker.⁸³

In conclusion, the gatekeeping phase was more comprehensive than the language therapy phase in terms of a larger number of editing levels and sub-levels. Furthermore, in this particular assignment the macro-level work was less intensive than the micro-level intervention on the levels of copy editing and stylistic editing, since the macro structure of the thesis draft was already high in quality before editing.

The language therapy phase was rather intensive because the thesis was written by non-native speakers; however, it can be assumed that a second-language editor is generally not ideal for the editing of a thesis or dissertation, since he might not achieve the same level of idiomatic precision as a native speaker.

4.4.3 Practicality of the model

In retrospect, the division of the practical editing into the two phases of gatekeeping and language therapy is extremely useful for thesis editing – even though in this assignment an adaptation of the two-phase strategy was necessary to cope with the time problem. Nevertheless, the separation of the rather different tasks of gatekeeping and language therapy allows the editor to see the text from two different perspectives. Against the background that in thesis editing, factual, structural and grammatical correctness has priority over stylistic aspects; a corresponding division of the editing procedure is very practical. The use of Mossop's four editing levels and his division of these levels into the roles of a gatekeeper and a language therapist was just as successful and as practical in this editing assignment as in the first editing project presented in Chapter 3. The adaptation of the two-phase model as a result of time pressure did not compromise Mossop's division of the tasks into two discrete competence fields. Gatekeeping and language therapy were still done consecutively – not in

⁸³ Also see in this regard the argument in 1.4.2.

two completely separate phases, however, but in one run-through in which language therapy followed gatekeeping directly in each paragraph. Hence the philosophy as well as the structure of the model was retained; the application merely proceeded in a slightly adapted format.

Mossop's four editing levels present a comprehensive and valuable portfolio of editing tasks, which provide orientation in the editing process. Organised in a compact editing model, these categories serve as a checklist for the editor to keep track of a complex editing process.

The compilation of a written agreement proved to be very useful in terms of transparency for all parties involved in the process of thesis writing. A written agreement with the signatures of the student and the supervisor gives the editor the security that the intervention, if done as stipulated in the signed agreement, is accepted by the institution in which the thesis is produced.

The compilation of a supplementary working document proved to be highly practical in two ways. First it gives the student and the editor an overview of the most prominent problems in the thesis. Second, a working document creates an additional opportunity to highlight problems which concern the entire document or large parts of it. If a large number of comments are placed in the margin to query problems, the chances are high that the thesis writer will not note the difference between a minor problem and an error of greater impact. A working document in which important aspects and major problems are explained thoroughly helps to avoid negligence of major errors by those who revise the edited document. It further gives thesis writers an overview of all major revision steps to be undertaken.

Apart from that, the working document can be regarded as a key feature of the process-oriented approach envisaged in the editing model. Not only is it the main interface of the communication between editor and student, but it is also the medium through which the process-oriented approach becomes most visible. The working document is the platform which passes on that information which promotes the learning process of the student; it is compiled to give the postgraduate writer a chance to correct errors and solve problems in his own text and thus to understand and learn from his own mistakes and weaknesses. In this light, the working document plays an essential role in the process of thesis editing and in the editing model.

In summary, the suggested editing model is practical in all its major aspects. It was possible to apply the model in a thesis editing project. The use of the editing model as basis of the assignment was to the benefit of the editor in terms of clear and comprehensive guidance through the editing procedure. The use of the model was to the benefit of the students through its focus on their learning process. Furthermore, by keeping the purpose of thesis writing and the requirement of originality in mind, the degree of intervention was effectively constrained by the model. Because the model promotes transparency through the written agreement signed by all parties, it operates to the benefit of all stakeholders involved in the process of thesis writing.

Perhaps the most beneficial feature of the suggested editing model is its high level of flexibility. The model is not a rigid construct prescribing a particular process of thesis editing; it is composed of independent modules, each of which possesses the flexibility to be adapted to a particular situation, should adaptation be needed. If, for instance, a supervisor or university department permits editing only upon condition that the editor will not intervene on the level of content in any way, the model allows content editing to be excluded from the assignment without the entire project collapsing. Or, as in the case of my thesis editing assignment, time pressure does not allow for a complete division of gatekeeping and language therapy in two entirely separate phases, the flexibility of the editing model allows for an adaptation to the requirements of the assignment at hand. If in a particular assignment only language therapy is requested by the university or the student, the gatekeeping part of the model can simply be omitted, but the framework of the editing model will still remain functional.

Another two pages might easily be filled with hypothetical examples of this kind. However, from the application of the model to the sample thesis in this chapter, it can be established that the model was practical in the editing assignment and offered the necessary flexibility to be adapted to the requirements of the particular situation.

4.4.4 Shortcomings of the model

The application of the editing model to a sample text was successful in the sense that the model proved practical in a real editing assignment. Nonetheless, a shortcoming of the model became apparent during testing, so that an adaptation had to be made to the model to make it fully applicable in the particular editing assignment.

The model had been developed on the basis of the practical editing of a single dissertation and a subsequent review of literature. Neither the practical situation nor the literature called for specific consideration of the potential implication of time pressure in a particular editing assignment. In the practical editing of the sample dissertation, time pressure was immaterial since sufficient time was available for a thorough two-phase edit of the sample. The literature on thesis editing, which was reviewed after the practical editing, did not indicate time pressure as a substantial issue in thesis editing. The model was therefore developed without taking time pressure into account as a potential problem in an editing process. Hence, the shortcoming with regard to the time question is not only inherent in the editing model but also in the literature.

Even though the fact that the model could be adapted to the particular situation in such a way that its functionality was retained testifies to its high flexibility; the mere circumstance that an adaptation of the model was necessary implies a potential shortcoming in terms of a failure of the model to address time pressure as a relevant aspect in thesis editing. Or from a slightly different perspective, time pressure is just one potential implication of a particular editing assignment, so the shortcoming here might have to be seen in a more general light.

It is still to be tested whether in other assignments the model is also capable of accommodating any particular problems, or whether the model is deficient with respect to incorporating other complications resulting from the practical context. One single practical assignment is apparently not sufficient as a representative for all possible contingencies which might arise in the context of thesis editing practice, and for the testing of the model with regard to its capability of responding to specific contextual implications adequately – not least since there is no limit to the nature of potential complications.

One potential complication, for instance, might be writing problems which are too specific to be addressed by a general editing model. Students or co-authors might experience problems in writing that originate from a particular language pairing. One of the two writers of the sample thesis used in this chapter – the Ukrainian native speaker – had problems with the use of articles in English, while the other thesis writer, a German native speaker, did not have any such difficulties. It is possible that such particular problems are associated with the native language of the thesis writer. If we imagine (without proving or disproving this hypothesis), for instance, that the Ukrainian language does not use articles, it is possible to explain why a Ukrainian thesis writer, who is to some extent constrained by the scope of his mother tongue, may experience problems with articles in English. As noted in 4.2.4.1.3, the problem with

articles in the sample thesis was so prominent that articles had to be treated like a separate sub-category of copy editing, even though no such category is provided for the editing model. Thanks to the flexibility of the model, the incorporation of articles into the copy editing tasks was possible. Strictly speaking, the model as it was designed did not provide the basis for the integration of this particular problem, which arose from the context of this particular assignment. It is unlikely in any case, however, that the thesis editing model designed in this thesis just as well as any editing model would ever be capable of encompassing all possible language issues on such a high level of specificity. Hence, the “failure” of the model to attend to such a specific problem cannot be termed a true shortcoming. On the contrary, the model could be adapted to this specific problem successfully, which demonstrates its high flexibility rather than a severe deficiency.

Whether refinement of the model with regard to time pressure is indicated can only be determined through further testing of the model in other assignments. If time pressure proves to be a general problem in practical thesis editing, so that a two-phase division of the editorial work proves unrealistic in general, a refinement of the model in that regard might be reasonable. However, further testing of the model might also reveal that time pressure does usually not present feature to a great extent in thesis editing. Other contextual problems might prove more urgent than time.

On any account, the only way of determining whether there are certain contextual features recurring as typical for thesis editing is sufficient testing of the editing model in further thesis editing projects. If such typical features are found, refinement of the model on the basis of these findings might be beneficial for a more accurate adjustment of the editing model to the practical situation of thesis editing.

4.5. Summary

The purpose of this chapter was the application of the thesis editing model proposed in 3.5 in a thesis editing assignment with the objective of testing the practicality of the model. The application of the model to a sample thesis is presented in 4.2 to 4.3.1. The completion of the editing assignment with reference to the editing model was successful, both with regard to testing its different modules and with regard to the sequence of steps suggested in the model. The division of the editorial work according to Mossop’s (2007) competence fields of gatekeeper and language therapist also proved successful and highly practical for thesis

editing, since these two competence fields perfectly organise a thesis editing job according to the priority of factual correctness in a thesis over linguistic precision.

The editing model further proved to be highly flexible in that its adaptation was possible in a situation of extreme time pressure, which meant that the editing of the text in two completely separate phases was not feasible. The model could be adapted in a way in which the tasks of gatekeeping and language therapy could still be carried out separately in each paragraph or smaller section in order to manage time pressure.

Nevertheless, the fact that an adaptation had to be made to the model in order to address time pressure indicates a drawback of the editing model. More precisely, it points towards the shortcoming of the model to integrate time pressure as a feature that may arise in the context of practical thesis editing. Whether the editing model needs to be refined as far as the inclusion of time pressure as a permanent feature is concerned can only be determined through extensive testing of the model in further assignments. The model was, however, flexible enough to overcome this shortcoming through an adaptation and to remain functional for the editing assignment at hand.

The testing of the practicality of the model through its application in a thesis editing assignment was therefore successful in a double sense; the model could be applied to a thesis, and the result of the application was positive in terms of the practicality of the thesis editing model.

Further testing of the editing model is still necessary, both to reaffirm or to refute the general practicality of the proposed editing model and to investigate the potential need for a refinement of the model.

Chapter 5: Conclusion

5.1 Introduction

This thesis pursued the principal objective of developing a practical model for the editing of postgraduate research writing. The study builds on my research paper entitled “Textual therapy on four levels –the practicality of Brian Mossop’s approach to editing in an authentic editing situation” (Baumeister 2011), written as part of an editing research project.

The research documented in this thesis consists of both theoretical and empirical components and proceeded in an inductive manner. The basis of the procedure was a practical editing assignment in which a dissertation (Text A) was edited in order to gain preliminary insights into the nature and requirements of editing practice for postgraduate research writing. Examples of this practical step are presented and discussed in Chapter 3. In a retrospective analysis of the practical editing work, insights into the nature and requirements of thesis editing were collected with a view to processing them for the design of a practical editing model.

After this first empirical step, the relevant literature was reviewed in search of a suitable theoretical basis for the development of the projected editing model. The literature review is presented in Chapter 2. On the basis of insights from the practical editing and the findings from the literature review, a practical model for the editing of postgraduate research writing was designed and then presented in Chapter 3.

The editing model was then applied in a thesis editing assignment presented in Chapter 4 in order to test the practicality of the model in an authentic editing situation.

This final chapter begins with a short review of the major steps of this research and proceeds with concluding thoughts about a number of aspects discussed in this thesis.

5.2 Review

5.2.1 Practical editing of a dissertation

The first step of this inductive research project was the practical editing of a dissertation. The intention was to compare and, as appropriate, combine insights of this practical step with theory from a subsequent literature review with the objective of designing a model for thesis editing on the basis of both practice and theory. A description of the editing procedure of the

dissertation is given in 3.2, in which examples of the editorial intervention are presented and discussed. Mossop's four-level system was used for the organisation of the description of the practical work in 3.2.

A subsequent reflection on this editing assignment in 3.4 revealed in essence that the practical work had been carried out in two subsequent phases, which differed qualitatively. The first editing phase had pursued the primary goal of correctness on the levels of content, structure and copy. The second editing phase had been concerned with the secondary aim of improving the language of the dissertation and thus focused on the level of style and on idiomatic language usage. In retrospect, it was found that the separation of the editing work into these two phases exhibited a great similarity to Mossop's qualitative differentiation of editorial intervention according to the two roles of gatekeeper and language therapist (described in 2.3.1.5).

The first phase focused on normative issues, or in other words on "right" and "wrong", i.e. and on the correction of errors, which Mossop associates with the role of a gatekeeper (Mossop 2007: 17). The second phase was concerned with deciding on "suitable" and "unsuitable" language, or in other words with improving the language, which Mossop associates with the role of the language therapist. With regard to thesis editing, such a division was found highly practical, since it promotes the priority of factual correctness over atylistic sophistication in postgraduate research writing (as argued in 3.4.5).

Mossop's division of editing competences according to gatekeeper and language therapist had been carried out unconsciously in this first practical step of the study. In retrospect, this division of the editing assignment was found practical for thesis editing, and the close similarity of the organisation of the practical work with Mossop's figurative roles presented one major reason for the choice of Mossop's approach as the most suitable basis for the design of a practical model for the editing of postgraduate research writing.

5.2.2 Literature review

The review and discussion of the literature in Chapter 2 raised a variety of aspects and problems concerning the current state of editing literature and practice, both in general and with regard to postgraduate research writing.

The current state of the editing industry was criticised from different sides for its general lack of regulation and insufficient accreditation of the professional editor, both on a global scale and more locally in South Africa. Recent attempts to counteract this lack of regulation have resulted in the development of numerous coexisting guidelines for professional editing (see 2.1).

Despite these recent attempts, the progress in establishing practical measures to promote the professionalisation of the editing industry seems to have been slow and not to have achieved the desired results yet. The state of the art is similar in the sub-field of thesis editing. Even though a considerable number of writing style guides are available, the majority of approaches to editing is concerned with the publishing industry. There is little practical guidance for the organisation and execution of the editing of academic texts, and more precisely of postgraduate research writing (see 2.1).

The research project documented in this thesis attempted to counteract this lack of guidance. The aim was to produce practical guidance for thesis editing based on what is available at present, despite the “immature” state of the editing industry and despite a quite restricted theoretical output with regard to the editing of postgraduate research writing.

To this end, a selection of approaches to editing was reviewed in order to find a basis which would be suitable for the design of an editing model for the particular needs of thesis editing. Works by Mossop (2007), Butcher et al. (2006), Einsohn (2000), and Mackenzie (2004) were analysed in a comparative literature study. Mossop’s approach stood out because of three crucial features – a general perspective, independent and flexible editing tasks configured in the four editing levels, and the roles of gatekeeper and language therapist. These features particularly accommodate the design of a thesis editing model, and they were not present in any other approach to editing. Therefore, Mossop’s approach emerged as the most suitable basis for the development of a thesis editing model on the basis of these three features, which are summarised in 2.4. The provisional hypothesis stated in 1.1.3 that Mossop’s editing approach might be a suitable basis for a module-based editing model for dissertations and theses was hence confirmed.

As a next step, the editing model had to be created on the basis of the findings from the practical editing assignment, Mossop’s four editing levels, and on the basis of the role models of gatekeeper and language therapist. However, thesis editing had recently attracted considerable attention with regard to the role of the thesis editor and with regard to the

general approach to thesis editing. Therefore, the current discussion on these issues had to be considered before a model could be developed.

Additional literature on these matters was reviewed and presented in 2.5. It was found that opinions regarding the tasks of thesis editors diverge between editors and other role players, and that there is no uniform definition of the role of a thesis editor. While certain literature sources suggest a rather product-focused approach to editing, by which the editor focuses primarily on the textual product, other sources suggest a more process-focused approach, by which the focus of the editing lies on the learning process of the student (see 2.5 and 2.6).

Furthermore, the question of ethical thesis editing turned out to be a point of controversy. In general, the question of ethical thesis editing was found to hinge upon the purpose of thesis writing and on the concomitant requirement of originality – all of the reviewed sources agree on the importance of these two concepts. However, the interpretation of what kind of editorial intervention takes place within the boundaries of “ethical” was found to be subject to a certain latitude (as outlined in 2.5 to 2.6).

For the projected editing model, an integrative approach was chosen which attempted to integrate Mossop’s approach to editing and the different views on the role of the thesis editor as well as the matter of ethical thesis editing as far as possible. An approach was envisaged which would give the editor the greatest flexibility possible. Flexibility in this case means the possibility to work on all levels of the text without violating the requirement of originality. In order to avoid such a violation, the possibility of querying problems with the student instead of correcting them directly was chosen as an adequate mode of intervention in cases in which direct changes by the editor would become too interventionist. This means the focus would be on the learning process of postgraduate research writers instead of merely on the textual product. Research writers would be able to correct their own mistakes and the editor would not run the risk of unethical conduct – according to the current definition of ethical thesis editing, that is.

5.2.3 Design of a practical model

A practical editing model was designed in Chapter 3 on the basis of two pillars, namely Mossop’s four-level approach with the two role models of gatekeeper and language therapist, on the one hand, and a process-oriented approach, on the other. The model guides the editor through the entire process of a thesis editing assignment and provides points of reference and

suggestions for each practical step. The model was complemented with a few aspects which were not addressed in Mossop's general approach but found relevant for thesis editing in the literature review, such as drafting a written agreement and compiling a working document, or checking the referencing in the text. The model suggests a two-phase procedure, beginning with a gatekeeping phase in which errors are corrected, which is followed by a language therapy phase during which the language of the text is improved. This sequence is based on the argument that in thesis or dissertation editing, correctness (gatekeeping) generally enjoys priority over linguistic sophistication (language therapy).

5.2.4 Testing of the model

In Chapter 4 the designed editing model was applied in a thesis editing assignment in order to test its practicality in an authentic editing situation. With regard to the sequence of steps suggested in the model, its application was successful and the model proved practical. The different modules of which the model consists, such as drafting a written agreement, the compilation of a working document for the students, and the execution of the editing tasks on Mossop's four editing levels also proved practical and useful. The division of the editing assignment into a gatekeeping and a language therapy phase was only partly successful. This was, however, not a result of this division being unsuitable for thesis editing in general, but rather a result of the extreme time pressure which arose as a contextual feature of this particular editing assignment. The tight time frame did not allow for two completely separate editing phases. The adaptation which was made to the model to accommodate the time problem modified the original structure of the model, but without damaging its philosophy of separating gatekeeping and language therapy. Gatekeeping and language therapy were carried out alternatively in each paragraph or smaller section, but only in one editing phase. In that way the philosophy of the model could be retained and only the technical execution changed slightly.

5.3 Concluding thoughts

5.3.1 The development of a thesis editing model

With the design of the editing model, the principal aim of this study was achieved. As stated in 1.2, the principal objective of this thesis was the development of a practical model for the editing of theses and dissertations. A model for the editing of postgraduate research writing

was developed successfully, and Mossop's four-level approach could be used as one of two basic pillars.

It was further stated in 1.2 that the objective was to design a flexible model which is applicable in any particular thesis editing assignment. This objective was only partly fulfilled. The model designed in this study features a high level of flexibility indeed; it is composed of different modules which work largely independently of one another and can be modified and rearranged in order to accommodate the needs of a particular editing assignment. The adaptability of the editing model to the time constraints which occurred in the testing assignment in 4.2 testified to this. Whether the model is applicable to any assignment, however, could not be established in this study. Extensive further testing of the model in other assignments may clarify this question; however, since the particularities arising in an editing assignment may be highly specific, it might be difficult to obtain absolute confirmation that the model is practical in any assignment.

5.3.2 Mossop's approach as basis for the editing of postgraduate research writing

Mossop's four-level approach to editing provides a suitable technical basis for thesis editing. As pointed out in greater detail in 2.4, Mossop's approach does not focus on specific particularities in a certain branch of the editing industry. While the majority of the other approaches reviewed focus on the particularities of editing in a publishing environment, Mossop's approach views editing from a more general perspective. Furthermore, Mossop's four levels with their respective sub-tasks stand out through a feature which is not present to such an extent in any of the other theories reviewed. This feature was termed interrelation in independency (see 2.4) and describes the potential of Mossop's editing levels to function both as collective and as independent categories. This feature was found to be highly practical for the development of an editing model, since it entails the flexibility to adapt the editing procedure to the needs of a particular assignment.

Another feature through which Mossop's approach proved suitable as basis for a thesis editing model is his differentiation between the two roles of gatekeeper and language therapist. A division of the editorial process in two phases according to these two roles proved highly practical in the editing of all three sample texts used in this study. This same division of Mossop's approach had already been made unconsciously in the practical editing of the sample dissertation presented in Chapter 3, which was the basis of procedures of this inductive study. As the literature was reviewed, it became evident that Mossop's division of

the editorial competences into the competence fields of gatekeeping and language therapy mirrored the practical procedure in the editing of the dissertation. It was further found that this division is practical for thesis editing, since it reproduces the priority of correctness (gatekeeping) over linguistic sophistication (language therapy). On the basis of these findings, the division of the thesis editing process into a gatekeeping phase and a language therapy phase thus became a principal pillar of the editing model proposed in Chapter 3.

These three main features – the general perspective, interrelation in independency and the two role models of gatekeeper and language therapist – underlie the choice of Mossop's approach as the most suitable basis for a model for the editing of postgraduate research writing. It must be noted, however, that the editing model was complemented with elements from other sources. Aspects besides the immediate textual work of thesis editing such as the discussion of the role of the thesis editor, the question of the conception of ethical thesis editing or the screen-versus-paper debate (see 2.5) are not covered by Mossop, since his approach follows a general perspective and does not discuss the particular problems of thesis editing. Therefore, the designed editing model was complemented with such specific aspects from other sources which focus on the particular field of thesis editing.

Hence, it can be summarised that Mossop's approach presents a suitable basis for the technical aspects of thesis editing. It provides a comprehensive core catalogue of aspects for the organisation and execution of the immediate textual editing work. Mossop's approach, however, does not accommodate particularities in the periphery of the immediate textual work, such as specific problems which may arise in the context of a particular editing situation. Therefore, the suitability of Mossop's approach to editing for the development of a model for the editing of postgraduate research writing must be revised down to its suitability as a basis for the technical concerns of thesis editing.

5.3.3 Practicality of the suggested editing model

As evident in 4.3, the testing of the developed thesis editing model in the assignment presented and discussed in Chapter 4 proved that the editing model was practical in all its major aspects. It was possible to apply the editing model in a thesis editing assignment to the benefit of the quality of the thesis, the learning process of the student, and to the benefit of all stakeholders in terms of transparency. The application of the model in another assignment also proved the suitability of Mossop's approach for thesis editing, in particular in terms of the high flexibility of Mossop's editing levels. This became apparent during this specific

assignment, since an adaptation had to be made to the model in order to accommodate time pressure (see 4.2.1 and 4.4.1). It was possible to adapt the structure of the editing model in such a way that the editing assignment could be completed without impeding the functionality of the model.

The mere need for an adaptation with regard to the time problem which arose in this particular assignment, however, demonstrated that the editing model is still an unrefined and largely theoretical construct – despite its practical orientation. “Theoretical” is meant here in the sense that the model has not yet been sufficiently tested in practice. Even though practical input was gained from the editing of the sample dissertation presented in Chapter 3, practical testing of the model has not been undertaken yet to a sufficient degree, and thus refinement of the model from a practical perspective is still necessary.

The need for the time pressure-related adaptation points to a potential shortcoming of the model to sufficiently integrate the practical context as modifying element in any given editing process. Such a shortcoming points towards the possibility that the practicality of the model is not yet fully guaranteed, or may still be impeded by particularities arising in specific assignments. Even though the fact that in the test assignment in Chapter 4 the model could be adapted in a way in which it still remained practical proves that it is indeed capable of integrating the practical context to a certain degree, no guarantee can be given that this will always be the case. As described in 4.4.4, particularities such as specific writing problems because of a certain language combination of the thesis writer or co-writers might lead to editing problems which are not covered in the editing model. A client might also have very specific requests which are not provided for by the model. Depending on the nature of problems which might arise in practice, the editing model may be flexible enough to be adapted to contextual considerations, but no guarantee can be given in this respect without further testing of the model.

Because of the restricted scope of this thesis, no further investigation of the practicality of the designed model could be undertaken. Hence, it was concluded that the model proved practical in the one test assignment completed. Nevertheless, comprehensive testing of the designed editing model is still necessary to make further inferences with regard to its practicality for the editing of postgraduate research writing.

5.4 Proposals for further study

The following sections suggest areas and topics for further research on the basis of questions which have arisen in the course of this project, but which could not be answered satisfactorily because of the limited scope of the study. Most of these proposals imply rather extensive study which might be suitable for larger projects such as shared Master's theses or even PhD research.

5.4.1 Further testing of the editing model

One of the major shortcomings of this research project was its insufficient capacity for extensive testing of the designed editing model. One or two applications of the editing model cannot be considered a secure basis for profound inferences with regard to the general practicality of the model in thesis editing assignments. Even though the testing of the model in one full assignment produced initial positive tendencies with regard to its practicality, it also produced a number of problems and questions which will have to be considered in further testing phases. It would not be very scientific to deduce from these initial positive tendencies that the editing model is practical in any assignment; a greater number of assignments will be necessary to get a clearer understanding of its general practicality (and of potential shortcomings). Therefore the first proposal for further study is the testing of the designed model in a larger number of editing assignments of postgraduate research texts. It might be preferable to use sample texts from different environments as well as from first-, second- and third-language writers in order to generate a broad portfolio of test situations. It might also be preferable to test the model in real-life assignments, in which a thesis or dissertation is indeed at the stage of editing before submission.

Simulated assignments would be the other option, in which unedited versions of postgraduate research texts are used, which have already been submitted and published. While a simulated editing situation might have little effect on the application of the model with regard to the immediate textual editing work, other aspects during the editing procedure might be affected and distorted. To give an example, the communication with the student forms an integral part of the editing procedure suggested in the model. The overall interaction between editor and writer and more specific aspects such as the written agreement between all role players and of a working document for the student are vital communicative elements in the thesis editing

process. In a simulated editing assignment, however, such communicative elements will not take effect as proposed in the model.

Apart from that, a simulated assignment will lack the very particularities that may arise from the context of a real-life assignment and potentially have an effect on the practicality of the editing model, such as extreme time pressure in the editing assignment presented in 4.1 to 4.2 of this thesis, particular language problems of the writer, as mentioned in 4.4.4, or requests by the client which are too specific to be covered by a general model. Therefore, it seems vital that the editing model should be tested in real-life assignments – even though it is surely a time-consuming project since thesis and dissertation drafts in the editing stage will not be available in large numbers at the same time. Findings from test assignments will have to be collected over time to finally lead to well-founded inferences with regard to the practicality of the editing model. Even though time-consuming, the practicality of the designed editing model can only be proved or disproved in immediate practice – no theory alone will be capable of producing anything other than unproven hypotheses in this regard.

5.4.2 Investigating the learning process of the student

The testing assignment completed in Chapter 4 focussed on the testing of the editing model itself, that is, its applicability in a real assignment and its practicality in terms of guidance for the editor through the steps of a thesis editing assignment.

Through a process-oriented approach, the model offers the thesis writer a chance to become aware of errors he made in the writing process and to correct errors himself and thus improve his own text. Due to the limited scope of this study, the testing phase documented in Chapter 4 has not covered an investigation of the extent to which the process-oriented approach takes effect in the thesis writer's learning process. The model offers the opportunity to promote the thesis writer's learning process; the extent to which this promotion of the learning process is visible in the final result, however, is yet to be investigated.

A separate study might be undertaken in which the final drafts of a number of edited theses are examined after revision by the thesis writers. The final versions may be examined with reference to the suggestions made by the editor (in the edited drafts as well as in the working documents) in order to determine whether the writers of the theses were successful in implementing the editors' suggestions and thus in removing errors and in improving their own work.

The investigation of the revised theses may reveal whether the changes in the student's revision were completed as intended by the editor, and thus to what extent the editor's work, guided by the editing model, was successful in promoting the student's learning process. In that way, further insight may be gained in the functionality of the thesis editing model as a learning tool.

5.4.3 Sociological study: re-investigating the concept of ethical thesis editing

As apparent in the literature discussed in 2.5.2.1, "ethical" editorial intervention is conceptualised primarily with a view to the standards and requirements of thesis writing and the compliance of the final written product with these standards. The strong focus on standards becomes apparent in statements such as that of EAC, which declares that editors "are a valuable resource for students", provided that they edit student work "in an ethical way" in which they "respect the academic purpose of thesis writing" (2012:1).

"Ethical" must be interpreted here in the first place to mean "according to the standards which define the academic purpose of thesis writing" – standards which are more or less universally regulated within a given education system.

The pitfall here is that even though standards create equal framework conditions from an institutional side, the starting situation will differ from student to student. Disadvantaged learners may face greater difficulties in thesis writing than students with a privileged background, both on a national level in South Africa as well as on an international scale.

Disadvantage hereby may be caused by diverse factors. One possible example of a factor which may cause a disadvantage for postgraduate learners might be a socio-economic disadvantage affecting the educational situation of a student, such as the socio-economic imbalance between students with a first and those with a third world standard of living. Another example might be learning disabilities which may also cause a disadvantage for a student with regard to the performance in thesis writing.

The consideration of such social factors and the acknowledgement of the disadvantaged situation of certain groups of postgraduate learners may raise questions with regard to the ethicality of thesis editing and the conceptualisation of the role of the thesis editor.

Should the individual socio-economic and educational situation of the thesis writer be considered in thesis editing, or in other words, should the educational and socio-economic situation of the research writer determine the level of editorial intervention in thesis editing? Is a more interventionist approach to editing of postgraduate research writing justified or even indicated for disadvantaged learners? Can we indeed speak of ethical thesis editing as long as it is not acknowledged that thesis writers from disadvantaged backgrounds face other and perhaps more serious difficulties in thesis writing than students from a privileged system? Or must the current, standards-based conception of ethical thesis editing be reconsidered and redefined to integrate the individual situation of the individual thesis writer before thesis editing can truly be termed “ethical”? Such questions may particularly arise in a context such as that of South Africa, where an unjust distribution of educational privilege is still present as a legacy of apartheid policy,⁸⁴ but in a more global light, these questions may arise in any context in which a difference in standard of living and educational privilege occurs.⁸⁵

Because of its limited scope, this study did not have the capacity to provide a thorough scientific study to verify or reject the need for a reconceptualisation of ethical thesis editing and thus the role of the thesis editor, nor will it provide a practicable solution to this problem. Such an investigation shall therefore be proposed here for further study. The requirement for a redefinition of the concept of ethical thesis editing and consequently of the role of the thesis editor will remain a hypothesis until a scientific study has disproved or confirmed this requirement, and until a framework has been designed in which such a redefinition can proceed in accordance with all role players in the process of postgraduate research writing and editing.

Such a study is indeed a larger project of its own. It might be suitable for a PhD research project since it would presumably involve cross-research in different fields. On the one hand, it would have to involve consultation with political and education authorities as they are the ones who are developing policies and setting standards. On the other hand, it would equally involve a survey of the perceptions of universities, editors and editors’ associations as well as lecturers, tutors, teachers and students, not least with regard to the question of whether a redefinition of ethical thesis editing would in fact have to go hand in hand with a redefinition of the role of the thesis editor altogether. As this matter touches on social questions relating to

⁸⁴ See for instance Crouch (1996), Gilmartin (2004), de Wet and Wolhuter (2009) and Mwaniki (2012).

⁸⁵ Such as perhaps in any country with a history of immigration as for example Germany, where immigrants are often socially and educationally disadvantaged compared to local residents.

education and thesis editing, theories from social studies and educational studies could perhaps be consulted to provide a theoretical basis for such a study.

An extensive project, such a study would present the theoretical counterpart to contemporary social issues which may arise in the practice of thesis editing. It is therefore highly recommended that such a study be undertaken. The survey conducted by Kruger and Bevan-Dye (2010) in order to delineate the tasks and the role of thesis editors could perhaps be used as a model. The study could be extended by incorporating not only the perspectives of those stakeholders who were not sufficiently included in the initial study.⁸⁶ Furthermore, an analysis of the perspectives of all role players regarding the potential need for a re-definition of the concept of ethical thesis editing and of the role of the thesis editor could be included in the study.

5.4.4 Language combination-related refinement of the editing model

A further study could be dedicated to the testing of groups of sample texts of particular language pairings to make out collective problems occurring in writers with a particular first and second (or third) language. As an example, the editing model might be applied to a given number of theses or dissertations written in English by German native speakers. The same study might be carried out with theses written in English by Afrikaans or by French native speakers, and so on. The aim of such tests of groups of samples would be to determine whether a given group of native speakers exhibits particular problems in second-language English writing. The presence of such potential particularities could then be used to adjust the editing model and its focus to specific writing problems in particular language combinations.

An example from the thesis editing assignment presented in 4.2.4.1.3 will illustrate this idea. The sample thesis presented in Chapter 4 was written by two students, a German and a Romanian native speaker. Certain paragraphs testified to serious problems with the use of articles. Upon enquiry it became clear that in contrast to the German native speaker, the Ukrainian native speaker had difficulties with the correct use of English articles (see 4.2.4.1.3). Hence, the paragraphs written by the Ukrainian native speaker were those which exhibited erroneous use of articles.

The use of articles is not particularly highlighted as a separate sub-category of copy editing in the editing model suggested in 3.5. If, however, a study in which a larger number of second-

⁸⁶ As stated by Kruger and Bevan-Dye (2010: 164).

language English theses and dissertations by Romanian native writers revealed a general weakness of Ukrainian native speakers with regard to the use of English articles, the editing model could be refined for editing assignments with this particular language combination. Articles could be incorporated into the model as a separate sub-category of copy editing in order to draw the attention of editors of English texts by Ukrainian writers to the fact that the use of articles needs particular attention in texts with this particular language combination. In South Africa the focus of such a study would be on problems arising from language combinations with English, Afrikaans and the African languages spoken in South Africa.

The testing of such particular language combinations in thesis editing and the refinement of the editing model according to the findings of such a study would surely be helpful for editing in universities and departments in which particular language combinations in postgraduate research writing are prominent. Such a study would help to tailor the editorial process to specific problems of postgraduate research writers in specific places.

An adaptation of the editing model to the specific situation in a particular area would certainly improve the overall quality of the editing service in that area. In principle, every department at every university could adapt this model to its specific needs with not much effort, if only the specific needs were identified by thorough study. Second-language theory might offer valuable information and a general framework for such a study.

5.4.5 The effect of the editing model in peer-editing situations

The editing model designed in the course of this study is intended to fill a gap in the practical field of editing. As stated in 3.5, the model is intended to provide guidance for everyone entrusted with the task of editing postgraduate research writing. Particularly in the field of thesis editing, this includes both professional and non-professional editors, since as noted in 3.5, not every student is able to engage the services of a professional editor. It is thus often the case that students have their work edited by friends or colleagues. Peer editing, as editing by colleagues (students and not professional editors) is officially termed, is thus a reality in student research writing.

In order to gain further insights into the practicality of the designed editing model, it might be worthwhile to conduct a study in which postgraduate research writing is edited by students (peers) in two groups. One group of editors is left to themselves and to their own conception of the organisation and procedure of a thesis editing assignment as well as of their role in the

editing process. A second group is provided with the editing model as presented in 3.5 plus, as a point of reference for further information, the description of Mossop's four levels of editing, as given in 2.3.1.

In an analysis of the textual products after editing as well perhaps through retrospective, structured interviews with the editors, it may be possible to assess whether and to what extent the designed editing model is helpful in peer-editing situations as procedural guidance, and whether the editing service exhibits a difference in quality and appropriateness for thesis editing if peer editors use the designed editing model as a practical guide.

In that way, the editing model could be further tested with regard to its practicality, and in particular with regard to its suitability as a guide for peer editing. Admittedly, this proposal for a study cuts both ways. On the one hand, it does not particularly promote the professionalisation of the editing industry (for more details see 2.1). In a way, it rather advances unprofessional editing through making practical guidance accessible for non-professionals. On the other hand, however, it counteracts the problem that not everyone may be able to afford thesis editing by creating a basis on which peer editing can proceed in a guided and suitable way for thesis editing, and potentially produce editing results of acceptable quality.

5.4.6 Comparative study of the disciplines of editing and translation

This last proposal for a separate study is not directly concerned with the editing of postgraduate research writing in the first place. This last research idea picks up on a thread which emerged at an early stage in the literature review of this study.

In 2.1 a difference in perspective was noted between Mossop's approach to editing and the approaches by other authors. While the works of other authors are rather closely bound to editing in a publishing environment and are at times heavily focused on details of concern in the publishing industry, Mossop's perspective on editing was found to be more general and holistic.

It was hypothesised in 2.1 that this difference in perspective might have resulted from the fact that Mossop comes from the professional field of translation, in which at the time he was writing *Revising and editing for translators* (2007) a change of perspective was in progress, away from the detail towards the whole, and away from a prescriptive and rule-bound approach towards descriptive objectivism.

It was further assumed in 2.1 that this difference in perspective might mirror a general difference between the fields of translation studies and editing theory. Editing as a field which is much concerned with the elimination and correction of errors, and which hence moves along the lines of rules and prescription, might be less inclined to adopt a general perspective than translation studies as a field which has moved away from details, rules and prescription towards a more descriptive perspective.

It might be an interesting and informative project to conduct a comparative study of the fields of translation and editing in order to examine whether there are differences between these two disciplines as far as their perspective is concerned, as well as their propensity to change perspective, and whether this propensity can be identified as a function of the extent to which rules and prescription govern theory and practice in the respective discipline.

It may be hypothesised that editing as a discipline might, because of its rule-bound nature, be more resistant to reflection and change of perspective than translation, which is perhaps a little freer in this regard. Whether indeed a parallel exists between the prescriptive and descriptive orientation of these two disciplines and their respective propensity to reflect and change perspective, however, has yet to be investigated.

5.5 Conclusion

With the design of a practical model for the editing of postgraduate research writing, the principal objective of this study was achieved. The underlying intention was to create a practical point of reference for thesis editors given the undeveloped state of the art of the field of thesis editing, both in theory and practice.

In the course of this study, and in particular during the testing phase of the designed model, it became obvious that there is more to the development of a practical model than just its immediate composition. Extensive testing is part of the design of a functional model. Even though this study has taken the first steps in this regard, the scope of this thesis did not allow for a testing phase with the necessary comprehensiveness to finally prove or disprove the practicality of the model, or to refine the model in order to increase its practicality, if indicated. Such studies are yet to be undertaken in separate projects.

In this light, the designed editing model can still be seen as the prototype of a practical guide for the editing of postgraduate research writing, which still needs to undergo further study.

Nevertheless, the contribution of this research project to the field of editing is a first draft of a flexible model for the editing of postgraduate research writing. Further research and testing may develop this prototype to become a sophisticated and context-fitting practical guide to thesis editing.

In retrospect, it was impressive to see that a research project in a discipline that gives every reason to expect a rather technical and thus predictable study turned out to be so versatile that in the end it raised just as many new questions for further study as it was able to answer, and thus identified about as many problems as it was capable of solving in the research process.

This insight is nothing less than a piece of evidence that the questions in research build on each other – that they relate to each other not much differently than Mossop’s editing levels – they can be seen as independent units, as detached pieces of reality, but in some way or other they are connected and influence each other in sometimes curious ways. In other words, Mossop’s four editing levels display the same feature as the questions which move a researcher’s mind – they are interrelated in independency.

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Addendum A

Results Kruger and Bevan-Dye

Descriptive statistics

	Copyediting tasks	Means	SD
T1	Correcting incorrect spelling	3.95	0.229
T2	Correcting incorrect punctuation usage	3.86	0.347
T3	Correcting incorrect sentence structure	3.78	0.417
T4	Correcting incorrect word structure	3.89	0.315
T5	Correcting words that have been used incorrectly in terms of their meaning	3.70	0.463
T6	Correcting abbreviations and acronyms that have been used incorrectly	3.67	0.632
T7	Correcting to ensure that text conforms to generally accepted usage in the particular field	3.35	0.753
T8	Correcting to ensure that subject-specific terminology has been used in a consistent way	3.43	0.801
T9	Correcting to ensure consistency in terms of spelling, punctuation, typography, etc.	3.83	0.453
T10	Correcting to ensure that text conforms to the higher-education institution's house style or style rules	3.19	0.845
T11	Correlating parts: correcting incorrect cross-references, internal page references, footnote/endnote numbers and text, and the table of contents	2.89	0.919
T12	Correcting headings to ensure consistency in numbering and style	3.32	0.784
T13	Correcting referencing style for in-text references	3.19	0.739
T14	Correcting to ensure that all references in the text appear in the bibliography, and that all sources in the bibliography are referenced in the text	2.71	0.957
T15	Correcting bibliography in accordance with the prescribed style	3.00	1.000
T16	Correcting, where necessary, bibliographical information for accuracy	2.30	0.777
T17	Correcting to ensure consistency in terms of layout	3.16	0.764
T18	Correcting, where necessary, text of front matter and end matter	3.22	0.750
T19	Correcting, where necessary, layout of front matter and end matter, if working with a print-ready document	2.68	0.915
T20	Correcting to ensure that page numbers are correct and consecutive, if working with a print-ready document	3.05	0.880
T21	Correcting to ensure that heading numbering is correct and consecutive	3.27	0.732
T22	Making suggestions/changes pertaining to font type and font size, if working with a print-ready document	2.86	0.787
T23	Making suggestions/changes pertaining to line spacing/leading, if working with a print-ready document	2.86	0.787
T24	Correcting running heads, where applicable	2.97	0.799
T25	Correcting to ensure that there are no widows/orphans if working with a print-ready document	3.00	0.816
T26	Doing hard-copy mark-up of a document to indicate formatting and layout for the typesetter or author	2.22	0.854
T27	Doing electronic mark-up of a document to indicate formatting and layout for the typesetter or author	2.43	0.929
T28	Doing document layout and design	2.00	0.816
T29	Checking, and where necessary correcting, final documents (in whatever form) in terms of layout to ensure that they are ready for print	2.19	0.845
T30	Inserting comments (electronically or handwritten) to alert the author of the dissertation/thesis to significant and prevalent copyediting problems without correcting the problems	3.16	0.898

	Stylistic editing tasks	Means	SD
T32	Removing/correcting ambiguities	3.30	0.661
T33	Improving vague formulations	3.14	0.673
T34	Removing redundancies	3.14	0.713
T35	Tailoring vocabulary so that it is suitable for the readership	3.08	0.806
T36	Tailoring sentence structure so that it is suitable for the readership	3.14	0.787
T37	Tailoring register so that it is suited to the text type	3.05	0.780
T38	Tailoring register so that it is suited to the readership	2.94	0.893
T39	Correcting to ensure that style and register are consistent throughout the text	3.30	0.777
T40	Making sentences more concise	3.19	0.776
T41	Making text smooth and readable (cohesive and coherent) by, for example, changing or adding logical connectors to link sentences, paragraphs and sections	3.22	0.672
T42	Rewriting sections of text to improve style	2.50	0.971
T43	Inserting comments (electronically or handwritten) to alert the author to significant and prevalent stylistic problems without correcting the problems	3.51	0.607
	Structural editing tasks		
T45	Reordering sentences to ensure that the argument is logically structured	2.62	0.924
T46	Reordering paragraphs to ensure that the argument is logically structured	2.51	0.901
T47	Reordering sections or larger units to ensure that the argument is logically structured	2.41	0.832
T48	Inserting or changing paragraph breaks in order to create a more logical structure	2.78	0.917
T49	Inserting/creating textual 'guideposts' to help the reader orientate him-/herself in the text	2.08	0.649
T50	Changing the presentation of text to formats that help the reader orientate him-/herself in the text	2.46	0.767
T51	Inserting comments (electronically or handwritten) to alert the author to significant and prevalent structural problems without correcting the problems	3.30	0.702
	Content editing tasks		
T53	Checking accuracy of facts and making corrections if necessary	1.62	0.721
T54	Checking accuracy, content and relevance of illustrations, diagrams, charts and tables, and making corrections if necessary	1.76	0.796
T55	Checking accuracy of mathematical/statistical operations and making corrections if necessary	1.46	0.505
T56	Checking accuracy of dates and making corrections if necessary	1.65	0.676
T57	Checking accuracy and spelling of names and places, including the names of institutions, organisations, associations and companies, and making corrections if necessary	2.62	0.893
T58	Checking, and where necessary correcting, accuracy of quotations	1.76	0.760
T59	Correcting to ensure consistency of content	2.38	0.924
T60	Writing additional or supplementary material if necessary	1.49	0.559
T61	Rewriting sections to improve content	1.68	0.784
T62	Deleting irrelevant or unnecessary content	2.16	0.958
T63	Checking for plagiarism and alerting the author	2.27	1.071
T64	Checking for possible libel (defamatory statements) and alerting the author	2.38	1.063
T65	Checking for bias and parochialism	2.67	0.894
T66	Inserting electronic comments (or another form of note) to alert the author to significant and prevalent content without correcting the problems	3.17	0.811

Table 2: Significance tests using means

					Editing tasks					
					Copyediting tasks		Structural editing tasks			
	Mean	Std. error	z-score	p-value		Mean	Std. error	z-score	p-value	
T1	3.95	0.038	25.10	0.000*	T45	2.62	0.152	-2.49	0.994	
T2	3.86	0.057	15.18	0.000*	T46	2.51	0.148	-3.28	0.999	
T3	3.78	0.069	11.42	0.000*	T47	2.41	0.137	-4.35	1.000	
T4	3.89	0.052	17.23	0.000*	T48	2.78	0.151	-1.43	0.924	
T5	3.70	0.076	9.22	0.000*	T49	2.08	0.108	-8.47	1.000	
T6	3.67	0.105	6.32	0.000*	T50	2.46	0.126	-4.29	1.000	
T7	3.35	0.124	2.84	0.002*	T51	3.30	0.115	2.58	0.005*	
T8	3.43	0.132	3.29	0.001*	Content editing tasks					
T9	3.83	0.077	10.83	0.000*	T53	1.62	0.118	-11.63	1.000	
T10	3.19	0.139	1.36	0.087	T54	1.76	0.131	-9.50	1.000	
T11	2.89	0.153	-0.73	0.766	T55	1.46	0.083	-18.55	1.000	
T12	3.32	0.129	2.52	0.006*	T56	1.65	0.111	-12.17	1.000	
T13	3.19	0.122	1.56	0.059	T57	2.62	0.147	-2.58	0.995	
T14	2.71	0.162	-1.77	0.962	T58	1.76	0.125	-9.95	1.000	
T15	3.00	0.164	0.00	0.500	T59	2.38	0.152	-4.09	1.000	
T16	2.30	0.128	-5.50	1.000	T60	1.49	0.092	-16.47	1.000	
T17	3.16	0.126	1.29	0.099	T61	1.68	0.129	-10.28	1.000	
T18	3.22	0.123	1.75	0.040*	T62	2.16	0.157	-5.32	1.000	
T19	2.68	0.150	-2.16	0.985	T63	2.27	0.176	-4.14	1.000	
T20	3.05	0.145	0.37	0.356	T64	2.38	0.175	-3.56	0.999	
T21	3.27	0.120	2.25	0.012*	T65	2.67	0.149	-2.24	0.987	
T22	2.86	0.129	-1.04	0.851	T66	3.17	0.135	1.23	0.891	
T23	2.86	0.129	-1.04	0.851	T54	1.76	0.131	-9.50	1.000	
T24	2.97	0.131	-0.21	0.583	T55	1.46	0.083	-18.55	1.000	
T25	3.00	0.134	0.00	0.500	T56	1.65	0.111	-12.17	1.000	
T26	2.22	0.140	-5.58	1.000						
T27	2.43	0.153	-3.72	0.999						
T28	2.00	0.134	-7.45	1.00						
T29	2.19	0.139	-5.84	1.00						
T30	3.16	0.148	1.10	0.136						
Stylistic editing tasks										
T32	3.30	0.109	2.74	0.003*						
T33	3.14	0.111	1.22	0.111						
T34	3.14	0.117	1.15	0.126						
T35	3.08	0.134	0.62	0.268						
T36	3.14	0.129	1.04	0.149						
T37	3.05	0.128	0.42	0.337						
T38	2.94	0.149	-0.37	0.644						
T39	3.30	0.128	2.33	0.010*						
T40	3.19	0.128	1.48	0.069						
T41	3.22	0.111	1.96	0.025*						
T42	2.50	0.162	-3.09	0.999						
T43	3.51	0.100	5.15	0.000*						

*Statistically significant at $p < 0.05$

Addendum B

Text A, unedited version

After the manifestation of the international financial crisis in 2007, a great amount of attention at global and European level focused on regulation and supervision of the financial sector. It became accepted that the expansion and internationalisation of the financial system had advanced much faster than the process of institution-building and had resulted in a financial system that was operating internationally yet was regulated and supervised at a predominately national level. In the EU, the realisation dawned that there was a lack of capacity for “disciplining the potentially self-destructive actions of self-interested, essentially anarchic profit-seekers” (Streek 67). As a result, the Member States decided on a substantial reform of the established European regulatory and supervisory system. This reform was intended to adapt the supervisory system to the realities of the financial market and strengthen the supervisory powers at the European level (ESAs¹ Preamble 5). Ultimately, the reform led to the creation of the European System of Financial Supervisors (ESFS). The ESFS is the currently last stage in an ongoing process that has been aiming at establishing a single market for financial services, creating a harmonised regulatory structure across the EU and at fostering cooperative prudential supervision at the European level. However, despite having been in place for years, this process has not yet managed to achieve its goals. Instead, it resulted in highly inconsistent regulatory and supervisory practices across the European Union.

This paper traces this process and the development of the institutions for prudential supervision of the financial system at the European level. It opens with the creation of the Lamfalussy framework and its Level 3 committees, which were closest to embody EU-level supervisory institutions. In order to put the findings in perspective, the reasons for the creation of the Lamfalussy framework and its structure are reflected upon in the first part of the analysis. Subsequently, the focus of the paper is on the development of the competencies, tasks and capabilities of the Level 3 committees; particular attention is paid to the 2007 review of the Lamfalussy framework and its impact. The next section of the paper studies the financial crisis and the shortcomings of the European framework, which were revealed by the crisis. Subsequently, the paper analyses the recommendations on supervisory repair as presented by the report of the High-Level Group on Supervision in the EU (the de Larosière Report) and how these recommendations were put into practice. This part of the paper gives a detailed account of the structures, the tasks and the competences of the individual bodies that

¹ relates to Regulations No 1093/2010, No 1094/2010 and No 1095/2010

constitute the ESFS. Finally, the limits and shortcomings of the ESFS will be evaluated. The evaluation aims to determine if the new system at the European level has been attributed the capacity to reach their goal and create a harmonised regulatory and supervisory structure, which is able to discipline the actors in the financial market and guarantee systemic stability.

THE LAMFALUSSY REPORT

Whereas the goal of a single market has been achieved in many sectors, the integration of the financial sector fell short of this aspiration. As Quaglia notes, „the regulation and supervision of financial services has lagged behind in the agenda of the European Union (EU) until the very end of the 1990s“ (*politics* 269). The framework which was intended to foster harmonisation was based on three main concepts. First, Member States were obliged to mutually recognise the regulatory framework of one another. Second, every pan-EU financial activity would be subject to home Member State control only. Finally, every Member State would implement EU-wide minimum standards aimed at protecting investors and guaranteeing systemic stability. Through this framework, financial actors were meant to acquire a single regulatory passport which would enable them to operate throughout the EU without their actions being obstructed by host Member States' regulatory regimes. By the end of the 1990s, however, it became increasingly obvious that the previous policy had not delivered the desired results, a single financial area had not developed and that in numerous legislative areas harmonisation had not set in.

National protectionism and unwillingness to adjust national structures led to many directives being implemented inconsistently and often badly delayed. It became clear that the existing regulatory structure was unsuitable to cope with the momentous changes in the financial world such as the introduction of the monetary union, the rapid developments fuelled by technical advances and increasing globalisation and interconnectedness of the financial sector. Realising the urgent need for action, the European Commission proposed the Financial Services Action Plan (FSAP) in 1999. The FSAP consisted of 42 measures aimed at facilitating increased financial integration and creating a level playing field for financial actors across the EU. The Commission's proposal was enthusiastically embraced by market participants and policy-makers, both at EU and national level.

In July 2000, the Economic and Financial Affairs Council (ECOFIN) appointed the Committee of Wise Men on the Regulation of the European Securities Markets. The Committee, chaired by Alexander Lamfalussy, was mandated to investigate and evaluate the regulatory framework for securities in the EU. The mandate comprised three major tasks. The

first task was deliver an assessment of the current state of the integration of the securities and investment services market and evaluate the chance of completing the FSAP on time under the current legislative regime. Second, in view of the pace of innovation in the securities market, the Committee was charged to assess the suitability of the legislative framework to keep pace with the rapid speed of innovation. Finally, the Committee was mandated to develop suggestions „for adapting current practices in order to ensure greater convergence and cooperation in day-to-day implementation and take into account new developments on the market“ (Lamfalussy final report 99).

In December 2000, the Committee published its final report, which amounted to a withering criticism of the regulatory and legislative framework. The Report spelled out the inadequacy of EU-wide harmonisation, the inflexibility of the regulatory framework, its pronounced inability to adapt to changing market situations and its general failure to facilitate and encourage greater integration. Moreover, the Report criticised the Council for adopting overly complicated legislation by attempting „to fit 15 sets of national legislation into one Community framework“ (Lamfalussy final 14). The Council was further reprimanded for relying too heavily on directives, giving the Member States a high degree of discretion. This frequently resulted in EU legislation being implemented delayed and in various national interpretations, which obstructed the goal of an even playing field for financial actors (Moloney LamLegMo 510,511). The main point of critic in the Report, however, was the laggard speed of the legislative process - the average amount of time needed to adopt a measure under the co-decision framework amounted to two years.

The Wise Men concluded that the legislative framework was „too slow, too rigid, complex and ill-adapted to the pace of global financial market change“ (qtd. Wise Men in Moloney LamLegMo 511). The Committee urgently called on the policy-makers to reform the legislative and regulatory framework, as ignoring the weaknesses and keeping the status quo would mean that „economic growth, employment and prosperity will be lower, and competitive advantage will be lost to those outside the European Union“ (Wise Men 8).

The Committee proposed a new legislative framework to address these problems. The proposed law-making process was based on the realisation that passing financial regulation should be a two-stage instead of a single-stage process. Previous to the introduction of the Lamfalussy model, politicians in the Council and the EP were responsible for both fundamental political decisions and detailed technical regulation and rules. The Committee of Wise Men proposed to split these two legislative areas into two separate stages in the law-making process. At the first stage, the Council and the EP would decide on fundamental

political principles in the form of „broad but sufficiently precise framework rules“ (Moloney LamLegMo 511) which would determine the general political framework and direction of the Union. Detailed technical regulation, however, would be produced by committees of experts in a secondary stage of the legislative process and determined in accordance with the objectives and the delegated legislative mandate decided on by the primary lawmakers.

The new legislative framework was proposed as a four-level structure based on the comitology procedure, which allows the delegation of legislative powers from the primary law-makers to the Commission. Each level is concerned with a different stage of the implementation of EU legislation. At the first level, EP and Council decide on framework principles. At the second level, the Commission develops detailed technical regulation. In order to support the Commission and guarantee its accountability, the Commission is advised and supervised by expert committees. The function of the third level is to provide advice to bodies at Level 1 and Level 2, to foster information exchange, cooperation and EU-wide regulatory and supervisory convergence. Finally, Level 4 is dedicated to the enforcement of EU legislation at the Member State level (Möllers 382, OECD 95). Initially, two new committees were instituted. At level 2, a political regulatory committee was created representing the Member States and with the primary function of supervising the Commission. At Level 3, a technical expert committee was instituted, representing the national supervisory authorities and with advisory functions for Level 1 and Level 2. Through the four-level process for financial regulation, „the Lamfalussy model allows for the adoption of harmonised rules at a level of detail unprecedented“ (Moloney LamLegMo 517).

The Report set out a detailed list of principles on which the legislative framework should be based . It should maintain confidence in the European financial market, ensure a high level of prudential supervision in order to prevent systemic risks and protect consumer interests. At the same time it must not discourage or obstruct financial innovation or violate the principles of subsidiarity and proportionality as well as the competition rules of the EU. Furthermore, policy-makers, regulators and supervisors should be encouraged to take European as well as international dimensions into account when devising their strategies. Additionally, the Report recommended reliance on regulations instead of directives whenever possible. The Committee qualified this statement by recommending the choice of policy instrument being dependent „on whether there is a need for Member State flexibility or to maintain national practices [...] or whether the measure demands uniformity across the EU“ (Moloney Time 1006). Nonetheless, by recommending regulations as primary policy instrument the Committee made a case in favour of more harmonisation and less Member

State discretion. Finally, reoccurring themes throughout the Report were the need to guarantee the transparency and accountability of the law-making process and the necessity of extensive, open consultation with market participants in order to be on top of market developments.

In 2003, the Lamfalussy framework was evaluated by the Inter-Institutional Monitoring Group (IIMG)². In its Report, the IIMG evaluated the Lamfalussy Process as „viable instrument for improving the efficiency and speed of financial market legislation and regulation in the EU“ (qtd IIMG in Moloney 1007). Moreover, the transparency and inclusive nature of the Lamfalussy process was positively evaluated. The Group found „that progress had been made by the Commission, the ESC, and CESR in improving communication between policy makers and market actors“ (qtd. IIMG in Moloney 1007). As the Wise Men, the Group strongly recommended the use of regulations instead of directives whenever possible. According to the Report, exceptions should be made only „where the advantage of Member States flexibility can be demonstrated or where ‚fundamental considerations‘ make regulation undesirable“ (qtd. IIMG in Moloney 1007).

In December 2002, ECOFIN approved a proposal³ for the extension of the Lamfalussy process to the banking and insurance sector. Throughout 2003 and 2004, measures were taken to adapt the framework to the banking and insurance sector. These included the institution of four new committees. At level 2 the European Banking Committee (EBC) and the European Insurance and Occupational Pension Committee (EIOPC) were put in place for the banking and the insurance sector, respectively (OECD 96). At level 3, the Committee of European Banking Supervisors (CEBS) and the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) were created in addition to the CESR (OECD 96).

LEVEL 1 – BASIC POLITICAL CHOICE

At Level 1 of the Lamfalussy Process, basic political choice is enacted. The measures adopted at Level 1 are general frameworks, determining the overall direction of the EU policy in financial matters. Consequently, Level 1 decisions are unlikely to be subject to frequent change or to the need of aligning them to market developments. The processes at Level 1 follow the legislative co-decision procedure as determined under Article 294 TFEU (Möllers 382). In the first step, the Commission drafts legislation, either on its own initiative or on the impetus of the relevant Level 3 committee, and submits it to the Council and the EP. In case the Commission drafts a proposal on its own initiative it should consult the Level 3 committee

² comprises six independent experts; Council, Commission and EP nominate two members each (reference)

³ proposed by the German Finance Minister Eichel and the British Chancellor Brown

prior to submission. In the second step, the Commission's proposal is co-decided by the political bodies of the EU, the Council and the EP. During the whole legislative process, the Commission, Council and EP are advised by the respective committees at Level 2 and Level 3 (Möllers 382). The legislative measure can be issued either as a directive or a regulation and it is chosen by the political bodies which legislative instrument is ultimately used (Quaglia *politics* 272). The scope of possible policy measures to be adopted at Level 2 is determined at Level 1 by specifying the amount of legislative power delegated to the Commission at Level 2. Due to the lack of excessive detail at Level 1, the Council and the EP are able to adopt framework measures much more quickly, as „the more detailed Level 1 measures get, the less likely is their speedy adoption“ (Moloney *LamLegMo* 516) The general nature of the Level 1 political choices is central to the Lamfalussy process and essential to the model's efficiency.

LEVEL 2-DETAILED TECHNICAL REGULATION

At Level 2 of the Lamfalussy process, the general frameworks, legislated by the Level 1 bodies, are supplemented with detailed technical regulation. In order to guarantee technical expertise, transparency and participation of the public in the legislative process, the Level 3 committees are tightly involved in the Level 2 processes. After the Council and the EP have co-decided a framework principle, the Commission consults with the respective Level 2 committee and subsequently requests advice from the respective Level 3 committee. Utilizing an extensive consultative process, the Level 3 committee prepares advice and submits it to the Commission. In the subsequent step, the Commission examines the advice of the Level 3 committee and formulates a legislative proposal, which is then presented to the relevant Level 2 committee. Within a period of three month the Level 2 committee needs to vote on the Commission's proposal . If the committee accepts the proposal, the Commission adopts the implementing measure and the draft becomes EU law (OECD 97). However, if the Level 2 committee rejects the Commission's proposal, the Commission may not adopt it. In this case, the proposal is submitted to the Council, which has three months to consider it. If the Council has neither approved nor rejected the proposal after this period, the Commission may adopt the measure (Moloney *LamLegMo* 512). By means of this procedure, detailed technical regulation can be „adopted by the Commission under a streamlined and accelerated delegated legislative procedure“ (Moloney *LamLegMo* 511) and existing law can be aligned to market developments without a full legislative cycle.

The main actor at Level 2 is the Commission. However, the Level 2 committees wield considerable power. The primary function of the comitology committees is to advise the

Commission and „serve as a body for reflection, debate and advice“ (qtdESC preamble in Moloney LamLegMo 512). However, they essentially act as regulators and supervisors of the Commission (OECD 96). Without their approval, no measure proposed by the Commission can be adopted as part of the comitology procedures, i.e. without the involvement of the primary legislators. Through the Level 2 committees the Member States retain significant control over the legislation passed at Level 2. If a Commission proposal is to be adopted it has to win a qualified majority vote in the relevant committee, i.e. a qualified majority of the Member States must accept the proposed legislation.⁴ Each Member State representative is allocated a certain number of votes roughly reflecting the size of the State’s population.⁵ In order to reach a qualified majority, a majority of Member States (50 per cent + 1) must be in favour of the proposal. Additionally, the number of votes these Member States can allocate must amount to a minimum of 255 votes (out of 345).

The membership structure of the three Level 2 committees is almost identical. They are composed of high-level representatives of the Member States. Each Member State is entitled to send a delegation consisting of two representatives. It has become generally accepted to send one political representative and one technical expert, both nominated by the relevant ministries. The Chairs and the secretariats of the Level 2 committees are provided by the Commission (Quaglia *politics* 272). In order to ensure close links between the Level 2 and the Level 3 committees, the chair of the corresponding Level 3 committee participates in the meetings of the Level 2 committee. He may fully participate in the discussion but has no formal voting rights. The only difference in the membership structure of the Level 2 committees is that observer status is explicitly bestowed upon the ECB by the decision establishing the EBC.

LEVEL 3 – FOSTERING SUPERVISORY COOPERATION AND CONVERGENCE:

The three Level 3 Committees were to serve as independent advisors to the actors at Level 1 and Level 2 and foster supervisory cooperation and convergence. Through this, they were intended to contribute to the creation of an EU-wide consistent financial regulatory framework. The advisory function of the committees was to be carried out either on the

⁴ see Council Decision 1999/468/EC

⁵ as decided in the Treaty of Nice: Germany 29, France 29, Italy 29, United Kingdom 29, Spain 27, Poland 27, Romania 14, Netherlands 13, Belgium 12, Czech Republic 12, Greece 12, Hungary 12, Portugal 12, Austria 10, Bulgaria 10, Sweden 10, Denmark 7, Ireland 7, Lithuania 7, Slovenia 7, Finland 7, Estonia 4, Cyprus 4, Latvia 4, Luxemburg 4, Slovenia 4 and Malta 3

committees' own initiative or on the Commission's request. In the latter case, the Commission would lay down a timeframe in which the committees' had to deliver their advice (**Article 2**). Each Member State was to designate one high-level representative of their national public authorities responsible for the national supervision of the securities sector. The delegates of the Member States had voting rights and were to elect the Chair of the Committee from among their numbers. In order to ensure the presence of the Commission it was decided that the Commission would designate a high-level representative, who would be entitled to participate in the Committee's debates but did not hold voting rights. Apart from these permanent members, the committees' had the right to invite external experts and observers to participate in their debates (**Art 3**). It was further determined that the committees had to cooperate closely with the Commission and the Level 3 committees (**Article 4**). The committees were supported by their secretariat. The members of the secretariat were appointed by the Committee or the Chair and were to „prepare the minutes of the meetings, assist the Committee, the Expert Groups, the Permanent Groups and the Members and Observers in their functions“ (**REFERENCE**). Moreover, the secretariats had the important function of coordinating the consultation processes with the public.

The decisions establishing the Level 3 committees were redrafted in 2007. The new decision significantly extended the tasks of the Level 3 committees.⁶ In 2009, the committees were upgraded into the European Supervisory Authorities. This upgrade further increased their tasks, but also granted them additional competencies and powers.⁷

LEVEL 4

Level 4 of the Lamfalussy Process has been concerned with the punctual and correct implementation of agreed EU legislation in the Member States. The main actor at Level 4 is the Commission. In order to facilitate the task at Level 4, the Commission has been closely working together with national authorities. This included the organisation of transposition workshops and issuing guidance for the national regulators. The Commission has the right to initiate infringement procedures against any Member States which fail to timely transpose agreed EU legislation. Through the reform of the Level 3 bodies subsequent to the financial crisis, their tasks now include some provisions which are intended to aid the Commission at Level 4.

⁶ see 2007 review

⁷ see new system

THE DEVELOPMENT OF THE EU SUPERVISORY SYSTEM

When the CESR was created as the first Level 3 committee in 2001,⁸ it had a purely advisory role. The Committee's operational arrangements and rules of procedure were entirely self-determined (Article 7). The CESR was obliged to „present an annual report to the Commission“ (Article 8) and had to consult market participants „extensively and at an early stage“ in „an open and transparent manner“ (Article 5) prior to submitting its advice to the Commission.

In December 2002, the Council invited the Commission to extend the Lamfalussy process to the banking and occupational insurance sector and to establish the corresponding committees as soon as possible. In November 2003, the Commission instituted the two new Committees at Level 3.⁹ The legislative framework, general objectives and structure of the new committees was in large parts identical to the CESR's. Just as the CESR, the CEBS and CEIOPS were independent advisory bodies and each committee was to „adopt its own rules of procedure and organise its own operational arrangements“ (Article 7). Both were to consult the public prior to submitting advice, present an annual report to the Commission, had the right to instigate independent working groups, could invite observers and experts, appoint their secretariat and were to keep close links to the Commission.

There were, however, some notable differences. Whereas the CESR had only an advisory role, the CEIOPS and the CEBS were explicitly charged with promoting the convergence of supervisory practices, contributing to the consistent application of EU legislation and facilitating the exchange of information (Article 2). The tasks of CEBS and CEIOPS differentiate insofar as the CEIOPS was to provide a forum for supervisory cooperation whereas the CEBS was charged to actively enhance supervisory cooperation. Moreover, the membership structure of the new committees was slightly different due to sectoral peculiarities. The CEBS and CEIOPS Decision also contained explicit provisions restricting the participation in discussions which concerned confidential information on a supervised institution.

3L3 JOINT COMMITTEES

In 2005, the CESR, the CEIOPS and the CEBS agreed on a Joint Protocol on Cooperation, which was termed the „3L3 work programme“ (OECD 96). The programme was initiated to

⁸ Commission Decision 2001/527/EC

⁹ CEIOPS (2004/6/EC) and CEPS (2004/6/EC)

establish cross-sectoral cooperation and information exchange. The focus of the Joint Protocol was in particular on the supervision of the rising number of financial conglomerates and on establishing cross-sectoral consistency between the work of the Level 3 committees (OECD 96). The Protocol identified several common interests of the Level 3 committees, among them information sharing, experience exchange, reduced supervisory burdens and achieving functional harmonisation of the committees. In consideration of the different objectives and tasks of the committees, the cooperation arrangements were primarily of a practical nature. The main facilitators of contact and cooperation were the Chairs of the committees. The Joint Protocol obliged the Chairs to meet two or three times a year in order to discuss topics of common interest and set common priorities. In their work, the Chairs were supported by the Secretariats, which were to establish contact several times a year in order to exchange information of common interest. Moreover, every secretariat would receive detailed information on the proceedings in the other committees in form of minutes and other documents (Article 2). In order to increase cross-sectoral awareness of the members of the committees, the Joint Protocol mandated the committees to organise cross-sectoral training sessions. The 3L3 agreement was an important step towards supervisory cooperation, however, its voluntary nature and lack of legal foundation rendered it less effective than hoped for.

REVIEW OF THE LAMFALUSSY PROCESS 2007

In 2007, the Commission published a review of the Lamfalussy process.¹⁰ Overall, the Commission was pleased by the achievements of the framework. It especially highlighted the reduction in time necessary to adopt measures at the EU level. However, the Commission also clearly stated that „future evidence-based practical improvements“ (Commission *Review 3*) and greater supervisory cooperation and convergence between the Member State authorities were essential to keep pace with the rapid developments and continuing integration of the financial markets.

The Commission strongly criticised the practice of gold-plating¹¹ and the tendency for regulatory arbitrage¹² among the Member States. As a solution, the Commission suggested to increasingly use regulations as policy instrument of choice and restrict the discretion of the Member States. The Commission also called for rules obliging Member States to „justify rigorously any regulatory additions or add-ons [...] in cases where such latitude is possible“ (Commission *Review 5*).

¹⁰ Review of the Lamfalussy Process: Strengthening Supervisory Convergence

¹¹ Member States impose more stringent legislation than they would have to

¹² Companies can move to the Member State with the least intrusive regulations

A key area for improvements identified by the Commission was the cooperation amongst supervisors and the convergence of supervisory practices. To foster and enhance these aspects would have been primarily the task of the Level 3 committees ,however, the Commission found that the committees did „not seem to be fully equipped to deliver what has been expected of them” (Commission *Review 7*). Especially the fact that representatives of the national supervisors on the Level 3 committees were inclined to favour their national obligations above their European responsibility was a concern addressed in the review. The Review stated that „if supervisors’ obligations under their national law conflict with non-binding measures pursuant to Level 3, supervisors will let national obligations prevail“ (Commission *Review 7*). Due to the national accountability and loyalty of committee members, they were inclined to favour national interests and therefore slow down or obstruct progress on the common regulatory framework.

In order to improve the efficiency of the committees, the Commission suggested that they should be given specific objectives which they had to achieve in a given timeframe. Moreover, the Commission called for charging the Level 3 committees to report more detailed on their progress and oblige them to explain themselves if they did not reach their targets. The review also called for a provision which would oblige the committees to identify „any recalcitrant supervisors“ (Commission *Review 7*). In case the Level 3 committees failed to reach their objectives and the implementation of an initiative had to be considered as a failure, the Commission identified three possible procedural options. First, the initiative would be terminated. Second, the Commission would create a comotology measure at Level 2. The prerequisite for this case would be the possibility to adopt the measure under the Level 1 mandate. Finally, if the second option was not feasible and the measure was regarded as sufficiently important, its realisation should be considered by the Level 1 legislators. In addition, the Commission called on the Member States to include a provision in the charters of their supervisory authorities which would make it obligatory for them to cooperate with other national supervisors and therefore prevent them to a certain degree from obstructing EU initiatives.

Another point of critique was the inconsistent and unclear formulation of the regulatory measures establishing the Level 3 committees and their tasks. The only task clearly established was providing advice to Level 1 and Level 2. Only the CEBS and the CEIOPS were charged to contribute the consistent implementation and convergence of supervisory practices. The task to strengthen supervisory cooperation was even more restricted and only the CEBS had reference to it in its founding document. The Commission proposed to modify

the „relevant Level 1 directives to significantly strengthen cooperation requirements and to enhance the supervisory competencies of the three Level 3 committees“ (Commission *Review* 8).

Moreover, the Commission criticised the decision making process the Level 3 committees had decided on. In general, the committees made their decisions based on consensus, requiring a unanimous decision. Only on technical advice to the Commission did the committees use the qualified majority voting system. Whereas the unanimous vote guaranteed widespread acceptance of the passed measures , it often resulted in watered-down and ineffective initiatives. For the Commission it was „essential to further enhance efficiency and effectiveness of the decision making procedures of the Level 3 committees“ (*Review* 9). Therefore, it recommended the introduction of obligatory application of the qualified majority vote in certain areas. As the Level 3 committees were to adopt their own rules of procedure, the Commission declared it would be their task to change their charters in this respect. However, the Commission threatened to pursue a change of the committees’ legislative frameworks if they failed to comply with the proposal. Moreover, the Commission called on the Level 3 committees to reach an internal agreement by which minorities would have to accept the will of the majority instead of blocking proposals. In addition, the Commission suggested the inclusion of some sort of disciplinary measure in the committees’ charters .This would enable the committees to effectively deal with committee members who failed to comply with majority decisions.

Finally, the Commission argued that the decisions of the committees were by far not as influential as envisaged by the Lamfalussy Committee. Numerous day-to-day supervisory measures agreed upon at Level 3 were implemented inconsistently or not at all by the Member States. Often the Member States authorities issued guidance which diverged from the guidance issued by the Level 3 committees. The Commission found that despite the previous efforts large areas remained unharmonised and national practices were still favoured over European approaches.

The Commission identified the non-binding nature of the Level 3 provisions as one of the main weaknesses of the regulatory framework. As the Lamfalussy Committee had done before, the Commission explicitly expressed the need to provide the Level 3 committees with regulatory powers of their own. However, the Commission acknowledged that this option was not realistic due to widespread political opposition regarding the centralisation of power at the EU level. Instead the Commission called on the Member States to respect the independence of

their representatives and „request their supervisors/regulators to agree to full application of Level 3 common standards and guidelines“ (*Review 10*).

2009 Redrawing of the Committees

The review of the Lamfalussy process eventually led to three Commission Decisions¹³ which redrew the Level 3 committees' competencies and responsibilities. Many of the proposals and calls voiced in the review were taken into account, most obviously, the harmonisation of the legislation establishing the Level 3 committees themselves. The competences and the tasks given to the committees were almost identical. The primary tasks were to „contribute to the common and uniform implementation and consistent application of Community legislation by issuing non-binding guidelines, recommendations and standards“ (Article 3) and to „enhance cooperation between national supervisory authorities“ (Article 4). The committees were also given a set of additional, clearly defined tasks such as to mediate between supervisor, to actively promote information exchange and the delegation of tasks between supervisors, to ensure the functioning of the colleges of supervisors, to contribute to common supervisory reporting standards and to review the practical application of guidelines, recommendations and standards. The Level 3 committees also received the task to „developed new practical convergence tools to promote common supervisory approaches“ (Article 4). Additionally, the committees were charged to enhance the cross-sectoral consistency of their work. This was to be achieved by organising and participating in „sectoral and cross-sectoral training programmes“ (Article 6 Para 2). These programmes aimed at developing sectoral and cross-sectoral practises and competencies throughout the European supervisors. Moreover, the committees were to ensure consistency through close and continuous cooperation with the other Level 3 committees. To ensure the necessary high-level contact, the Chairs of the committees were charged to meet at least once a month (Article 9). The new legislation significantly increased the scope of the committees. This is especially true in the case of the CESR, which prior to the new regulation had only advisory competencies .

Apart from increasing the scope of the committees, the new legislation also intended to render them more transparent and accountable. For this reason, the reporting obligations of the committees were increased and a formal obligation for identifying yearly targets was included in the legislation. In terms of reporting standards, the committees were now obliged to produce two reports a year instead of one. Moreover, these reports were to be more detailed than in the past and needed to include information on „micro-prudential trends, potential risks

¹³ Directives 2009/77/EC (securities), 2009/78/EC (banking), 2009/79/EC (insurance)

and vulnerabilities“ (Article 5 Para 4). Additionally, the committees were charged to assess the convergence in supervisory practices in the Union. This assessment was to be a continuous process and the committees had to produce a yearly report describing in detail their achievements and explaining their failures. The lack of detailed working plans and targets for the committees was addressed by required the committees to draw up yearly plans which specified targets in detail. However, neither disciplinary measures nor an explanatory duty in case of failure to achieve the targets was referred to in the legislation and the fact that the committees were to determine their own targets somehow restricted the impact of the obligation.

Finally, the decisions explicitly called for a change of the decision-making process in the committees. While still promoting consensual decision making, the committees were now required to use the qualified majority voting procedure. This enabled them to take decisions, even if no consensual agreement could be reached. Moreover, the Commission called for inclusion of a provision in the committees’ charter which formally obliged opposing minorities to bend to the will of the majority and adhere to the decisions. Members of the committee who failed to „follow the guidelines, recommendations, standards and other measures agreed“ (Article 14) on by the committees could be called on to explain their non-compliance.

EVALUATION OF 2009 CHANGES

Whereas the extension of the competencies and tasks of the Level 3 committees called for greater cooperation between supervisors and convergence of supervisory practices, it did not address one of the greatest weaknesses of the Level 3 committees – the lack of binding powers. The complete reliance on soft-law instruments resulted in initiatives of the committees lacking the necessary force and „despite the increasing integration and interdependence, financial supervision in Europe still remained almost exclusively a Member State affair“ (Verhelst 5) after the reform. Moreover, while the European Member States clung to their supervisory powers, the national financial institutions spread internationally and the national supervisors lost the ability to provide effective supervision. Even though initiatives such as the institution of colleges of supervisors attempted to address this problem by improving cooperation and information exchange between national supervisors, the continuously voluntary nature of these initiatives impeded their effectiveness.

The reform did not noteworthy improved the potential for harmonisation, as the main weaknesses of the framework were left untouched. The continuing reliance on directives as

legislative instrument of choice still allowed the Member States to adapt the framework as it suited them best. This and the lack of power to enforce initiatives were the main obstacles to achieving harmonisation throughout the EU. Apart from stating its inappropriateness, the new legislation ultimately did little against gold-plating and regulatory arbitrage. The EU measures had resulted in an approximation of the financial regulatory frameworks and the supervisory arrangements; however, despite having to adopt the same standards, Member States discretion resulted in the regulatory landscape across the EU being far from presenting a level playing field.

The cooperation between supervisors was also not significantly improved. While the committees were officially charged to improve cooperation and mediate between the supervisors, they were lacking the power to enforce any measures. The direct cooperation between the national supervisors remained insufficient. Especially in the context of cross-border institutions, the lack of cooperation stands out. In theory, the home supervisor and the host supervisors were to work together. In practice, however, the home country supervisors did not need to cooperate with host country supervisors as ultimately the decision making power lay with them alone.

FINANCIAL CRISIS – DELAROSIER

The international financial crisis was caused by numerous interacting reasons. In the decade before the crisis, the financial markets enjoyed the benefits of substantial amounts of available liquidity in combination with low interest rates. This climate encouraged debt-making on personal as well as on national levels. In the USA, where the crisis originated, personal savings in percentage of disposable income fell from 7 per cent in 1990 to below zero in 2005 and 2006. The technological advancements and the concomitant financial innovations „amplified and accelerated the consequences of excess liquidity and rapid credit expansion“ (de Larosière 7). The accumulation of debt was further reinforced by US housing policies, which created a significant housing-bubble. The US policies aimed at promoting home ownership among low income households. Strong political pressure on „government sponsored entities (GSEs) like Fannie Mae and Freddy Mac“ (de Larosière 7) in combination with an under-regulated system of mortgage lending and debt securitization led to rapidly expanding amount of mortgages, in particular subprime mortgages.¹⁴ Subprime mortgages in

¹⁴ Mortgages which are less likely to be repaid due to the financial situations of the debtor. Subprime mortgages pose a greater risk for the lender, therefore more interest is charged on them and terms and conditions are less favourable.

the USA increased almost threefold from \$180 billion to \$625 billion in 2001 and 2005, respectively.

Simultaneously, a number of developing countries with surpluses, notably China, began to invest heavily in US government securities. As a result, the profitability of these bonds decreased and many investors turned to riskier financial products to generate sufficient profit. As a result of the increasing risks, market participants tried to spread risks and continuously developed new and increasingly complex and opaque techniques and instruments of securitization. The spreading of risk and securitization of assets are generally viable principles. However, both market participants and regulators greatly misjudged the risk and the treacherous structure of some securitization instruments (de Larosière 8).

Prior to the crisis, it had become common practice to securitize by means of mortgage backed securities and collateralised debt obligations. Whereas the securitization and risk spreading through these instruments appeared sufficient on the surface, the poor quality of the underlying assets was not recognised or the threat underestimated. Moreover, the complex nature of the securitization instruments greatly reduced the transparency of parts of the financial markets. This led to many actors having „little knowledge of either the size or location of credit risks“ (de Larosière 8).

The „perverse incentives“ (de Larosière 9) created by the originate-to-distribute system further increased the poor quality of the assets constituting the basis for mortgage backed securities and collateralised debt obligations. Lenders who knew that they would sell their entire credit default risk to someone else had little incentive to ensure high standards of lending. Moreover, corporate governance structures and shareholder pressure motivated market participants to take excessive risks. The entire financial industry, from remuneration and incentive schemes to accounting standards, increasingly favoured short term profit over long term stability (de Larosière 30).

Credit Rating Agencies (CRAs) also played an important role in amplifying the downward spiral and decreasing the awareness of potential default risks. Many structured financial instruments, such as senior tranches of collateralised debt obligations, were given AAA ratings despite the weakness of their underlying assets. AAA ratings are normally given to extremely safe assets with very low default risks, such as government securities or highly reliable corporate bonds. The inappropriate evaluation of the default risks by CRAs can be largely attributed to inaccurate rating methodology and to conflicts of interests originated in the organisational structure of CRAs. CRAs are profit-orientated companies which offer a service and operate in a competitive market. Their paying customers are the issuers of the

rated. In theory, ratings are indicating the objective reliability of bonds. In practice, however, the unregulated nature of the market for ratings enabled issuers to choose the CRA which guaranteed them an AAA rating. The demand for AAA ratings was further increased by some regulators demanding that investors only invest in AAA-rated assets.

The financial sector is an industry which relies to a large extent on mutual trust. The financial crisis had such a devastating impact because a large part of this trust was destroyed. When the US Government refused to save Lehman Brothers and CRAs suddenly began to downgrade their ratings, it came to „a wide-spread breakdown of trust and a crisis of confidence“ (de Larosière 12). This was further reinforced by the lacking transparency of the market and the internationalisation of finance. Investors and banks did simply not know which institutions were still reliable and financially sound and which had amassed large amounts of low-quality assets and were in danger of going bankrupt. As a result, inter-institutional money lending virtually stopped, „thus creating a large scale liquidity crisis“ (de Larosière 12) which further amplified the scope of the crisis.

EU SUPERVISORY FAILURE

Whereas the EU supervisors are not directly responsible for most of the causes of the financial crisis, the inadequacy of EU supervisory and regulatory framework played an important role in the manifestation and the course of the crisis. In order to address the individual flaws of the framework, the Group divided the duties of the supervisors in the EU into three main tasks – implementation and harmonisation of rules, prevention of crisis manifestation and management of crises. Unfortunately, the crisis showed that the EU framework was not set to fulfil any of these tasks satisfactorily.

The regulatory and supervisory framework was not harmonised in many important areas. Indeed, one of the most serious problems identified by the de Larosière Group was the „lack of a consistent set of rules“ (27). The main reason for this lack of cohesion had been national discretion in interpreting and implementing EU legislation. The actors involved in the harmonisation process, such as finance ministries, national supervisors and central banks, often did not trust each other and/or did not share the same goals. Fierce competition between national financial centres made matters even worse. Whereas the Member States had committed themselves to work towards harmonisation, the practice looked different. The problem posed by the lack of harmonisation had been already identified in the Lamfalussy

Report and the Commission Review, which had explicitly pointed to it as one of the major flaws of the European financial framework. Despite the warnings, the core problems had not been eliminated. These problems were the predominant use of directives at Level 1 and Level 2 of the Lamfalussy framework and the weakness of the Level 3 committees. Whereas the use of directives had left Member States „a range of national options“ (de Larosière 27) and resulted in widespread gold-plating and regulatory arbitrage, the Level 3 committees had not the necessary competencies to effectively promote harmonisation, let alone to enforce common rules throughout the EU.

The flaws in the crisis prevention and early warning mechanisms were significant. Especially the lack of a macro-economic level of supervision greatly impeded the ability of supervisors to detect and prevent the crisis. Even though there had been some warnings about the macro-prudential risks in the financial sector, no remedial measures were initiated as the supervisory system did not contain mechanisms to translate such warnings into action. Because of micro-centred viewpoint of supervisors „too much attention was paid to each individual firm and too little to the impact of general developments on sectors or markets as a whole“ (de Larosière 10). However, grievances at the micro-level also played a significant role in the failure to detect the crisis before its manifestation. Especially information sharing among supervisors was severely underdeveloped, as national supervisors were reluctant to cooperate and „not prepared to discuss with appropriate frankness and at an early stage the vulnerability of financial institutions they supervised“ (de Larosière 41). In combination with the lack of harmonised reporting standards, this resulted in an inability to effectively determine the degree to which some financial institutions „had accumulated [...] exceptionally high exposure to highly complex, later to become illiquid, financial assets“ (de Larosière 10). This reluctance was especially pronounced in case of cross-border institutions. Host supervisors who at least partially realised the seriousness of the situation had no means to gain adequate information on financial institutions or to challenge the authority of the home supervisor. The shortcomings of the EU framework and of the organisation of the Level 3 committees are conspicuous. The national authorities were too centred on the national financial institutions and too protective of the national financial systems to take a European dimension in consideration and the EU bodies were too weak to effectively address this problem.

The financial crisis showed that the ability to initiate multinational actions was severely underdeveloped among EU Member States. Member States predominantly opted for national solutions which were ultimately intended to save the national financial systems, regardless of the interconnectedness of the financial actors and the ramifications of the measures for other Member States. In the few cases in which cooperative solutions were attempted, they were ineffective, uncoordinated or impossible to realise (Verhelst 15). In other cases, the voluntary nature of the cooperative agreements nullified their effects, as actions agreed upon between the supervisors were simply not abided by the individual Member States (Verhelst 15). This is partially attributable to the national authorities' different scopes of competencies, which highly diverged across the EU. However, the major reason for the lack of common crisis management was that the national supervisors were unable to agree on decisive multinational actions. Essentially, facilitating exactly this kind of cooperation would have been the tasks of the Level 3 committees. However, they had neither the resources nor the competencies necessary to effectively devise and initiate EU-wide solutions. The problem was further reinforced by „little consensus among policy makers and regulators at the highest level on the seriousness of the problem or on the measures to be taken“ (de Larosière 11). In the end, the committees were unable to contribute effectively to the management of the crisis and swift, decisive, coordinated and effective actions of supervisors did not take place.

DELAROSIERERECOMMENDATIONS

A highly important point made by the de Larosière Group was the pronounced difference between, but the equal importance of macro-prudential and micro-prudential supervision. These two supervisory concepts are intrinsically interlinked but comprise different tasks and objectives. Micro-prudential supervision concentrates on the individual financial entity and aims to protect the stakeholder involved with the entity. Macro-prudential supervision, however, is focused on the stability of the financial system as a whole in order to „protect the overall economy from significant losses in real output“ (38). The two supervisory dimensions are highly interdependent and must complement each other in order to guarantee systemic stability. There can be no effective macro-prudential supervision if the supervisors at this level have no means of influencing micro-level processes; simultaneously, without being aware of and considering macro-level trends, micro-prudential supervisors cannot effectively fulfil their duties.

In order to create effective mechanisms for macro-prudential supervision, the Group recommended the creation of a new supervisory body at EU level. Among other details

specified in the de Larosière Report, the Group identified two crucial prerequisites for the effective functioning of the proposed body. First, the sharing of information between micro-prudential and macro-prudential supervisors must be mandatory. Second, mechanism must be introduced which guarantee early identification of risks and the subsequent translation of these warnings into action (de Larosière 46).

In terms of micro-prudential supervision, the Group called for a significant reform of the existing system. Whereas the Group acknowledged the Level 3 committees' contribution to the financial integration process, it pointed out that the committees are not able to fulfil their tasks without extending their competencies. For this reason, the Group proposed to upgrade the Level 3 committees into formal EU authorities. The new authorities' tasks would include to „coordinate the application of common high level supervisory standards, guarantee strong cooperation with other supervisors and [...] guarantee that the interests of host supervisors are properly safeguarded“ (de Larosière 47). In order to be able to fulfil these tasks and respect the principles of the EU, the new authorities' „work must be independent from the political authorities, but fully accountable to them“ (de Larosière 479). The Group identified several key provisions necessary to facilitate these aspirations. The envisioned authorities should be equipped with a clear mandate, a defined set of tasks, an own budget and sufficient legal powers. Especially the legal powers were identified as being of utmost importance and should include a binding mediation role, licensing and supervision of CRAs, legally binding interpretation powers for Level 1 and Level 2 measures and the power to supervise and sanction national supervisors. In addition, the Group strongly recommended the expansion of the system of colleges of supervisors. They proposed to make colleges mandatory for every cross-border financial institution operating within the EU and attribute an important role in the colleges to the new authorities.

THE NEW SYSTEM

The de Larosière Report proved to be highly influential and the EU Institutions realised many of its recommendations, including a major reform of the supervisory framework at the EU level, which created the European System of Financial Supervision (ESFS). Most notably, the ESFS has both a macro-prudential and a micro-prudential supervisory dimension. At the macro-prudential supervisory level, the European Systemic Risk Board (ESRB) was established. At the micro-prudential level, the supervisory framework was rearranged and the Lamfalussy Level 3 committees were formally upgraded into European Supervisory

Authorities (ESAs), which are equipped with more power and greater competencies than the original Level 3 committees.

The ESRB

The European Systemic Risk Board is a completely new body in the European supervisory configuration. The main objectives of the ESRB is to „contribute to the prevention or mitigation of systemic risks to financial stability in the Union“ (EU Regulation No 1092/2010, Art. 3). The ESRB has been charged to collect and analyse all necessary information to identify systemic risks, to issue warnings and recommendations and to work in close cooperation with all the members of the ESFS. The current tasks of the ESRB can be further expanded by means of EU legislation. However, despite the highly important task of the ESRB, it has not been given a legal personality or binding powers.

Due to the absence of regulatory powers, the „diverse internal structure [...] is all the more important“ (Verhelst 21). The ESRB is composed of five departments. The main decision making body is the General Board, which is guided by the Steering Committee. General Board and Steering Committee are advised and supported by the Advisory Technical Committee, the Advisory Scientific Committee and the Secretariat. The organisational structure of the ERSB was designed to enable the General Board to arrive at decisions based on the highest possible amount of information and expertise.

The ESRB is chaired by the President of the ECB. However, the ECB chairmanship is limited to a five-year period, after which a permanent procedure for choosing the Chair is to be determined (Article 5). The reason for this arrangement is a compromise between the EP and non-eurozone Member States. Whereas the EP had strongly argued in favour of the ESRB being chaired by the ECB President, non-eurozone Member States had opposed this arrangement. They argued that the ECB was likely to favour a eurozone-friendly approach which would result in them being disadvantaged (Verhelst 22). As part of the bargain, the first Vice-Chair will represent the non-eurozone Member States. The second Vice-Chair is the Chair of the Joint Committee of the ESAs.

The General Board

The General Board is the main body of the ESRB and responsible for deciding on the actions the ESRB is going to take. It is to meet at least 4 times a year, with all the members being

obliged to participate personally. There can be additional meetings if the Chair or at least one third of the members regards them as necessary (Art 9/1).

One of the goals in creating the ESRB was to create a body including all supervisors. Consequently, the number of members on the General Board is relatively large. Altogether, there are 66 members, of which 37 have voting rights. As specified in Article 6 of the Regulation, members with voting rights are:

- the President and the Vice-President of the ECB
- the Governors of the national central banks
- a representative of the Commission
- the Chairs of the ESAs
- the Chair and the two Vice-Chairs of the Advisory Scientific Committee
- the Chair of the Advisory Technical Committee

The non-voting members of the General Board are the President of the Economic and Financial Committee (EFC), the Head of the Secretariat and representatives of the competent national authorities. If the national authorities cannot agree on a common representative, their membership on the General Board is to rotate according to the sector under discussion.

By rule, the General Board takes decisions by simple majority. The sole exception is when the General Board wants to make a recommendation or warning public. To take this step, two-third of the voting members must cast their vote in favour of the initiative (Article 10).

The Steering Committee

The task of the Steering Committee is to prepare the meetings of the General Board, to review the documents to be discussed in the meetings and to monitor the ESRB's progress. The Steering Committee consists of selected members of the General Board. As defined in Article 11, these members are:

- the Chair and the Vice-Chair of the ESRB
- the Vice-President of the ECB
- four members of the General Council of the ECB (balanced representation of eurozone and non-eurozone Member States must be guaranteed)
- a representative of the Commission

- the Chairs of the ESAs
- the President of the EFC
- the Chair of the Advisory Scientific Committee
- the Chair of the Advisory Technical Committee

Additionally, the Head of the Secretariat attends the meeting as non-voting participant. The Steering Committee meets previously to every meeting of the General Board, which is at least four times a year. The Steering Committee “is likely to play a crucial role in the functioning of the ESRB“ (Verhelst 23) as it effectively determines the agenda of the General Board’s meetings.

The Advisory Technical Committee (ATC)

The ATC’s task is to provide the ESRB with advice and assistance (Article 13). In more specific terms, the ATC will advise the ECB on draft regulation reports it produces for the ERSB, prepare the analytical grounds for meetings of the General Board and the Steering Committee, monitor the use of macro-prudential tools by the Member States, and review the effectiveness of these tools (ATC mandate 1). The ATC will be composed of over 60 experts who are determined by Article 13 of the ESRB Regulation. The members are:

- a delegate of each central bank
- a representative of the ECB
- a representative of the competent authority of each Member State (sectoral representatives rotate seat if the national authorities cannot agree on a common representative)
- one representative of each ESA
- two representatives of the Commission
- a representative of the EFC
- a representative of the Advisory Scientific Committee

The Chair will be designated by the Chair of the ESRB and participate in the meetings of the Steering Committee and the General Board.

Advisory Scientific Committee (ASC)

The ASC is focused on contributing „to the delivery of the ESRB’s task through analytical and consultative tasks“ (ASC Mandate). This includes continuous revision and

improvement of methodologies used for detecting systemic risks and assessing their possible magnitude and the development of macro-prudential and analytical tools and models.

Moreover, the ASC is to consult the ESRB on policy framework enhancements by means of „an open, independent and analytical review of macro-prudential strategies and operational frameworks“ (ASC Mandate).

The ASC will be composed of the Chair of the ATC and 15 independent experts, which are nominated for a period of four years and can be nominated for consecutive terms. These experts cannot be members of the ESAs and should present various backgrounds and sectors, such as academia, trade unions, small and medium-sized businesses, financial institutions and consumer organisations (ASC Mandate). The ESRB publicly encouraged applications for the positions. Ultimately, the Steering Committee will propose the candidates to the General Board, which will decide on the appointments (ESRB Regulation Article 12)

The Secretariat

The Secretariat is to assist the other departments and takes care of the day-to-day business of the ESRB. The entire staff of the Secretariat are employees of the ECB. Moreover, the ECB directly appoints the Head of the Secretariat, who has an important function and takes part in all the discussions of the Steering Committee and the General Board. The ECB's power in the ESRB has been greatly enhanced by this arrangement and non-eurozone Member States have raised their concerns. As it was the case with the ECB's chairmanship in the ESRB, non-eurozone Member States fear that the prominent role of the ECB will result in a disproportional focus on the euro-zone and disadvantage Member States outside the monetary union (Verhelst 23).

TASKS OF THE ESRB

The ESRB's main task is the macro-prudential supervision of the European financial system. It is to „contribute to the prevention or mitigation of systemic risks [...] taking into account macro-economic developments“ (Art. 3 Para. 1). In order to achieve this ambitious goal, the ESRB has been assigned a set of specific tasks and obligation.

First, the ESRB needs to determine, collect and analyse all the necessary data and use this information to identify and prioritise systemic risks (Art.3 Para. 2). Second, if the ESRB identifies a systemic risk, it is responsible for issuing warnings on the risks and recommendations on possible counter-measures. If the ESRB deems it necessary, it is to make these warnings and recommendations public. Moreover, the ESRB is to monitor and evaluate

if the warnings are heeded and the counter-measures are initiated in the way the ESRB envisioned them. Third, the ESRB must closely cooperate with other authorities, be they national, European or global. The cooperation must be especially pronounced with the ESAs and the ESRB is to participate in the Joint Committee of the ESAs. The ESRB's is to share information with the ESAs and co-develop a „common set of quantitative and qualitative indicators (risk dashboard) to identify and measure systemic risk“ (Art. 3 Para. 2). Finally, the ESRB is to confidentially notify the Council of any imminent threat to financial stability and provide advice and a detailed assessment of the situation. Based on the data provided by the ESRB, the Council will decide whether or not to declare an emergency situation (Art. 3 Para. 2)

Collection and Exchange of Information

The sharing of information had been one of the major weaknesses in the pre-crisis framework. In order to improve on this account, the new system has specific rules on how to acquire and share relevant data. The ESRB is obliged to receive „all the information necessary for the fulfilment of its task in accordance with Union legislation“ (ESRB Regulation Art. 15 Para. 2). This information must be provided by national supervisors, the ESAs, the Commission, national statistics authorities and the European System of Central Banks (ESCB). In turn, the ESRB is to provide all necessary information on systemic risks to the relevant ESA and the Council. However, any information provided to the ESRB must be „in summary or aggregate form such that individual financial institution cannot be identified“ (Art. 15 Para. 3). Moreover, the ESRB has not been given any tools to raise information on its own but „relies completely on data raised by external sources“ (Verhelst 25) and it is obliged to keep to strict procedural rules for obtaining information. First, the ERSB is to process existing data provided at the EU level by the ESCB or the European Statistical System (Art. 15 Para. 4). If the available data proves to be insufficient, the ESRB can request data from the ESAs. If this does not deliver the desired results, the ESRB can „request the information from the ESCB, the national supervisory authorities or the national statistics authorities“ (Art. 15 Para. 5). If the necessary information cannot be provided by any of these institutions, the ESRB can request it directly from the concerned Member State. The only possibility for the ESRB to obtain information on an individual financial institution is to file a formal request outlining the systemic relevance of the information. Additionally, the ESRB cannot file a request without prior approval of the relevant ESA (Art. 15 Para. 6/7). These arrangements have been seen as a possible handicap to the ESRB's efficiency (Verhelst 25).

Warnings and Recommendations

Warnings and recommendations are the tools given to the ESRB. Whenever the ESRB identifies a risk to financial stability it has to issue a warning and it may issue recommendations on counter measures. The ESRB can address its warnings or recommendations to different levels. They may be addressed to the whole EU, the Commission, the ESAs, the Member States or the national supervisory authorities. However, the ESRB cannot issue warnings or recommendations to individual financial institutions, regardless their size or systemic importance (Art. 16 Para. 1 and 2). In general, the warnings and recommendations are confidential and only the addressees, the Council and the Commission are informed of their issuing. The recommendations and warnings are non-binding and the ESRB has no means of enforcing particular actions based upon them. The only possibility to attribute more weight to the warnings and recommendations is to make the names of their addressees and their content public. However, this hardly is a substitute for binding powers. Moreover, concerns have been raised that publicising warnings or recommendations may have unintended and dangerous „side effects, such as panic in the financial market“ (Verhelst 26).

If the ESRB issues recommendations, the addressees must report back to the ESRB and the Council and explain their actions in detail. If the ESRB finds that the actions were insufficient it is to „inform the addressees, the Council and, where relevant, the European Supervisory Authority concerned“ (Art. 17 Para. 2) of its opinion. If a reaction to a publicised recommendation is judged insufficient by the ESRB, the EP may invite the Chair of the ESRB to elaborate the reasons for the judgement. The addressees of the recommendation may request to be allowed to participate in the hearing and to elaborate their position.

There are some serious drawbacks in the organisation of the ESRB, most notably the absence of binding powers. Some coercive power has been attributed to the ESRB by means of the explanatory obligations on account of the addressees and the option to publicise warnings and recommendations. The legal obligations of EU Institutions and national supervisors to cooperate with the ESRB also strengthen it to some degree. However, considering the complex task of the ESRB, it is questionable if these provisions will be sufficient. Verhelst argues that the ESRB will have to „rely for a major part on its reputation, instead of coercive powers“. This reliance on reputational effects has the potential to cause a functional predicament. In order to have a high reputation the ESRB must be careful to issue only substantive warnings. However, if it is overly concerned with making sure to avoid

uncertain warnings it is endangered to issue warnings to late or underestimate the magnitude of a risk.

Generally speaking, the ESRB has been given a highly complex task but it is lacking real power. This could seriously diminish the ESRB's influence, as „assessment of macro-prudential risk remains an intellectually challenging task and policy makers will continue to be doubtful of warnings that could undermine short term growth” (Verhelst 29).

The General Board's size may become another problem for the efficient functioning of the ESRB. Due to the high number of participants it will be a challenging and lengthy process to discuss macro-prudential issues. Moreover, arriving at an effective decision will be even more difficult. Initially, the single majority voting promises a fast and efficient decision-making process. However, as the ESRB has no binding powers, the decisions will need to be a consensus, embraced by the large majority of the General Board's members. If the General Board arrives at a decision which is only supported by a narrow majority, the decision may easily be contested and ultimately even disregarded. The implicit need for consensus might result in watered down compromises which try to accommodate many different interests consequently be less effective (Verhelst 30).

Another notable point is the ERSB's imbalanced representative structure. The ERSB is largely dominated by central banks. In the General Board three out of four voting members are central bankers and the entire Secretariat is staffed and funded by the ECB. The dominance of central banks has limited the sectoral comprehensiveness of the ESRB and hinders „the ESRB's ability to detect and respond to systemic risks“ (Verhelst 30) as this is not necessarily the area of central bankers' expertise. Moreover, financial stability and inflation targeting, a central bank's core objective, may not always be compatible and might lead to conflicts of interest in the ESRB. These conflicts could „could potentially lead to Board members neglecting their responsibilities as members of the General Board, which is for most of them after all only a secondary responsibility“ (Verhelst 30).

MICRO-PRUDENTIAL SUPERVISION

The deLarosière Report caused a significant reorganisation of the micro-prudential supervisory framework. As the Report had called for, the Level 3 Lamfalussy committees were upgraded into the European Supervisory Authorities (ESAs) and incorporated into an overall structure comprising the three ESAs, the Joint Committee of the ESAs and the Board of Appeals. The ESAs are the most important bodies in this framework and were granted own legal personalities and the status of distinct EU authorities. The European Banking Authority (EBA) substituted the CEBS, the European Market and Securities Authority (EMSA) substituted the CESR and the European Insurance and Occupational Pensions Authority (EIOPA) substituted the CEIOPS.

Joint Committee

To ensure efficient inter-sectoral cooperation and supervision of financial conglomerates, the ESAs are to cooperate within the Joint Committee, which is built upon the previous L3L arrangements. The Joint Committee consists of the Chairpersons of the ESAs and, depending on the topic, the Chairs of relevant subcommittees (see Art 57). Moreover, the Executive Directors as well as representatives of the Commission and the ERSB may participate as non-voting members in the meetings. These meetings must be held at least once every two months. Chairmanship of the Joint Committee is to be annually rotated among the Chairs of the ESAs. The Joint Committee should act as a forum for cooperation between the ESAs. Moreover, it establishes an important interface between micro and macro-prudential supervision, as the Chair of the Joint Committee is the Vice-Chair of the ESRB. Due to its frequent meetings, the Joint Committee has the potential to remedy one of the major shortcomings of the previous system and greatly improve cross-sectoral cooperation and information sharing (Art. 54-57).

Board of Appeals

The Board of Appeals is intended to balance the ESAs powers and create a mechanism that allows for the timely contestation of their decisions without a full-blown case in front of the European Court of Justice (ECJ). The Board is to consist of six permanent members „of a high repute with a proven record of relevant knowledge and experience, including supervisory experience“ (Art 58 Para 2) in any of the financial sectors. A list of candidates will be compiled by the Commission and each ESA is to choose two members. The term of office on the Board of Appeals is five years, in which the members must act entirely independent and solely in the interest of the public. Any person, natural or legal, affected by an ESA decision may address an appeal to the Board. Filing an appeal does not suspend an ESA decision. If the Board decides in favour of the appeal, the ESA must adopt the contested measure accordingly to the Board's decision. However, whatever the Board's decision, it may be contested in front of the ECJ.

ESAs

The ESAs are the most important parts of the new supervisory system. Reflecting the commitment for harmonisation and regulatory convergence, the organisational structure of the

ESAs is almost identical. The major actors in an ESA are the Chairperson, the Executive Director, the Board of Supervisors, the Management Board and Stakeholder Groups.

The Chairmanship of an ESA is a full-time position only available to independent individuals. The Chair will be appointed by the Board of Supervisors for a period of five years. His tasks are to prepare the meetings of the Board of Supervisors, preside over the meetings of the Board of Supervisors and the Management Board and take part in the Joint Committee (Art. 48, 49).

The Executive Director must be a full-time individual professional and is appointed by the Board of Supervisors. The main tasks of the Executive Director are the day-to-day management of the ESA and the preparation of the Management Board's meetings. These tasks include drafting and implementing annual work programmes, drafting a multi-annual work programme, compiling a draft report on the ESA's activities and preparing a preliminary draft budget. Throughout his duty, the Executive Director is advised and supervised by the Board of Supervisors and the Management Board (Art. 51-53).

The Board of Supervisors is the primary decision-taking body of an ESA. The voting members of the Board of Supervisors are the Heads of the competent national authorities. Non-voting members include the ESA's Chairperson and Executive Director and representatives of the Commission, the ESRB and the other ESAs. The Board of Supervisors must meet at least twice a year. The members of the Board of Supervisors are legally obliged to put aside any other loyalties and obligations and act solely in the interest of the Union. The Board of Supervisors has numerous tasks. It develops technical standards, issues opinions and recommendations, adopts annual and multi-annual work programmes and appoints the Chairperson and the Executive Director. The decision making process is normally by simple majority. There are some exceptions to this, such as decisions on technical standards, for which a qualified majority is necessary (Article 40-44)

The Management Board is charged with ensuring the efficient functioning of the ESA. It is composed of the Chair of the ESA and six members of the Board of Supervisors. A representative of the Commission also participates in the meetings of the Management Board and has voting rights which are restricted to budgetary affairs. The meetings have to take place at least 5 times a year and prior to every meeting of the Board of Supervisors. The Management Board wields considerable power, as it prepares the meetings of the Board of Supervisors. Through the small number of members, the Management Board can take preliminary decisions quickly and has an important role in guaranteeing the efficiency of the ESA (Article 45– 47)

The Stakeholder Groups provide advice to the ESAs. They are composed of 30 members representing academia, financial institutions and the employees and customers of financial institutions. The members are appointed by the Board of Supervisors for a term of 2 ½ years. The Stakeholder Groups are qualified to advise the respective ESA in all matters and their advice is to be made public. Whereas, the EBA and the ESA have one Stakeholder Group each, the EIOPA has two, one representing the insurance and reinsurance and one the occupational pensions sector (Verhelst 38). Prior to submitting technical standards, the ESAs are obliged to consult the respective Stakeholder Group on their opinion. (Article 37)

TASKS

In general, the ESAs have considerable more competences than the Level 3 committees. However, the „ESAs’ actual powers vary considerably from task to task“ (Verhelst 39). Many of the ESAs’ powers rely considerably on the cooperation of other supervisors and the goodwill of the EU Institutions. Nonetheless, the ESAs also have powers which enable them to take binding decisions, most notably when a state of emergency has been declared.

The tasks of the ESAs include harmonisation of practices and regulations, fostering a common supervisory culture and cooperating closely with other supervisory bodies, especially the ESRB. Moreover, the ESAs are to monitor and assess market developments in their sectors, organise and conduct peer reviews of supervisory authorities and collect all necessary information (Art. 8 Para. 1). The main objective of the ESAs is to develop a single rulebook for the supervision of the European financial market. This rulebook has been defined as „a core set of EU-wide rules and standards directly applicable to all financial institutions active in the Single Market“ (qtd. Council in Verhelst 39). Whereas these are tasks common to all ESAs, the tasks of the ESMA have already been more specified. The ESMA is the only authority able to license CRAs in the EU. European banks and investors are not allowed to use any ratings which are not issued or endorsed by a CRA licensed in the EU (Lannoo 5).

The tools of the ESAs are guidelines, recommendations, implementing technical standards (ITS) and regulatory technical standards (RTS). The purpose of guidelines and recommendations is to establish „consistent, efficient and effective supervisory practices“ (Art. 16 Para. 1). They can be addressed to both supervisory authorities and individual financial institutions. However, they have no binding powers upon the addressees. The addressees are only charged with „making every effort to comply“ (Art. 16 Para. 1). If an addressee does not comply, the reasons for non-compliance must be explained to the ESA. However, the ESA has no means to enforce its decision or sanction the addressees. The only

sanction-like option available to the ESAs is the possibility to publish the fact that an addressee did not comply and the explanation the addressee offered for non-compliance.

The competence to develop ITSs and RTSs is a more powerful tool. ITSs relate „to standards that need to ensure uniform implementation of EU legislation, without amending legislation“ (Verhelst 41). In the development process, the ESAs are obliged to consult with the public and analyse the potential costs and benefits of the standard’s implementation. In order for an ITS to become binding, the Commission needs to formally endorse the draft. RTSs are to „supplement or amend a legislative act, but only those elements which are non-essential“ (qtd TFEU in Verhelst 41). As in the case of ITSs, the Commission needs to formally endorse a RTS to make it legally binding. Within a certain timeframe, the EP and the Council may object to a RTS. If this should happen, the RTS will not enter into force (Article 13)

If a competent authority fails to adopt binding EU measures, specific steps can be taken. The ESAs are empowered to investigate any possible breach of EU-law. After initiating an investigation, the ESA has up to two months to issue a recommendation which clearly spells out necessary actions to be taken by the investigated authority. The authority should reply within 10 days and inform the ESA of steps it intends to take. If the authority has not replied or not taken remedial steps within one month, the Commission can issue a formal opinion on the matter. If the authority fails to react to the Commission’s opinion as well, the ESAs are empowered to require the necessary actions directly from individual financial institutions (Art. 17). However, this procedure only applies when EU legislation is directly applicable to financial institutions or if it is „needed to maintain the condition of competition in the market or to ensure the stability of the financial system“ (Verhelst 42).

Another task of the ESAs is binding mediation in case of disagreements between competent authorities. It is notable that this power also applies to disagreements within colleges of supervisors. The only prerequisite for the ESAs to become active in this respect is that at least one of the concerned competent authorities must have formally requested the ESAs’ assistance in finding an agreement. If the request has been made, the ESA determines a conciliation phase during which the authorities in question have to reach an agreement. If no agreement can be found, the ESA will take a decision which the authorities have to respect. Should they fail to abide the decision, the ESA has the power to directly address individual financial institutions and require them to take the necessary actions. The ESA’s decision abrogates any earlier decision or ruling on the issue by the competent authorities.

The ESAs are at their most powerful when the systemic stability of the financial system is endangered and an emergency situation has been declared by the Council. Then, the ESAs are to „actively facilitate and, where deemed necessary, coordinate any actions undertaken by the relevant national competent supervisory authorities“ (Art 18). Whereas the ESAs are not charged with the overall management of a crisis, they will have access to all necessary information and take part in any relevant meeting of the relevant supervisors. Moreover, in order to prevent Member States from pursuing solely national solutions in an emergency situation, the ESA can require national supervisors to initiate specific actions. If the supervisor fails to comply, the ESA may address individual financial institutions. Again, the decision of the ESA would overrule any previous decision by the national authorities (Verhelst 43). Moreover, the ESAs will be able to temporarily prohibit certain financial activities, e.g. short selling, if these are regarded as threat to financial stability (Article 9).

LIMITS OF THE ESAs

Even though the ESAs are more powerful than the Level 3 committees, their competences are restricted in important ways. Especially the dependence on other EU bodies and the time-intensive procedural obligations have the potential of hampering the ESAs' impact .

Whereas the draft technical standards have the potential of being powerful tools to foster harmonisation and convergence, it is yet to be seen if the ESAs can use them freely. This is predominantly dependent on the Commission, the Council and the EP. The ESAs can only issue draft technical standards which subsequently need to be endorsed by the Commission to give them binding powers. Additionally, even if the Commission endorses a technical standard, the Council and the EP have the power to negate any standards within a certain timeframe. The effectiveness of these tools and the impact of the ESAs will depend heavily on the willingness of the EU Institutions to respect their independence. Moreover, the technical standards may not prove as effective as hoped. Even though, draft technical standards are likely to contribute more to the harmonisation efforts than recommendations and guidelines, they „neither exclude gold-plating nor regulatory arbitrage“ (Verhelst 40).

The power of the ESAs to enforce decisions is highly conditional. One prerequisite is a manifest breach of directly applicable EU law. Even if a law is breached, the Commission needs to issue a formal opinion before the ESAs can impose a decision on a national authority. The ESAs may only address an individual financial institution if the national authority does not implement the measures detailed in the Commission's opinion. This

process may take a considerable amount of time. It can take up to four month from an ESA decision until the Commission issues an opinion. Additionally, the national authority is to be granted sufficient time to adopt the Commission's instruction. The large timeframe may greatly delay ESA decisions and endanger the goal of a consistent regulatory framework.

The emergency powers of the ESAs are considerable. However, it is unlikely that the Council will declare emergencies frequently. Moreover, even if an emergency is declared, the actual crisis management is the task of the national authorities. The power to impose measures on the national authorities or individual financial institutions is restricted to cases in which directly applicable EU legislation is violated. Even if this is the case, the ESAs are prohibited by safeguard clauses to impose measures which would impinge on the fiscal sovereignty of the Member States.

The safeguard clauses are designed to protect the Member States fiscal sovereignty. The safeguard procedures depend on whether or not an emergency situation has been declared. Under normal circumstances, the Member State needs to notify the ESA and the Commission within two weeks of its non-compliance with the ESA decision and give a detailed explanation on how the ESA decision impinges on his fiscal sovereignty. Subsequently, the ESA needs to decide whether or not to maintain its decision. If it decides against maintaining the decision the ESA has two options: it can amend the decision and make sure it does not interfere with the Member States fiscal policy or it can revoke the decision. However, if the ESA decides to maintain the decision, the matter is passed to the Council, which has to decide within two month if the decision is to be maintained or to be revoked. Throughout the whole procedure, the ESA decision is suspended. In an emergency situation, the procedure is shortened. The Member State needs to notify the ESA, the Commission and the Council within three working days of the non-compliance with the measure on grounds of fiscal implications. After the notification, the measure is suspended. In a matter of ten days, the Council needs to take a decision if the measure is to be revoked. If the Council does not revoke it, the suspension is lifted and the Member State must conform to the measure. However, if the Member State continues to regard the measure as illegal intervention in its fiscal policy it may notify the Council of its concerns. The Council will reconsider its decision within a timeframe of eight weeks at the most. However, during this period, the ESA measure will be maintained (Article 38)

Evaluation of the EFSF

Compared to the pre-crisis system, the ESFS is certainly a major improvement. The fact that the ESFS exhibits a macro-economic as well as a micro-economic dimension already shows this. However, both dimensions are restricted in ways that may seriously hamper them in achieving their task of facilitating harmonisation, convergence and stability.

In the case of the ESRB, the most obvious restriction is the absence of binding powers. Some coercive power has been attributed to the ESRB's warnings and recommendations by means of the explanatory obligations on account of the addressees and the ESRB's option to go public. The legal obligations of EU Institutions and national supervisors to cooperate with the ESRB strengthen it to some degree, too. However, these provisions are hardly a substitute for binding powers. With regard to the complex tasks of the ESRB, it is questionable if these provisions will be sufficient. Verhelst argues that the ESRB will have to "rely for a major part on its reputation, instead of coercive powers" (Verhelst 29). However, the reliance on reputational effects has the potential to cause a functional predicament. In order to have a high reputation, the ESRB must be careful to issue only substantive warnings. This may lead to the ESRB being overly concerned with making sure to avoid uncertain warnings, which would put it in danger of issuing warnings too late or of underestimating the magnitude of a risk.

The facts that the ESRB has to follow a strict step-by-step procedure in obtaining information and that it is only granted access to general data has also been regarded as a possible handicap to the ESRB's efficiency (Verhelst 25). The procedure the ESRB needs to follow to obtain information may well prove to be highly time consuming and potentially result in the ESRB in the end not being able to access all the necessary information. The restriction on only using general data could also greatly impede the ESRB. A number of financial institutions have reached a size where they are systemically important, and detailed information on these institutions may well fall under the label "necessary information". Admittedly, the ESRB has the possibility of obtaining detailed information on an individual financial institution as a last resort. However, as the ESRB has to go through the entire information-obtaining cycle before this is possible, the ESRB may receive relevant data too late.

The General Board's size may pose another problem for the efficient functioning of the ESRB. Due to the high number of participants, it will be a challenging and lengthy process to discuss macro-prudential issues. Moreover, arriving at an effective decision will be even more difficult. Initially, the single majority voting promises a fast and efficient decision-making process. However, as the ESRB has no binding powers, the decisions will after all need to be

a consensus, embraced by the large majority of the General Board's members. If the General Board arrives at a decision, which is only supported by a narrow majority, the decision may easily be contested and ultimately even disregarded. The implicit need for consensus might result in watered down compromises, which try to accommodate many different interests and consequently are less effective (Verhelst 30).

Another notable point is the ESRB's imbalanced representative structure. The ESRB is largely dominated by central banks. In the General Board, three out of four voting members are central bankers, and the entire Secretariat is staffed and funded by the ECB. The dominance of central banks has limited the sectoral comprehensiveness of the ESRB and could impact on "the ESRB's ability to detect and respond to systemic risks" (Verhelst 30), as this is not necessarily the area of central bankers' expertise. Moreover, financial stability and inflation targeting, a central bank's core objective, may not always be compatible and might lead to conflicts of interest in the ESRB. These conflicts "could potentially lead to Board members neglecting their responsibilities as members of the General Board, which is for most of them after all only a secondary responsibility" (Verhelst 30). However, the problems arising from the General Board's size and composition could be balanced by the Steering Committee, which most likely will assume a guiding role in the ESRB and has a more balanced and comprehensive composition.

A task that is missing in the ESRB's set of objectives is the supervision of CRAs. Considering the role of the CRAs in the crisis and the macro-economic importance of their ratings, it could have been expected that the ESRB would have some competences in this respect (Lannoo 3).

In general, the ESRB has been given a highly complex task, but it is lacking real power. This could seriously diminish the ESRB's influence, as „assessment of macro-prudential risk remains an intellectually challenging task, and policy makers will continue to be doubtful of warnings that could undermine short term growth" (Verhelst 29). Nonetheless, the ESRB has the potential to acquire a significant amount of influence. Much will depend on how close the ESRB and the ESAs will cooperate in practice. The ESRB and the ESAs have already close contacts by means of institutional organisation. Building on this, they could create cooperative bonds, which could greatly enhance their individual and collective influence.

Compared to the ESRB and the Level 3 Lamfalussy committees, the ESAs have considerable powers. However, there are certain aspects of their institutional configuration that could prove to restrict them in significant ways. Whereas the de Larosière Report had

explicitly called for the ESAs to be independent authorities, the powers of the ESAs ultimately depend on the goodwill of the EU Institutions in many aspects.

The draft technical standards certainly have the potential of considerably boosting harmonisation and convergence; however, it is yet to be seen if the ESAs can use them freely. The effectiveness of the technical standards predominantly depends on the Commission, the Council and the EP. The technical standards developed by the ESAs are only drafts which must be endorsed by the Commission to become legally binding. Even if the Commission endorsed a technical standard, the Council and the EP still have the power to prevent any standard from becoming law. Moreover, the technical standards may not prove as effective as hoped for. Even though draft technical standards are likely to contribute more to the harmonisation efforts than recommendations and guidelines, they “neither exclude gold-plating nor regulatory arbitrage” (Verhelst 40).

The power of the ESAs to enforce decisions is also highly conditional. One prerequisite is a manifest breach of directly applicable EU law. Even if this is the case, the Commission needs to decide to issue a formal opinion before the ESAs are able to impose any measure on a national authority. The power to address individual financial institutions is even more restricted. Additionally, this process may take a considerable amount of time. It can take up to four months from an ESA decision until the Commission issues an opinion. Moreover, the national authority has to be granted sufficient time to adopt the Commission’s instructions. The large timeframe may greatly delay ESA decisions and endanger the goal of a consistent regulatory framework.

The emergency powers of the ESAs are considerable. However, it is unlikely that the Council will declare emergencies frequently. Moreover, even if an emergency is declared, the actual crisis management is the task of the national authorities. The power to impose measures on the national authorities or individual financial institutions is restricted to cases in which directly applicable EU legislation is violated. Even if this is the case, the ESAs are prohibited by safeguard clauses to impose measures which would impinge on the fiscal sovereignty of the Member States. However, as in an international financial crisis many measures are likely to influence the fiscal policies of Member States to some degree, the safeguard could be used to considerably undermine the ESAs effectiveness.

Finally, the primary decision makers in each ESA are members of the Board of Supervisors, i.e. the Heads of the national competent authorities. This has been an upgrade, as the members of the Level 3 committees were ‘only’ highlevel representatives. However, even though the members on the Board are legally obliged to act solely in the interest of the Union,

they are still most of the time the Heads of the national authorities and therefore responsible for the national systems and accountable to national governments. It is questionable, if ordering the Board members to act European is enough to solve the possible conflict of interests which could arise out of such a dual responsibility.

Conclusion

The tracing of the development of the supervisory and regulatory system at the EU level and the investigation and evaluation of the ESFS has led to three general conclusions. First, since the creation of the Lamfalussy process and the initial Level 3 committees, the EU-level supervisory and regulatory tasks for the financial sector have considerably expanded. This development indicates awareness amongst policy-makers that international finance needs international supervision and regulation. Nonetheless, the increase in tasks and responsibility at the EU level was not accompanied by an equal increase in competencies. This is clearly shown by the reform following the Commission's review. Second, whereas the Member States were highly reluctant to grant significant powers to the EU supervisory bodies prior to the international financial crisis, it seems that a change of mind has set in after it and that a consensus arose that some tasks are more efficiently conducted at the European Level. However, the creation of the ESFS took place at a time when the shock of the financial crisis was still fresh and policy-makers as well as the general public saw the main causes of the crisis in sparse and ineffective supervision and regulation. It is possible that, as the crisis and its causes become a more distant memory, the perceived need for regulation decreases and the ESFS will not be able to exploit its full potential. Finally, the analysis of the ESFS has shown that it is not possible to predict the impact of the ESFS or whether it will be able to achieve a harmonised regulatory and supervisory structure, which guarantees systemic stability. This depends crucially on the Member States and their willingness to achieve these goals. Essentially, the Member States have taken care to build in backdoors which allow them to opt out of uncomfortable obligations. The veto right of the EP and the Council on technical standards and the safeguard clauses for the ESAs are prime examples for this. It would be a worthwhile exercise to monitor the future developments of the ESFS and the impact it will

have on the Member States in order to determine if the orientation towards more regulation and supervision at the European level will continue.

Addendum C

Text A, edited version

After the manifestation of the international financial crisis in 2007, a great amount of attention at global and European level focused on regulation and supervision of the financial sector. It became accepted that the expansion and internationalisation of the financial system had advanced much faster than the process of institution-building and had resulted in a financial system that was operating internationally yet was regulated and supervised at a predominately national level. In the EU, the realisation dawned that there was a lack of capacity for “disciplining the potentially self-destructive actions of self-interested, essentially anarchic profit-seekers” (Streek 67). As a result, the Member States decided on a substantial reform of the established European regulatory and supervisory system. This reform was intended to adapt the supervisory system to the realities of the financial market and strengthen the supervisory powers at the European level (ESAs¹ Preamble 5). Ultimately, the reform led to the creation of the European System of Financial Supervisors (ESFS). The ESFS is the currently last stage in an ongoing process that has been aiming at establishing a single market for financial services, creating a harmonised regulatory structure across the EU and fostering cooperative prudential supervision at the European level. However, despite having been in place for years, this process has not yet managed to achieve its goals. Instead, it resulted in highly inconsistent regulatory and supervisory practices across the European Union.

This paper traces this process and the development of the institutions for prudential supervision of the financial system at the European level. It opens with the creation of the Lamfalussy framework and its Level 3 committees, which were closest to embody EU-level supervisory institutions. In order to put the findings in perspective, the reasons for the creation of the Lamfalussy framework and its structure are reflected upon in the first part of the analysis. Subsequently, the focus of the paper is on the development of the competencies, tasks and capabilities of the Level 3 committees; particular attention is paid to the 2007 review of the Lamfalussy framework and its impact. The next section of the paper studies the financial crisis and the shortcomings of the European framework, which were revealed by the crisis. Subsequently, the paper analyses the recommendations on supervisory repair as presented by the report of the High-Level Group on Supervision in the EU (the de Larosière Report) and how these recommendations were put into practice. This part of the paper gives a

Comment [JGB1]: Your work is still without a title. Your guidelines stipulate that your dissertation has to have a title page too. Please make sure that you prepare your document according to your guidelines.

Comment [JGB2]: emergence

Comment [JGB3]: financial experts both on a global and a European level focused their attention on the regulation and supervision of the financial sector.

Comment [AW4]:
The sentence is a bit long, but you can still understand it. You could put a comma before „yet“ to make it easier to read.

Comment [JGB5]: with a chronology of

Comment [JGB6]: closely resembled and were thus suitable to replace EU-level supervisory institutions.

Comment [AW7]: which findings?

Comment [JGB8]: Just for the sake of variety.

Comment [AW9]: 2 x subsequently. Alternative suggestion: In the subsequent section, ...

¹ #R relates to Regulations No 1093/2010, No 1094/2010 and No 1095/2010.

detailed account of the structures, the tasks and the competences of the individual bodies that constitute the ESFS. Finally, the limits and shortcomings of the ESFS ~~will be~~ are evaluated. The evaluation aims to determine if the new system at the European level has been attributed the capacity to reach their goal and create a harmonised regulatory and supervisory structure, which is able to discipline the actors in the financial market and guarantee systemic stability.

Comment [JGB10]: Both the future tense and the present tense could be used in this paragraph, but one tense should be chosen and used consistently. You used the present tense more frequently, therefore I changed this one instance of future tense into present tense here. You could do it the other way round and change everything into future tense, if you prefer that.

~~1. THE LAMFALUSSY REPORT~~ The Lamfalussy Report

Comment [JGB11]: It is enough to write headings in bold letters. You can use capital letters throughout, but I would recommend the use of numbered headings. It helps the reader to allocate sub-headings to the main headings very quickly. I will suggest a heading system throughout your paper.

1.1. Origin and Characteristics

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Whereas the goal of a single market has been achieved in many sectors, the integration of the financial sector fell short of this aspiration. As Quaglia notes, “the regulation and supervision of financial services has lagged behind in the agenda of the European Union (EU) until the very end of the 1990s” (*politics* 269). The framework which was intended to foster harmonisation was based on three main concepts. First, Member States were obliged to mutually recognise the regulatory framework of one another. Second, every pan-EU financial activity would be subject to home Member State control only. Finally, every Member State would implement EU-wide minimum standards aimed at protecting investors and guaranteeing systemic stability. Through this framework, financial actors were meant to acquire a single regulatory passport which would enable them to operate throughout the EU without their actions being obstructed by host Member States’ regulatory regimes. By the end of the 1990s, however, it became increasingly obvious that the previous policy had not delivered the desired results, that a single financial area had not developed, and that in numerous legislative areas harmonisation had not set in.

Comment [JGB12]: Is the lower-case spelling correct here?

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Comment [JGB13]: A bit ambiguous; could be understood as meaning that the Members would create such standards and subsequently implement them on an EU-wide level. But I think it is meant that these standards were standards created for obligatory implementation by all EU members...?

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National protectionism and an unwillingness to adjust national structures led to inconsistency and delays in the implementation of many directives ~~being implemented inconsistently and often badly delayed~~. It became clear that the existing regulatory structure was unsuitable to cope with ~~the~~ momentous changes in the financial world such as the introduction of the monetary union, the rapid developments fuelled by technical advances, ~~and the~~ increasing globalisation and the interconnectedness of the financial sector. Realising the urgent need for action, the European Commission proposed the Financial Services Action Plan (FSAP) in 1999. The FSAP consisted of 42 measures aimed at facilitating ~~increased~~ enhancing financial integration and creating a level playing field for financial actors across the EU. The proposal of the Commission’s ~~proposal~~ was enthusiastically embraced by market participants and policy-makers, both at EU and national level.

In July 2000, the Economic and Financial Affairs Council (ECOFIN) appointed the Committee of Wise Men on the Regulation of the European Securities Markets. The Committee, chaired by Alexander Lamfalussy, was mandated to investigate and evaluate the regulatory framework for securities in the EU. The mandate comprised three major tasks. The first task was to deliver an assessment of the current state of the integration of the securities and investment services market, and to evaluate the chance of completing the FSAP on time under the current legislative regime. Second, in view of the pace of innovation in the securities market, the Committee was charged ~~to~~ with assessing the suitability of the legislative framework as to its potential of keeping up pace with the rapid speed of innovation in the securities market. Finally, the Committee was mandated to develop suggestions for adapting current practices in order to ensure greater convergence and cooperation in day-to-day implementation and take into account new developments on the market⁴⁹⁷ (Lamfalussy final report 99).

Comment [JGB14]: 2 x pace in one sentence; 2 x innovation in one sentence. See suggestion.

In December 2000, the Committee published its final report, which amounted to a withering criticism of the regulatory and legislative framework. The Report spelled out the inadequacy of EU-wide harmonisation, the inflexibility of the regulatory framework, its pronounced inability to adapt to changing market situations and its general failure to facilitate and encourage greater integration. Moreover, the Report criticised the Council for adopting overly complicated legislation by attempting to fit 15 sets of national legislation into one Community framework⁴⁹⁸ (Lamfalussy final 14). The Council was further reprimanded for relying too heavily on directives, giving the Member States a high degree of discretion. This frequently resulted in EU legislation being implemented delayed and in various national interpretations, which obstructed the goal of an even playing field for financial actors (Moloney LamLegMo 510,511). The main point of criticism in the Report, however, was the laggard speed of the legislative process:— the average amount of time needed to adopt a measure under the co-decision framework amounted to two years.

Comment [AB15]: Please note: Your reference of the same document on Page 3 reads: (Lamfalussy final report 99). Please review whether your reference is correct with or without the “report” and use the correct version consistently throughout your paper! Please also check: should “final report” be capitalised?

Comment [JGB16]: It is not clear what “this” refers to here. Your reader might understand it as referring to the fact that the Council was reprimanded, or even as referring to the Member States being given a high degree of discretion. But I suppose the intended reference is the reason for which the Council was reprimanded? Please check. Suggestion: “This lapse frequently...”

The Wise Men concluded that the legislative framework was too slow, too rigid, complex and ill-adapted to the pace of global financial market change⁴⁹⁹ (qtd. Wise Men in Moloney LamLegMo 511). The Committee urgently called on the policy-makers to reform the legislative and regulatory framework. They claimed that as ignoring ignorance of the weaknesses and keeping maintenance of the status quo would mean that economic growth, employment and prosperity will be lower, and competitive advantage will be lost to those outside the European Union⁵⁰⁰ (Wise Men 8).

Comment [JGB17]: delayed as an adverb is strange here. Suggestion: “...resulted in the delayed implementation of EU legislation and...”

The **Committee** proposed a new legislative framework to address these problems. The ~~per~~o~~posed~~ law-making process was based on the realisation that passing financial regulation should be a two-stage instead of a single-stage process. ~~Priorevious~~ to the introduction of the Lamfalussy model, politicians in the Council and the **EP** were responsible for ~~both~~ fundamental political decisions ~~and-as well as~~ detailed technical regulation and rules. The Committee of Wise Men proposed to split these two legislative areas into two separate stages in the law-making process. ~~InA~~t the first stage, the Council and the EP would decide on fundamental political principles in the form of ~~„~~“broad but sufficiently precise framework rules~~“~~” (Moloney LamLegMo 511), which would determine the general political framework and direction of the Union. ~~In a secondary stage, expert committees from the legislative process would produce and determine D~~detailed technical regulation; ~~however, would be produced by committees of experts in a secondary stage of the legislative process and determined~~ in accordance with the objectives and the delegated legislative mandate decided on by the primary lawmakers.

The new legislative framework was proposed as a four-level structure based on the comitology procedure, which allow~~es~~ the delegation of legislative powers from the primary law-makers to the Commission. Each level is concerned with a different stage of the implementation of EU legislation. At the first level, EP and Council decide on framework principles. At the second level, the Commission develops detailed technical regulation. In order to support the Commission and guarantee its accountability, the Commission is advised and supervised by expert committees. The function of the third level is to provide advice to bodies at Level 1 and Level 2, to foster information exchange, cooperation and EU-wide regulatory and supervisory convergence. Finally, Level 4 is dedicated to ~~the enforcement enforcingof~~ EU legislation at the Member State level (Möllers 382, OECD 95). Initially, two new committees were instituted. At ~~L~~level 2, a political regulatory committee ~~representing the Member States~~ was created ~~representing the Member States~~ and ~~with- assigned~~ the primary function of supervising the Commission. At Level 3, a technical expert committee ~~representing the national supervisory authorities~~ was instituted; ~~representing the national supervisory authorities~~ and ~~with- assigned~~ advisory functions for Level 1 and Level 2. Through the four-level process for financial regulation, ~~„~~“the Lamfalussy model allows for the adoption of harmonised rules at a level of detail unprecedented~~“~~” (Moloney LamLegMo 517).

The Report set out a detailed list of principles on which the legislative framework should be based, ~~including -It should~~ maintainance of confidence in the European financial

Comment [JGB18]: You are switching between capital and small spelling of committee when referring to the committees of the different levels of the four-level legislative framework. Whichever spelling is officially used should be used consistently in your paper. It could be possible, however, that it is officially capitalised when you refer to one of the specific committees, i.e. Level-3 Committee, but if you refer to all or several committees in general, it might be written in small. Just double-check in your reading to make sure you are correct and consistent... (just as a reminder: you don't have to go through your whole text and correct every single case, but you can do all in one with the find-and-replace modus!)

Comment [JGB19]: European Parliament (EP) just for the sake of consistency

market, ~~ensure-guarantee of~~ a high level of prudential supervision in order to prevent systemic risks and ~~protection~~ consumer interests. ~~At the same time~~ Yet, ~~it~~ the framework must not discourage or obstruct financial innovation or violate the principles of subsidiarity and proportionality as well as the competition rules of the EU. Furthermore, policy-makers, regulators and supervisors should be encouraged to take European as well as international dimensions into account when devising their strategies. Additionally, the Report recommended reliance on regulations instead of directives whenever possible. The Committee qualified this statement by recommending ~~ing~~ the choice of policy instrument being dependent ~~on~~ whether there is a need for Member State flexibility or to maintain national practices [...] or whether the measure demands uniformity across the EU² (Moloney Time 1006). Nonetheless, by recommending regulations as primary policy instrument, the Committee ~~made a case in favour of~~ more harmonisation and less Member State discretion. Finally, ~~re~~occurring themes throughout the Report were the need to guarantee the transparency and accountability of the law-making process and the necessity of extensive, open consultation with market participants in order to be on top of market developments.

In 2003, the Lamfalussy framework was evaluated by the Inter-Institutional Monitoring Group (IIMG)². In its Report, the IIMG evaluated ~~d~~ the Lamfalussy Process as ~~v~~iable instrument for improving the efficiency and speed of financial market legislation and regulation in the EU² (qtd. IIMG in Moloney 1007). Moreover, the transparency and inclusive nature of the Lamfalussy process was positively evaluated. The Group found ~~t~~hat progress had been made by the Commission, the ~~E~~SC, and ~~C~~ESR in improving communication between policy makers and market actors² (qtd. IIMG in Moloney 1007). ~~As~~ the Wise Men, the Group strongly recommended the use of regulations instead of directives whenever possible. According to the Report, exceptions should be made only ~~w~~here the advantage of Member States' flexibility can be demonstrated, or where, fundamental considerations' make regulation undesirable² (qtd. IIMG in Moloney 1007).

In December 2002, ECOFIN approved a proposal³ for the extension of the Lamfalussy process to the banking and insurance sector. Throughout 2003 and 2004, measures were taken to adapt the framework to the banking and insurance sector. These included the institution of four new committees. At level 2, the European Banking Committee (EBC) and the European Insurance and Occupational Pension Committee (EIOPC) were put in place for the banking and the insurance sector, respectively (OECD 96). At level 3, the Committee of European

Comment [JGB20]: You have mixed up two idiomatic expressions here. To make it idiomatic, two solutions are possible here: either "made a case for", or "pleaded in favour of".

Comment [JGB21]: is this a proper name and therefore capitalised, or a spelling error?

Comment [JGB22]: I would write the name out and put the abbreviation in brackets, just to be consistent and to help the reader follow your argument

Comment [JGB23]: I would write the name out and put the abbreviation in brackets, just to be consistent and to help the reader follow your argument. See also comment JGB46.

Comment [JGB24]: This is ambiguous because it sounds as if the Group is the same body of people as the Wise Men. It could be understood that you are saying: "in their position as the Wise Men, the Group strongly recommended...". But as I understand it from your text, the Wise Men and the Group are two different bodies of people. If this is the case, I would recommend to write: "Just as the Wise Men" in order to make clear that there are two different bodies of people who share the same opinion.

² eC comprises six independent experts; Council, Commission and EP nominate two members each (reference).

³ pP proposed by the German Finance Minister Eichel and the British Chancellor Brown.

Banking Supervisors (CEBS) and the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) were created in addition to the CESR (OECD 96).

~~1.2. LEVEL~~ Level 1 – Basic~~ASIC~~~~POLITICAL~~ Political ~~CHOICE~~Choice

At Level 1 of the Lamfalussy Process, basic political choice is enacted. The measures adopted at Level 1 are general frameworks, determining the overall direction of the EU policy in financial matters. Consequently, Level-1 decisions are unlikely to be subject to frequent change or to the need of ~~aligning~~ alignment them to market developments. The processes at Level 1 follow the legislative co-decision procedure as determined under Article 294 TFEU (Möllers 382). ~~In the first step, the Commission drafts legislation,~~ Either on its own initiative or on the impetus of the relevant Level 3 committee, the Commission drafts legislation in a first step and submits ~~it~~ it to the Council and the EP. In case the Commission drafts a proposal on its own initiative, it should consult the Level 3 committee prior to submission. In ~~the~~ the second step, ~~the Commission's~~ of the Commission proposal is co-decided by the political bodies of the EU, the Council and the EP. During the whole legislative process, ~~the~~ Commission, Council and EP are advised by the respective committees at Level 2 and Level 3 (Möllers 382). The legislative measure can be issued either as a directive or a regulation, and ~~it is chosen by~~ the political bodies decide ~~choose~~ which legislative instrument is ultimately used (Quaglia *politics* 272). The scope of possible policy measures to be adopted at Level 2 is determined at Level 1 by specifying the amount of legislative power delegated to the Commission at Level 2. Due to the lack of excessive detail at Level 1, the Council and the EP are able to adopt framework measures much ~~more quickly~~ quicker, as ~~“the more detailed Level 1 measures get, the less likely is their speedy adoption”~~ (Moloney LamLegMo 516). The general nature of the Level 1 political choices is central to the Lamfalussy process and essential to the model's efficiency.

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Comment [JGB25]: Here, Level-1 is an adjective. Therefore I suggest the hyphen. This adjectival construction appears quite frequently throughout your paper, mostly combined with *committee*, among a few other expressions. If all your sources do not hyphenate, then I would leave it as it is. If, however, this is your own expression, I would recommend the hyphen. You should perhaps check in your reading what the preferred construction is here. (just to remind you, if you want to insert the hyphen, you don't need to go through the whole paper, but you can do it with the find & replace mode.)

Comment [JGB26]: The “it” is ambiguous here. The reader would think it refers to the legislative measure.

~~1.3. LEVEL~~ Level 2 – ~~DETAILED~~ Detailed ~~TECHNICAL~~ Technical
REGULATIONRegulation

At Level 2 of the Lamfalussy process, the general frameworks, legislated by the Level 1 bodies, are supplemented with detailed technical regulation. In order to guarantee technical expertise, transparency and participation of the public in the legislative process, the Level 3 committees are tightly involved in the Level 2 processes. After the Council and the EP have

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co-decided on a framework principle, the Commission consults with the respective Level 2 committee and subsequently requests advice from the respective Level 3 committee.

Utilizing an extensive consultative process, the Level 3 committee prepares advice and submits it to the Commission. In the subsequent step, the Commission examines the advice of the Level 3 committee and formulates a legislative proposal, which is ~~then~~ presented to the relevant Level 2 committee. Within a period of three months, the Level 2 committee ~~needs is~~ to vote on the ~~Commission's~~ proposal drafted by the Commission. If the committee accepts the proposal, the Commission adopts the implementing measure, and the draft becomes EU law (OECD 97). However, if the Level 2 committee rejects the ~~Commission's~~ proposal, the Commission may not adopt it. In this case, the proposal is submitted to the Council, which has three months to consider it. If the Council has neither approved nor rejected the proposal after this period, the Commission may adopt the measure (Moloney LamLegMo 512). By means of this procedure, detailed technical regulation can be ~~“~~adopted by the Commission under a streamlined and accelerated delegated legislative procedure~~”~~ (Moloney LamLegMo 511), and existing law can be aligned to market developments without a full legislative cycle.

The main actor at Level 2 is the Commission. However, the Level 2 committees wield considerable power. The primary function of the comitology committees is to advise the Commission and ~~“~~serve as a body for reflection, debate and advice~~”~~ (qtd. ESC preamble in Moloney LamLegMo 512). However, they essentially act as regulators and supervisors of the Commission (OECD 96). Without their approval, no measure proposed by the Commission can be adopted as part of the comitology procedures, i.e. without the involvement of the primary legislators. Through the Level 2 committees, the Member States retain significant control over the legislation passed at Level 2. If a Commission proposal is to be adopted, it has to win a qualified majority vote in the relevant committee, i.e. a qualified majority of the Member States must accept the proposed legislation.⁴ Each Member State representative is allocated a certain number of votes roughly reflecting the size of the State's population.⁵ In order to reach a qualified majority, a majority of Member States (50 per cent + 1) must be in favour of the proposal. Additionally, the number of votes these Member States can allocate must amount to a minimum of 255 votes (out of 345).

The membership structure of the three Level 2 committees is almost identical. They are composed of high-level representatives of the Member States. Each Member State is entitled

⁴ See Council Decision 1999/468/EC.

⁵ As decided in the Treaty of Nice: Germany 29, France 29, Italy 29, United Kingdom 29, Spain 27, Poland 27, Romania 14, Netherlands 13, Belgium 12, Czech Republic 12, Greece 12, Hungary 12, Portugal 12, Austria 10, Bulgaria 10, Sweden 10, Denmark 7, Ireland 7, Lithuania 7, Slovenia 7, Finland 7, Estonia 4, Cyprus 4, Latvia 4, Luxemburg 4, Slovenia 4 and Malta 3.

Comment [JGB27]: I guess you are using British English; see p. 1 “fuelled”.

Comment [JGB28]: A bit colloquial. Suggestion: “which has to consider the proposal within a period of three months.”

Comment [JGB29]: Advising and serving as a body for advice is basically the same. Perhaps “counsel” instead of “advise”?

Comment [AW30]: the committees

Comment [JGB31]: Inconsistent spelling of committee! please see comment JGB17!

Comment [JGB32]: Ambiguous! 50%+1 of the 27 States, or 50%+1 in each State?

to send a delegation consisting of two representatives. It has become generally accepted to send one political representative and one technical expert, both nominated by the relevant ministries. The Chairs and the secretariats of the Level 2 committees are provided by the Commission (Quaglia *politics* 272). In order to ensure close links between the Level 2 and the Level 3 committees, the Chair of the corresponding Level 3 committee participates in the meetings of the Level 2 committee. The Chair He may fully participate in the discussion but has no formal voting rights. The only difference in the membership structure of the Level 2 committees is that observer status is explicitly bestowed upon the ECB by the decision establishing the EBC.

Comment [AW33]: is generally acceptable that the States

Comment [JGB34]: Is it correct like this, Chairs capitalised and secretariats small?

Comment [JGB35]: Full name of the institution?

Comment [JGB36]: Unclear.

1.4. LEVEL Level 3 – FOSTERTING SUPERVISORY Supervisory COOPERATION Cooperation AND and CONVERGENCE Confidence

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The three Level 3 Committees were to serve as independent advisors to the actors at Level 1 and Level 2 and foster supervisory cooperation and convergence. Through Given this responsibility, they were intended to contribute to the creation of an EU-wide consistent financial regulatory framework. The advisory function of the committees was to be carried out either on the committees' own initiative or on the Commission's request. In the latter case, the Commission would lay down a timeframe in which the committees² had to deliver their advice (Article 2).

Comment [JGB37]: Don't forget to include all the references!

Each Member State was to designate one high-level representative of their national public authorities responsible for the national supervision of the securities sector. The delegates of the Member States had voting rights and were to elect the Chair of the Committee from among their numbers. In order to ensure the presence of the Commission, it was decided that the Commission would designate a high-level representative, who would be entitled to participate in the Committee's debates but did not hold voting rights. Apart from these permanent members, the committees² had the right to invite external experts and observers to participate in their debates (Art 3). It was further determined that the committees had to cooperate closely with the Commission and the Level 3 committees (Article 4). The committees were supported by their secretariat. The members of the secretariat were appointed by the Committee or the Chair and were to "prepare the minutes of the meetings, assist the Committee, the Expert Groups, the Permanent Groups and the Members and Observers in their functions" (REFERENCE). Moreover, the secretariats had the important function of coordinating the consultation processes with the public.

Comment [JGB38]: Why does the tense suddenly switch to past tense? Is everything under Level 3 no longer valid? Or is it still valid, but the past tense wants to indicate that Level 3 was reformed at a later stage (as you indicate in the last sentence of the chapter describing level 4) ? Either way, it would be important to inform the reader what the situation is and to chose the tense accordingly. This accounts for the whole paragraph under the heading Level 3. An easy way to help the reader follow would be to indicate at the beginning of the section about Level 3 that this body has been reformed at a later stage and that it is not operative any longer in the way described in this paragraph. In that way, your reader will understand instantly why you are writing in the past tense now.

Comment [JGB39]: Is the apostrophe correct here? Or does the entitlement actually refer to the right to participate in the debates of all Level 3 committees? If that is the case, it must be committees' with the apostrophe at the end.

Comment [JGB40]: If really past tense, then "would".

The decisions establishing the Level 3 committees were redrafted in 2007 to significantly. ~~The new decision significantly~~ extended the tasks of the Level 3 committees.⁶ In 2009, the committees were upgraded to become~~into~~ the European Supervisory Authorities. This upgrade further broaden~~increased~~ their tasks, but also granted them additional competencies and powers.⁷

Comment [AW41]: procedures?
Comment [AW42]: reworked

1.5: Level~~EVEL~~ 4 – Legal Enforcement

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Comment [JGB43]: For the sake of structural consistency, give it a similar heading as you gave to Levels 1-3. Please see my suggestion, but consider if it is adequate if you want to chose a different heading. It is only important that you indicate here as well the function of level 4 in the heading, just as you have done for Levels 1-3.
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Comment [JGB44]: Tense; see Comment JGB21! Refers to the whole paragraph under the heading LEVEL 4!
Comment [AW45]: processes

Level 4 of the Lamfalussy Process has been concerned with the punctual and correct implementation of agreed EU legislation in the Member States. The main actor at Level 4 is the Commission. In order to facilitate the task at Level 4, the Commission has been closely working together with national authorities. This included the organisation of transposition workshops and issuing guidance for the national regulators. The Commission has the right to initiate infringement procedures against any Member States which fail to timely transpose agreed EU legislation. Through the reform of the Level 3 bodies subsequent to the financial crisis, their tasks now include some provisions, which are intended to aid the Commission at Level 4.

Comment [JGB46]: It should be mentioned earlier that Level 3 has been reformed, actually at the beginning of the paragraph, where Level 3 is presented. And it should be made clear which points are still valid and which ones have been reformed... It is confusing for the reader if this is just done by alternating past and present tense.

2. The~~HE~~DEVELOPMENT Development OF~~of the~~THE EU Supervisory UPERVISORY~~SYSTEM~~ System

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When the CESR was created as the first Level 3 committee in 2001,⁸ it had a purely advisory role. The Committee's operational arrangements and rules of procedure were entirely self-determined (Article 7). The CESR was obliged to present an annual report to the Commission (Article 8) and had to consult market participants extensively and at an early stage in an open and transparent manner (Article 5) prior to submitting its advice to the Commission.

In December 2002, the Council invited the Commission to extend the Lamfalussy process to the banking and occupational insurance sector, and to establish the corresponding committees as soon as possible. In November 2003, the Commission instituted the two new

⁶ See 2007 review, section....

⁷ See new system, section....

⁸ Commission Decision 2001/527/EC.

Committees at Level 3.⁹ The legislative framework, general objectives and structure of the new committees was in large parts identical to those of the CESR²s. Just as the CESR, the CEBS and CEIOPS were independent advisory bodies, and each committee was to “adopt its own rules of procedure and organise its own operational arrangements” (Article 7). Both were to consult the public prior to submitting advice, had to present an annual report to the Commission, had the right to instigate independent working groups, could invite observers and experts, could appoint their secretariat and were to keep close links to the Commission.

There were, however, some notable differences. Whereas the CESR had only an advisory role, the CEIOPS and the CEBS were explicitly charged with promoting the convergence of supervisory practices, contributing to the consistent application of EU legislation and facilitating the exchange of information (Article 2). The tasks of CEBS and CEIOPS differentiate insofar as the CEIOPS was to provide a forum for supervisory cooperation, whereas the CEBS was charged to actively enhance supervisory cooperation. Moreover, the membership structure of the new committees was slightly different due to sectoral peculiarities. The CEBS and CEIOPS decision also contained explicit provisions restricting the participation in discussions which concerned confidential information on a supervised institution.

2.1 3L3 JOINT-Joint COMMITTEES Committees

In 2005, the CESR, the CEIOPS and the CEBS agreed on a Joint Protocol on Cooperation, which was termed the “3L3 work programme” (OECD 96). The programme was initiated to establish cross-sectoral cooperation and information exchange. The focus of the Joint Protocol focused was in particular on the supervision of the rising number of financial conglomerates and on the establishment of cross-sectoral consistency between in the work of the Level 3 committees (OECD 96). The Protocol identified several common interests of the Level 3 committees, among them such as information sharing, experience exchange, reduction of supervisory burdens and the achievement of functional harmonisation of the committees. In consideration of the different objectives and tasks of the committees, the cooperation arrangements were primarily of a practical in their nature. The main facilitators of contact and cooperation were the Chairs of the committees. The Joint Protocol obliged the Chairs to meet two or three times a year in order to discuss topics of common interest and set common priorities. In their work, the Chairs were supported by the Secretariats, which were to

Comment [JGB47]: On page 3 you state that one committee is instituted at Level 2 and one at Level 3: “Initially, two new committees were instituted. At Level 2, a political regulatory committee was created representing the Member States and was assigned the primary function of supervising the Commission. At Level 3, a technical expert committee was instituted, representing the national supervisory authorities and was assigned advisory functions for Level 1 and Level 2.”

Here you state now that two committees were instituted at Level 3. Please clarify which statement is correct.

Comment [JGB48]: Who is this? You still didn't introduce the full name. Please see also comment JGB22 page 3 where CESR appears for the first time.

Comment [JGB49]: Why past tense?

Comment [JGB50]: Tense?

Comment [JGB51]: Tense?

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Comment [JGB52]: Why past tense? Is the protocol no longer valid? Or has been reconditioned? If that is the case, it would help the reader if you explain the current situation in a short sentence, something like “... agreed on a Joint Protocol... which was termed 3L3 work programme and was only temporarily effective until...”

⁹ CEIOPS (2004/6/EC) and CEPS (2004/6/EC).

establish contact several times a year in order to exchange information of common interest. Moreover, every secretariat would receive detailed information on the proceedings in the other committees in the form of minutes and other documents (Article 2). In order to increase cross-sectoral awareness of the members of the committees, the Joint Protocol mandated the committees to organise cross-sectoral training sessions. The 3L3 agreement was an important step towards supervisory co-operation, however, its voluntary nature and lack of legal foundation rendered it less effective than hoped for.

2.2 Review ~~VIEW~~ of ~~Of the~~ ~~the~~ ~~THE~~ 2007 Lamfalussy ~~AMFALUSSY~~ PROCESS Process 2007

2.2.1 The Content of the Review

In 2007, the Commission published a review of the Lamfalussy process.¹⁰ Overall, the Commission was pleased by the achievements of the framework. ~~It~~ especially highlighted by the reduction ~~of~~ in the time necessary to adopt measures at the EU level. However, the Commission also clearly stated that “future evidence-based practical improvements” (Commission *Review 3*) and greater supervisory cooperation and convergence between the Member State authorities were essential to keep pace with the rapid developments and continuing integration of the financial markets.

The Commission strongly criticised the practice of gold-plating¹¹ and the tendency for regulatory arbitrage¹² among the Member States. As a solution, the Commission suggested to increasingly use regulations as the policy instrument of choice, and to restrict the discretion of the Member States. The Commission also called for rules obliging Member States to “justify rigorously any regulatory additions or add-ons [...] in cases where such latitude is possible” (Commission *Review 5*).

A key area in need of ~~for~~ improvements identified by the Commission was the cooperation amongst supervisors and the convergence of supervisory practices. To foster and enhance these aspects would have been primarily the task of the Level 3 committees. ~~H~~ However, the Commission found that the committees did “not seem to be fully equipped to deliver what has been expected of them” (Commission *Review 7*). Especially the fact that representatives of the national supervisors ~~onto~~ to the Level 3 committees were inclined to

¹⁰ Review of the Lamfalussy Process: Strengthening Supervisory Convergence.

¹¹ Member States impose more stringent legislation than they would have to.

¹² Companies can move to the Member State with the least intrusive regulations.

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Comment [JGB53]: ambiguous.

favour their national obligations above their European responsibility was a concern addressed in the review. The Review stated that “if supervisors’ obligations under their national law conflict with non-binding measures pursuant to Level 3, supervisors will let national obligations prevail” (Commission Review 7). Due to the national accountability and loyalty of committee members, they were inclined to favour national interests, ~~and therefore thus~~ slowing down or obstructing progress on the common regulatory framework.

In order to improve the efficiency of the committees, the Commission suggested that they should be given specific objectives, which they had to achieve in a given timeframe. Moreover, the Commission called for ~~charging-binding~~ the Level 3 committees ~~to report more detailed on~~ their progress and obligating them to explain themselves, ~~if-should they did not~~ reach their targets. The review also called for a provision which would oblige the committees to identify “any recalcitrant supervisors” (Commission Review 7). ~~For the~~ case the Level 3 committees failed to reach their objectives and the implementation of an initiative had to be considered as a failure, the Commission identified three possible procedural options. First, the initiative would be terminated. Second, the Commission would create a comotology measure at Level 2. The prerequisite for this case would be the possibility to adopt the measure under the Level 1 mandate. Finally, ~~if-should~~ the second option ~~was-prove to be-not-unfeasible~~ and the measure ~~be-was~~ regarded as sufficiently important, its realisation ~~should-would have to be~~ considered by the Level 1 legislators. In addition, the Commission called on the Member States to include a provision in the charters of their supervisory authorities which would make it obligatory ~~for them~~ to cooperate with other national supervisors and therefore prevent them to a certain degree from obstructing EU initiatives.

Another point of critique was the inconsistent and unclear formulation of the regulatory measures establishing the Level 3 committees and their tasks. The only task clearly established was ~~the providing-provision of~~ advice to Level 1 and Level 2. Only the CEBS and the CEIOPS were ~~charged-obligated~~ to contribute the consistent implementation and convergence of supervisory practices. The task to strengthen supervisory cooperation was even more restricted and only the CEBS had ~~reference~~ to it in its founding document. The Commission proposed to modify the “relevant Level 1 directives to significantly strengthen cooperation requirements and to enhance the supervisory competencies of the three Level 3 committees” (Commission Review 8).

Moreover, the Commission criticised the ~~decision making~~ process the Level 3 committees had decided on. In general, the committees made their decisions based on consensus, requiring ~~an~~ unanimous decision. Only ~~for~~ technical advice to the Commission

Comment [JGB54]: to giving a more detailed account of

Comment [JGB55]: ambiguous. For whom?

Comment [JGB56]: access

Comment [JGB57]: please refer to comment JGB48 on page 9!

did the committees use the qualified majority voting system. Whereas the unanimous vote guaranteed widespread acceptance of the ~~passed~~-measures passed, it often resulted in watered-down and ineffective initiatives. For the Commission it was essential to further enhance efficiency and effectiveness of the decision making procedures of the Level 3 committees⁶⁹ (Review 9). Therefore, it recommended the introduction of obligatory application of the qualified majority vote in certain areas. As the Level 3 committees were to adopt their own rules of procedure, the Commission declared it would be their task to change their charters in this respect. However, the Commission threatened to pursue a change of the committees' legislative frameworks if-should they ~~failed~~ to comply with the proposal. Moreover, the Commission called on the Level 3 committees to reach an internal agreement, by which minorities would have to accept the will of the majority instead of blocking proposals. In addition, the Commission suggested the inclusion of some sort of disciplinary measure in the committees' charters. This would in order to enable the committees to effectively deal with committee members who failed to comply with majority decisions.

Finally, the Commission argued that the decisions of the committees were by far not as influential as envisaged by the Lamfalussy Committee. Numerous day-to-day supervisory measures agreed upon at Level 3 were implemented inconsistently or not at all by the Member States. Often the Member States authorities issued guidance which diverged from the guidance issued by the Level 3 committees. The Commission found that despite the previous efforts, large areas remained unharmonised and national practices were still favoured over European approaches.

The Commission identified the non-binding nature of the Level 3 provisions as one of the main weaknesses of the regulatory framework. As the Lamfalussy Committee had done before, the Commission explicitly expressed the need to provide the Level 3 committees with regulatory powers of their own. However, the Commission acknowledged that this option was not realistic due to widespread political opposition regarding the centralisation of power at the EU level. Instead, the Commission called on the Member States to respect the independence of their representatives and request their supervisors/regulators to agree to full application of Level 3 common standards and guidelines⁷⁰ (Review 10).

2.2.2.2009 Redrawing of the Committees in 2009

Comment [JGB58]: please refer to comment JGB48 on page 9!

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The review of the Lamfalussy process eventually led to three Commission Decisions,¹³ which redrew the Level 3 committees' competencies and responsibilities. Many of the proposals and calls voiced in the review were taken into account, most obviously, the harmonisation of the legislation establishing the Level 3 committees themselves. The competencies and the tasks given to the committees were almost identical. The primary tasks were to ~~contribute~~ contribute to the common and uniform implementation and consistent application of Community legislation by issuing non-binding guidelines, recommendations and standards ~~(Article 3)~~ and to ~~enhance~~ enhance cooperation between national supervisory authorities ~~(Article 4)~~. The committees were also given a set of additional, clearly defined tasks such as to mediate between supervisors, to actively promote information exchange and the delegation of tasks between supervisors, to ensure the functioning of the colleges of supervisors, to contribute to common supervisory reporting standards and to review the practical application of guidelines, recommendations and standards. The Level 3 committees also received the task to ~~developed~~ develop new practical convergence tools to promote common supervisory approaches ~~(Article 4)~~. Additionally, the committees were charged to enhance the cross-sectoral consistency of their work. This was to be achieved by ~~the organisation of~~ the organisation of ~~the participating participation~~ in ~~sectoral and cross-sectoral training programmes~~ (Article 6 Para 2). These programmes were aimed at developing sectoral and cross-sectoral practices and competencies throughout the European supervisors. Moreover, the committees were to ensure consistency through close and continuous cooperation with the other Level 3 committees. To ensure the necessary high-level contact, the Chairs of the committees were charged to meet at least once a month (Article 9). The new legislation significantly increased the scope of the committees. This is especially true in the case of the CESR, which ~~prior to the new regulation~~ had had only advisory competencies prior to the new regulation.

Apart from increasing the scope of the committees, the new legislation also intended to render them more transparent and accountable. For this reason, the reporting obligations of the committees were increased and a formal obligation for identifying yearly targets was included in the legislation. In terms of reporting standards, the committees were now obliged to produce two reports a year instead of one. Moreover, these reports were to be more detailed than in the past and needed to include information on ~~micro-prudential trends, potential risks and vulnerabilities~~ (Article 5 Para 4). Additionally, the committees were charged to assess the convergence in supervisory practices in the Union. This assessment was to be a continuous process and the committees had to produce a yearly report describing in detail

Comment [JGB59]: Doesn't work like this. Perhaps start the citation a word later? → ...received the task to develop "new..."

Comment [JGB60]: Do you want to say that these competencies were to be developed consistently for all EU supervisors? The way you use 'throughout' here makes the sentence sound slightly weird. Suggestion: ... aimed at developing consistent sectoral and cross-sectoral practices and competencies of all supervisors throughout the EU.

Comment [JGB61]: draft

¹³ Directives 2009/77/EC (securities), 2009/78/EC (banking), 2009/79/EC (insurance).

their achievements and explaining their failures. The lack of detailed working plans and targets for the committees ~~was addressed by~~ required the committees to draw up detailed yearly plans ~~which including~~ specified targets ~~in detail~~. However, neither disciplinary measures nor an explanatory duty in case of failure to achieve the targets was referred to in the legislation, and the fact that the committees were to determine their own targets somehow restricted the impact of the obligation.

Finally, the decisions explicitly called for a change of the decision-making process in the committees. While still promoting consensual decision making, the committees were now required to use the qualified majority voting procedure. This enabled them to take decisions, even if no consensual agreement could be reached. Moreover, the Commission called for the inclusion of a provision in the committees' charter, which formally obliged opposing minorities to bend to the will of the majority and adhere to the decisions. Members of the committee who failed to ~~follow the guidelines, recommendations, standards and other measures agreed~~ (Article 14) on by the committees could be called on to explain their non-compliance.

2.2.3. EVALUATION ~~OF 2009~~ Evaluation of the ~~Changes in 2009~~ HANGES

Whereas the extension of the competencies and tasks of the Level 3 committees called for greater cooperation between supervisors and convergence of supervisory practices, ~~it did not address~~ one of the greatest weaknesses of the Level 3 committees – the lack of binding powers ~~– was left unaddressed~~. The complete reliance on soft-law instruments resulted in initiatives of the committees lacking the necessary force and ~~despite the increasing~~ integration and interdependence, financial supervision in Europe still remained almost exclusively a Member State affair~~”~~ (Verhelst 5) after the reform. Moreover, while the European Member States clung to their supervisory powers, the national financial institutions spread internationally, and the national supervisors lost the ability to provide effective supervision. Even though initiatives such as the institution of colleges of supervisors attempted to address this problem by improving cooperation and information exchange between national supervisors, the continuously voluntary nature of these initiatives impeded their effectiveness.

The reform did not noteworthyly improved the potential for harmonisation, as the main weaknesses of the framework were left untouched. The continuing reliance on directives as legislative instrument of choice still allowed the Member States to adapt the framework as it suited them best. This drawback and the lack of power to enforce initiatives were the main

Comment [JGB62]: Does not work; suggestion: resulted in the decision to require the...

Comment [JGB63]: you use an inconsistent spelling of decision making. Here it is hyphenated, but in the line below it is not. On page 8, there are two other instances where it is spelled without a hyphen. One of the instances is enclosed in a directly cited in-text reference (page 8, see comment JGB44). Decision making can be written both with and without a hyphen, the hyphenated version might be a bit more common. If your in-text reference on p. 8 is correct in the sense that decision making is written without a hyphen in the original, then I would write it without a hyphen throughout the whole dissertation. If you made a mistake in copying the quotation and it is hyphenated in the original, I would hyphenate it throughout your paper.

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Comment [JGB64]: I would recommend to change this to a passive formulation, as suggested in the text, because an extension cannot address something. I use a passive construction, however, the problem is solved.

obstacles to achieving harmonisation throughout the EU. Apart from stating its inappropriateness, the new legislation ultimately did take little action against gold-plating and regulatory arbitrage. The EU measures had resulted in an approximation of the financial regulatory frameworks and the supervisory arrangements; however, despite having to adopt the same standards, Member States' discretion resulted in the regulatory landscape across the EU being far from presenting a level playing field.

Comment [JGB65]: Ambiguous. Suggestion: apart from stating the inappropriateness of gold-plating and regulatory arbitrage, the new legislation ultimately did take little action against such delinquencies.

Comment [JGB66]: serving as

The cooperation between supervisors had also not significantly improved. While the committees were officially charged to improve cooperation and mediate between the supervisors, they were lacking the power to enforce any measures. The direct cooperation between the national supervisors remained insufficient. Especially in the context of cross-border institutions, the lack-absence of cooperation stands out is particularly prominent. In theory, the home supervisor and the host supervisors were to work together. In practice, however, the home country supervisors did not need to cooperate with host country supervisors as ultimately, the decision making power was with them alone.

Comment [JGB67]: The two terms "lack" and "stand out" are a little colloquial. Please see the alternative suggestion I inserted into your text.

3. Financial Crisis – De Larosière

3.1.1- The Causes of the Financial Crisis

AROSIÈRE

The international financial crisis was caused by numerous interacting reasons factors. In the decade before the crisis, the financial markets enjoyed the benefits of substantial amounts of available liquidity in combination with low interest rates. This climate encouraged debt-making on personal as well as on national levels. In the USA, where the crisis originated, personal savings in percentage of disposable income fell from 7 per cent in 1990 to below zero in 2005 and 2006. The technological advancements and the concomitant financial innovations amplified and accelerated the consequences of excess liquidity and rapid credit expansion (De Larosière 7). The accumulation of debt was further reinforced by US housing policies, which created a significant housing-bubble. The US policies aimed at promoting home ownership among low income households. Strong political pressure on government sponsored entities (GSEs) like Fannie Mae and Freddy Mac (De Larosière 7) in combination with an under-regulated system of mortgage lending and debt securitization led to a rapidly expanding amount of mortgages, in particular subprime

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mortgages.¹⁴ ~~In the USA, s~~Subprime mortgages ~~in the USA~~ increased almost threefold from \$180 billion to \$625 billion in 2001 and 2005, respectively.

Simultaneously, ~~heavy investments in US government securities were taken up by a~~ number of developing countries with surpluses, ~~notably particularly China, began to invest heavily in US government securities.~~ As a result, the profitability of these bonds decreased, and many investors turned to riskier financial products to generate sufficient profit. As a result of the increasing risks, market participants tried to spread risks and continuously developed new and increasingly complex and opaque techniques and instruments of securitization. The spreading of risk and securitization of assets are generally viable principles. However, both market participants and regulators greatly misjudged the risk and the treacherous structure of some securitization instruments (D e Larosi re 8).

Prior to the crisis, it had become common practice to securitize by means of mortgage-backed securities and collateralised debt obligations. Whereas the securitization and risk spreading through these instruments ~~appeared seemed to be~~ sufficient on the surface, the poor quality of the underlying assets was not recognised, or the threat underestimated. Moreover, the complex nature of the securitization instruments greatly reduced the transparency of parts of the financial markets. This led to many actors having ~~“little knowledge of either the size or location of credit risks”~~ (D e Larosi re 8).

The ~~“perverse incentives”~~ (D e Larosi re 9) created by the originate-to-distribute system further increased the poor quality of the assets constituting the basis for mortgage backed securities and collateralised debt obligations. Lenders ~~who knew that they would~~ sell their entire credit default risk to ~~someone else~~ had little incentive to ensure high standards of lending. Moreover, corporate governance structures and shareholder pressure motivated market participants to take excessive risks. The entire financial industry, from remuneration and incentive schemes to accounting standards, increasingly favoured short term profit over long term stability (D e Larosi re 30).

Credit Rating Agencies (CRAs) also played an important role in amplifying the downward spiral and decreasing the awareness of potential default risks. Many structured financial instruments, such as senior tranches of collateralised debt obligations, were given AAA ratings despite the weakness of their underlying assets. AAA ratings are normally given to extremely safe assets with very low default risks, such as government securities or highly reliable corporate bonds. The inappropriate evaluation of the default risks by CRAs can be

¹⁴ Mortgages which are less likely to be repaid due to the financial situations of the debtor. Subprime mortgages pose a greater risk for the lender, therefore more interest is charged on them and terms and conditions are less favourable.

Comment [JGB68]: intending to

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largely attributed to an inaccurate rating methodology and to conflicts of interests originated originating in the organisational structure of CRAs. CRAs are profit-orientated companies which offering a service and operating in a competitive market. Their paying customers are the issuers of the rated. In theory, ratings are indicative of the objective reliability of bonds. In practice, however, the unregulated nature of the market for ratings enabled issuers to choose the CRA, which guaranteed them an AAA rating. The demand for AAA ratings was further increased by some regulators demanding requiring that investors to only invest in AAA-rated assets.

Comment [JGB70]: I think there is an object missing...

The financial sector is an industry which relies to a large extent on mutual trust. The financial crisis had such a devastating impact, because a large part of this trust was destroyed at large. When the US Government refused to save Lehman Brothers, and CRAs suddenly began to downgrade their ratings, it came to “a wide-spread breakdown of trust and a crisis of confidence” (De Larosière 12). This was further reinforced by the lacking transparency of the market and the internationalisation of finance. Investors and banks did simply not know were unable to identify those which institutions which were still reliable and financially sound, and to recognise those which had amassed large amounts of low-quality assets and were in danger of going bankrupt. As a result, inter-institutional money lending virtually stopped, “thus creating a large scale liquidity crisis” (De Larosière 12), which further amplified the scope of the crisis.

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3.2. EU Supervisory Failure

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Whereas the EU supervisors are not directly responsible for most of the causes of the financial crisis, the inadequacy of the EU supervisory and regulatory framework played an important role in the manifestation and the course of the crisis. In order to address the individual flaws of the framework, the De Larosière Group divided the duties of the supervisors in the EU into three main tasks – implementation and harmonisation of rules, prevention of crisis manifestation and management of crises. Unfortunately, the crisis showed that the EU framework was not set to fulfil any of these tasks satisfactorily.

The regulatory and supervisory framework was not harmonised in many important areas. Indeed, one of the most serious problems identified by the De Larosière Group was the “lack of a consistent set of rules” (27). The main reason for this lack of cohesion had been national discretion in interpreting and implementing EU legislation. The actors involved

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in the harmonisation process, such as finance ministries, national supervisors and central banks, ~~often~~ regularly did not trust each other and/or did not ~~share~~ pursue the same goals. Fierce competition between national financial centres made matters even worse. Whereas the Member States had theoretically committed themselves to work towards harmonisation, the practice looked different. The problem posed by the lack of harmonisation had been already identified in the Lamfalussy Report and the Commission Review, which had explicitly pointed to it as one of the major flaws of the European financial framework. Despite the warnings, the core problems had not been eliminated. These problems were the predominant use of directives at Level 1 and Level 2 of the Lamfalussy framework and the weakness of the Level 3 committees. Whereas the use of directives had left Member States “a range of national options” (Dede Larosière 27) and resulted in widespread gold-plating and regulatory arbitrage, the Level 3 committees ~~had did~~ not dispose of the necessary competencies to effectively promote harmonisation, let alone the power to enforce common rules throughout the EU.

Comment [JGB73]: Suggestion: ‚let alone‘ needs to be followed by a noun, otherwise the sentence structure does not make sense.

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The flaws in the organisation of crisis prevention and early warning mechanisms were significant. Especially the lack of a macro-economic level of supervision greatly impeded the ability of supervisors to detect and prevent the crisis. Even though there had been some warnings about the macro-prudential risks in the financial sector, no remedial measures were initiated, as the supervisory system did not contain mechanisms to translate such warnings into action. Because of the micro-centred viewpoint of supervisors “too much attention was paid to each individual firm and too little to the impact of general developments on sectors or markets as a whole” (Dede Larosière 10). However, grievances at the micro-level also played a significant role in the failure to detect the crisis before its manifestation. Especially information sharing among supervisors was severely underdeveloped, as national supervisors were reluctant to cooperate and “not prepared to discuss with appropriate frankness and at an early stage the vulnerability of financial institutions they supervised” (Dede Larosière 41). In combination with the lack of harmonised reporting standards, this resulted in an inability to effectively determine the degree to which some financial institutions “had accumulated [...] exceptionally high exposure to highly complex, later to become illiquid, financial assets” (Dede Larosière 10). This reluctance was especially pronounced in case of cross-border institutions. Host supervisors, who at least partially realised the seriousness of the situation, had no means to gain adequate information on financial institutions or to challenge the authority of the home supervisor. The shortcomings of the EU framework and of the

organisation of the Level 3 committees are conspicuous. The national authorities were too centred on the national financial institutions and too protective of the national financial systems to take a European dimension into consideration, and the EU bodies were too weak to effectively address this problem.

The financial crisis showed that the ability to initiate multinational actions was severely underdeveloped among EU Member States. Member States predominantly opted for national solutions which were ultimately intended to save the national financial systems, regardless of the interconnectedness of the financial actors and the ramifications of the measures for other Member States. In the few cases in which cooperative solutions were attempted, they were ineffective, uncoordinated or impossible to realise (Verhelst 15). In other cases, the voluntary nature of the cooperative agreements nullified their effects, as actions agreed upon between the supervisors were simply not abided by the individual Member States (Verhelst 15). This is partially attributable to the national authorities' different scopes of competencies, which highly diverged wildly across the EU. However, the major reason for the lack-absence of common crisis management was that the national supervisors' were inability to agree on decisive multinational actions. Essentially, facilitating exactly this kind of cooperation would have been the tasks of the Level 3 committees. However, they had neither the resources nor the competencies necessary to effectively devise and initiate EU-wide solutions. The problem was further reinforced by "little consensus among policy makers and regulators at the highest level on the seriousness of the problem or on the measures to be taken" (De Larosière 11). In the end, the committees were unable to contribute effectively to the management of the crisis and swift, decisive, coordinated and effective actions of supervisors did not take place.

3.3- The De Larosière Recommendations

A highly important point made by the De Larosière Group was the pronounced difference between, but the equal importance of macro-prudential and micro-prudential supervision. These two supervisory concepts are intrinsically interlinked, but comprise different tasks and objectives. Micro-prudential supervision concentrates on the individual financial entity and aims to protect the stakeholder involved with the entity. Macro-prudential supervision, however, is focused on the stability of the financial system as a whole in order to "protect the overall economy from significant losses in real output" (38). The two supervisory dimensions are highly interdependent and must complement each other in order

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to guarantee systemic stability. There can be no effective macro-prudential supervision if the supervisors at this level have no means of influencing micro-level processes; simultaneously, without being aware of and considering macro-level trends, micro-prudential supervisors cannot effectively fulfil their duties.

In order to create effective mechanisms for macro-prudential supervision, the Group recommended the creation of a new supervisory body at EU level. Among other details specified in the [D e Larosi re Report](#), the Group identified two crucial prerequisites for the effective functioning of the proposed body. First, the sharing of information between micro-prudential and macro-prudential supervisors must be mandatory. Second, mechanisms must be introduced which guarantee early identification of risks and the subsequent translation of these warnings into action ([D e Larosi re 46](#)).

In terms of micro-prudential supervision, the Group called for a significant reform of the existing system. Whereas the Group acknowledged the Level 3 committees' contribution to the financial integration process, it pointed out that the committees are not able to fulfil their tasks without extending their competencies. For this reason, the Group proposed to upgrade the Level 3 committees into formal EU authorities. The new authorities' tasks would include to ["coordinate the application of common high level supervisory standards, guarantee strong cooperation with other supervisors and \[...\] guarantee that the interests of host supervisors are properly safeguarded"](#) ([D e Larosi re 47](#)). In order to be able to fulfil these tasks and respect the principles of the EU, the new authorities' ["work must be independent from the political authorities, but fully accountable to them"](#) ([D e Larosi re 479](#)). The Group identified several key provisions necessary to facilitate these aspirations. The envisioned authorities should be equipped with a clear mandate, a defined set of tasks, [their own budget and sufficient legal powers](#). Especially the legal powers were identified as being of utmost importance and should include a binding mediation role, licensing and supervision of CRAs, legally binding interpretation powers for Level 1 and Level 2 measures and the power to supervise and sanction national supervisors. In addition, the Group strongly recommended the expansion of the system of colleges of supervisors. They proposed to make colleges mandatory for every cross-border financial institution operating within the EU and [to attribute an important role in the colleges to the new authorities](#).

[4. The New System](#)

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The de Larosière Report proved to be highly influential and the EU Institutions realised many of its recommendations, including a major reform of the supervisory framework at the EU level, which created the European System of Financial Supervision (ESFS). Most notably, the ESFS has both a macro-prudential and a micro-prudential supervisory dimension. At the macro-prudential supervisory level, the European Systemic Risk Board (ESRB) was established. At the micro-prudential level, the supervisory framework was rearranged and the Lamfalussy Level 3 committees were formally upgraded into European Supervisory Authorities (ESAs), which are equipped with more power and greater competencies than the original Level 3 committees.

4.1. The European Systemic Risk Board

The European Systemic Risk Board (ESRB) is a completely new body in the European supervisory configuration. The main objectives of the ESRB is to “contribute to the prevention or mitigation of systemic risks to financial stability in the Union” (EU Regulation No 1092/2010, Art. 3). The ESRB has been charged to collect and analyse all necessary information to identify systemic risks, to issue warnings and recommendations and to work in close cooperation with all the members of the ESFS. The current tasks of the ESRB can be further expanded by means of EU legislation. However, despite the highly important task of the ESRB, it has not been given a legal personality or binding powers.

Due to the absence of regulatory powers, the “diverse internal structure [...] is all the more important” (Verhelst 21). The ESRB is composed of five departments. The main decision making body is the General Board, which is guided by the Steering Committee. The General Board and Steering Committee are advised and supported by the Advisory Technical Committee, the Advisory Scientific Committee and the Secretariat. The organisational structure of the ESRB was designed to enable the General Board to arrive at decisions based on the highest possible ~~degrees~~ amount of information and expertise.

The ESRB is chaired by the President of the ECB. However, the ECB chairmanship is limited to a five-year period, after which a permanent procedure for ~~choosing~~ the selection of the Chair is to be determined (Article 5). The reason for this arrangement is a compromise between the EP and non-eurozone Member States. Whereas the EP had strongly argued in favour of the ESRB being chaired by the ECB President, non-eurozone Member States had opposed this arrangement. They argued that the ECB was likely to favour a eurozone-friendly

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Comment [JGB76]: Who is this? Here again, the full name has not been introduced yet. (See comment JGB18)

Comment [AW77]: Unclear. Does this mean the first Chairmanship is not determined through the same procedure as the second Chairmanship??

approach, which would result in them being disadvantaged (Verhelst 22). As part of the bargain, the first Vice-Chair will represent the non-eurozone Member States. The second Vice-Chair is the Chair of the Joint Committee of the ESAs.

4.1.1. Organisation

The General Board

The General Board is the main body of the ESRB and responsible for deciding on the actions ~~taken by~~ the ESRB ~~is going to take~~. It is to meet at least ~~four~~4 times a year, with all the members being obliged to participate personally. There can be additional meetings if the Chair, or at least one third of the members, regards them as necessary (Art 9/1).

One of the goals in ~~creating~~ ~~establishing~~ the ESRB was to create a body including all supervisors. Consequently, the number of members on the General Board is relatively large. Altogether, there are 66 members, of which 37 have voting rights. As specified in Article 6 of the Regulation, members with voting rights are:

- the President and the Vice-President of the ECB
- the Governors of the national central banks
- a representative of the Commission
- the Chairs of the ESAs
- the Chair and the two Vice-Chairs of the Advisory Scientific Committee
- the Chair of the Advisory Technical Committee

The non-voting members of the General Board are the President of the Economic and Financial Committee (EFC), the Head of the Secretariat and representatives of the competent national authorities. ~~Should~~if the national authorities ~~can~~not ~~be able to~~ agree on a common representative, their membership on the General Board is to rotate according to the sector under discussion.

By rule, the General Board takes decisions by simple majority. The sole exception is when the General Board ~~intends~~wants to make a recommendation or ~~to~~ warn ~~the~~ing public. To take this step, two-thirds of the voting members must cast their vote in favour of the initiative (Article 10).

The Steering Committee

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The task of the Steering Committee is to prepare the meetings of the General Board, to review the documents to be discussed in the meetings and to monitor the ESRB's progress. The Steering Committee consists of selected members of the General Board. As defined in Article 11, these members are:

- the Chair and the Vice-Chair of the ESRB
- the Vice-President of the ECB
- four members of the General Council of the ECB (balanced representation of eurozone and non-eurozone Member States must be guaranteed)
- a representative of the Commission
- the Chairs of the ESAs
- the President of the EFC
- the Chair of the Advisory Scientific Committee
- the Chair of the Advisory Technical Committee

Additionally, the Head of the Secretariat attends the meeting as non-voting participant.

The Steering Committee meets ~~previously prior~~ to every meeting of the General Board, which is at least four times a year. The Steering Committee ~~““~~is likely to play a crucial role in the functioning of the ESRB~~“”~~ (Verhelst 23), as it effectively determines the agenda of the General Board's meetings.

The Advisory Technical Committee (ATC)

The Advisory Technical Committee (ATC) ~~ATC's task is to~~ provides the ESRB with advice and assistance (Article 13). In more specific terms, the ATC will advise the ECB on draft regulation reports it produces for the ERSB, prepare the analytical grounds for meetings of the General Board and the Steering Committee, monitor the use of macro-prudential tools by the Member States, and review the effectiveness of these tools (ATC mandate 1). The ATC will be composed of over 60 experts, who are determined by Article 13 of the ESRB Regulation. The members are:

- a delegate of each central bank
- a representative of the ECB
- a representative of the competent authority of each Member State (sectoral representatives rotate seat if the national authorities cannot agree on a common representative)

- one representative of each ESA
- two representatives of the Commission
- a representative of the EFC
- a representative of the Advisory Scientific Committee

The Chair will be designated by the Chair of the ESRB and participate in the meetings of the Steering Committee and the General Board.

Advisory Scientific Committee (ASC)

The Advisory Scientific Committee (ASC) is focused on contributing to the delivery of the ESRB's task through analytical and consultative tasks (ASC Mandate). This includes continuous revision and improvement of methodologies used for detecting systemic risks and assessing their possible magnitude and the development of macro-prudential and analytical tools and models. Moreover, the ASC is to consult the ESRB on policy framework enhancements by means of an open, independent and analytical review of macro-prudential strategies and operational frameworks (ASC Mandate).

The ASC will be composed of the Chair of the ATC and 15 independent experts, who are nominated for a period of four years and can be nominated for consecutive terms. These experts cannot be members of the ESAs and should present various backgrounds and sectors, such as academia, trade unions, small and medium-sized businesses, financial institutions and consumer organisations (ASC Mandate). The ESRB publicly encouraged applications for the positions. Ultimately, the Steering Committee will propose the candidates to the General Board, which will decide on the appointments (ESRB Regulation Article 12)

The Secretariat

The Secretariat is to assist the other departments and takes care of the day-to-day business of the ESRB. The entire staff of the Secretariat are employees of the ECB. Moreover, the ECB directly appoints the Head of the Secretariat, who has an important function and takes part in all the discussions of the Steering Committee and the General Board. The ECB's power in the ESRB has been greatly enhanced by this arrangement, and non-eurozone Member States have raised their concerns. As it was the case with the ECB's chairmanship in the ESRB, non-eurozone Member States fear that the prominent role of the

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ECB will result in a disproportional focus on the euro-zone and will disadvantage Member States outside the monetary union (Verhelst 23).

Comment [JGB79]: Is this supposed to be hyphenated, as fixed expression? And isn't euro area the more formal expression?

4.1.2. Tasks

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The ESRB's main task is the macro-prudential supervision of the European financial system. It is to "contribute to the prevention or mitigation of systemic risks [...] taking into account macro-economic developments" (Art. 3 Para. 1). In order to achieve this ambitious goal, the ESRB has been assigned a set of specific tasks and obligations.

First, the ESRB needs to determine, collect and analyse all the necessary data and use this information to identify and prioritise systemic risks (Art.3 Para. 2). Second, if the ESRB identifies a systemic risk, it is responsible for issuing warnings on the risks and recommendations on possible counter-measures. If the ESRB deems it necessary, it is to announce these warnings and recommendations in public. Moreover, the ESRB is to monitor and evaluate whether the warnings are heeded and the counter-measures are initiated as in the way envisioned by the ESRB. Third, the ESRB must closely cooperate with other authorities, be they national, European or global. The cooperation must be especially pronounced with the ESAs, and the ESRB is to participate in the Joint Committee of the ESAs. The ESRB is obliged to share information with the ESAs and co-develop a "common set of quantitative and qualitative indicators (risk dashboard) to identify and measure systemic risk" (Art. 3 Para. 2). Finally, the ESRB must confidentially notify the Council of any imminent threat to financial stability and provide advice as well as a detailed assessment of the situation. Based on the data provided by the ESRB, the Council will decide whether or not to declare an emergency situation (Art. 3 Para. 2).

Comment [JGB80]: 3 times "is to". Please see my alternative suggestion in your text.

Comment [JGB81]:

Comment [JGB82]:

Collection and Exchange of Information

The sharing of information had been one of the major weaknesses in the pre-crisis framework. In order to improve on this account, the new system has specific rules on how to acquire and share relevant data. The ESRB is obliged to receive "all the information necessary for the fulfilment of its task in accordance with Union legislation" (ESRB Regulation Art. 15 Para. 2). This information must be provided by national supervisors, the ESAs, the Commission, national statistics authorities and the European System of Central Banks (ESCB). In turn, the ESRB is to provide all necessary information on systemic risks to the relevant ESA and the Council. However, any information provided to

the ESRB must be “in summary or aggregate form such that individual financial institution cannot be identified” (Art. 15 Para. 3). Moreover, the ESRB has not been given any tools to raise information on its own but “relies completely on data raised by external sources” (Verhelst 25), and it is obliged to “obide by ~~keep to~~ strict procedural rules for obtaining information. First, the ESRB is to process existing data provided at the EU level by the ESCB or the European Statistical System (Art. 15 Para. 4). If the available datae proves to be insufficient, the ESRB can request data from the ESAs. If this does not deliver the desired results, the ESRB can “request the information from the ESCB, the national supervisory authorities or the national statistics authorities” (Art. 15 Para. 5). If the necessary information cannot be provided by any of these institutions, the ESRB ~~mayean~~ request it directly from the concerned Member State. The only possibility for the ESRB to obtain information on an individual financial institution is to file a formal request outlying the systemic relevance of the information. Additionally, the ESRB cannot file a request without prior approval of the relevant ESA (Art. 15 Para. 6/7). These arrangements have been seen as a possible handicap to the ESRB’s efficiency (Verhelst 25).

Comment [AW83]: institutions?

Warnings and Recommendations

Warnings and recommendations are the tools given to the ESRB. Whenever the ESRB identifies a risk to financial stability, it has to issue a warning and it may issue recommendations on counter measures. The ESRB can address its warnings or recommendations to different levels. They may be addressed to the whole EU, the Commission, the ESAs, the Member States or the national supervisory authorities. However, the ESRB cannot issue warnings or recommendations to individual financial institutions, regardless of their size or systemic importance (Art. 16 Para. 1 and 2). In general, the warnings and recommendations are confidential and only the addressees, the Council and the Commission are informed of their issuing. The recommendations and warnings are non-binding, and the ESRB has no means of enforcing particular actions based upon them. The only possibility to attribute more weight to the warnings and recommendations is to ~~publicise~~make the names of their addressees and their content ~~public~~. However, this ~~is~~ hardly ~~is~~ a substitute for binding powers. Moreover, concerns have been raised that publicising warnings or recommendations may have unintended and dangerous “side effects, such as panic in the financial market” (Verhelst 26).

If the ESRB issues recommendations, the addressees must report back to the ESRB and the Council and explain their actions in detail. If the ESRB finds that the actions were

insufficient, it is to “inform the addressees, the Council and, where relevant, the European Supervisory Authority concerned” (Art. 17 Para. 2) of its opinion. If a reaction to a publicised recommendation is judged insufficient by the ESRB, the EP may invite the Chair of the ESRB to elaborate the reasons for the judgement. The addressees of the recommendation may request to be allowed to participate in the hearing and to ~~elaborate~~ **express** their position.

Comment [JGB84]: 2 x elaborate

There are some serious drawbacks in the organisation of the ESRB, most notably the absence of binding powers. Some coercive power has been attributed to the ESRB by means of the explanatory obligations on account of the addressees and the option to publicise warnings and recommendations. The legal obligations of EU Institutions and national supervisors to cooperate with the ESRB also strengthen it to some degree. However, considering the complex task of the ESRB, it is questionable if these provisions will be sufficient. Verhelst argues that the ESRB will have to “rely for a major part on its reputation, instead of coercive powers”. This reliance on reputational effects has the potential to ~~cause~~ a functional predicament. In order to ~~establish~~ **have** a **high-good** reputation, the ESRB must be careful to issue only substantive warnings. However, if it is overly concerned with ~~making sure to avoid~~ **uncertain warnings**, it ~~is endangered~~ **will run the risk of** ~~to issue~~ **warnings to** late, or **to underestimate** the magnitude of a risk.

Generally speaking, the ESRB has been given a highly complex task but it is lacking real power. This could seriously diminish the ~~ESRB's~~ **influence of the ESRB**, as “assessment of macro-prudential risk remains an intellectually challenging task, and policy makers will continue to be doubtful of warnings that could undermine short term growth” (Verhelst 29).

The **size of the** General Board's ~~size~~ **may become another problem for the efficient functioning** of the ESRB. Due to the high number of participants, it will be a challenging and lengthy process to discuss macro-prudential issues. Moreover, arriving at an effective decision will be even more difficult. Initially, the single majority voting promises a fast and efficient decision-making process. However, as the ESRB has no binding powers, the decisions will need to be **based on** consensus, ~~embraced by~~ **among** the large majority of the General Board's members. If the General Board arrives at a decision which is only supported by a narrow majority, the decision may easily be contested and ultimately even disregarded. The implicit need for consensus might result in watered down compromises ~~which attempting to~~ **to accommodate** many different interests **and being** ~~are~~ **consequently** ~~be~~ less effective (Verhelst 30).

Comment [AW85]: may further impede the efficiency

Another notable point is the ERSB's imbalanced representative structure. The ERSB is largely dominated by central banks. In the General Board, three out of four voting members are central bankers, and the entire Secretariat is staffed and funded by the ECB. The dominance of central banks has limited the sectoral comprehensiveness of the ESRB and hinders "the ESRB's ability to detect and respond to systemic risks" (Verhelst 30), as this is not necessarily the area of central bankers' expertise. Moreover, financial stability and inflation targeting, a central bank's core objective, may not always be compatible and might lead to conflicts of interest in the ESRB. These conflicts could "could potentially lead to Board members neglecting their responsibilities as members of the General Board, which is for most of them after all only a secondary responsibility" (Verhelst 30).

4.2: The MICRO-PRUDENTIAL SUPERVISION-European Supervisory Authorities

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The De Larosière Report caused a significant reorganisation of the micro-prudential supervisory framework. As the Report had called for, the Level 3 Lamfalussy committees were upgraded into form the European Supervisory Authorities (ESAs) and incorporated into an overall structure comprising the three ESAs, the Joint Committee of the ESAs and the Board of Appeals. The ESAs are the most important bodies in this framework and were granted own legal personalities and the status of distinct EU authorities. The European Banking Authority (EBA) substituted the CEBS, the European Market and Securities Authority (EMSA) substituted the CESR, and the European Insurance and Occupational Pensions Authority (EIOPA) substituted the CEIOPS.

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4.2.1: Organisation

Joint Committee

To ensure efficient inter-sectoral cooperation and supervision of financial conglomerates, the ESAs are to cooperate within the Joint Committee, which is built upon the previous L3L arrangements. The Joint Committee consists of the Chairpersons of the ESAs and, depending on the topic, the Chairs of relevant subcommittees (see Art 57). Moreover, the Executive Directors as well as representatives of the Commission and the ERSRB may participate as non-voting members in the meetings. These meetings must be held at least once

every two months. Chairmanship of the Joint Committee is to be annually rotated among the Chairs of the ESAs. The Joint Committee should act as a forum for cooperation between the ESAs. Moreover, it establishes an important interface between micro and macro-prudential supervision, as the Chair of the Joint Committee is the Vice-Chair of the ESRB. Due to its frequent meetings, the Joint Committee has the potential to remedy one of the major shortcomings of the precious system and to greatly improve cross-sectoral cooperation and information sharing (Art. 54-57).

Board of Appeals

The Board of Appeals is intended to balance the ESAs powers and create a mechanism that allows for the timely contestation of their decisions without a full-blown case in front of the European Court of Justice (ECJ). The Board is to consist of six permanent members ⁵⁵ of a high repute with a proven record of relevant knowledge and experience, including supervisory experience⁵⁶ (Art 58 Para 2) in any of the financial sectors. A list of candidates will be compiled by the Commission, and each ESAs is ~~two~~ select ~~choose~~ two members. The term of office on the Board of Appeals is five years, in which the members must act entirely independent and solely in the interest of the public. Any person, natural or legal, affected by an⁵⁷ ESA decision may address an appeal to the Board. Filing an appeal does not suspend an ESA decision. If the Board decides in favour of the appeal, the ESA must adopt the contested measure according⁵⁸ly to the Board's decision. However, whatever the Board's decision, it may be contested in front of the ECJ.

ESAs

The ESAs are the most important parts of the new supervisory system. Reflecting the commitment for harmonisation and regulatory convergence, the organisational structure of the ESAs is almost identical. The major actors in an ESA are the Chairperson, the Executive Director, the Board of Supervisors, the Management Board and Stakeholder Groups.

The Chairmanship of an ESA is a full-time position only available to independent individuals. The Chair will be appointed by the Board of Supervisors for a period of five years. The Chairperson's ~~His~~ tasks are to prepare the meetings of the Board of Supervisors, preside over the meetings of the Board of Supervisors and the Management Board and to take part in the Joint Committee (Art. 48, 49).

The Executive Director must be a full-time individual professional and is appointed by the Board of Supervisors. The main tasks of the Executive Director are the day-to-day

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management of the ESA and the preparation of the Management Board's meetings. These tasks include drafting and implementing annual work programmes, ~~drafting a multi-annual work programme~~, compiling a draft report on the ESA's activities and preparing a preliminary draft budget. Throughout his duty, the Executive Director is advised and supervised by the Board of Supervisors and the Management Board (Art. 51-53).

The Board of Supervisors is the primary decision-taking body of an ESA. The voting members of the Board of Supervisors are the Heads of the competent national authorities. Non-voting members include the ESA's Chairperson and Executive Director and representatives of the Commission, the ESRB and the other ESAs. The Board of Supervisors must meet at least twice a year. The members of the Board of Supervisors are legally obliged to put aside any other loyalties and obligations and act solely in the interest of the Union. The Board of Supervisors has numerous tasks. It develops technical standards, issues opinions and recommendations, adopts annual and multi-annual work programmes and appoints the Chairperson and the Executive Director. The decision making process is normally conducted by simple majority. There are some exceptions to this, such as decisions on technical standards, for which a qualified majority is necessary (Article 40-44).

The Management Board is charged with ensuring the efficient functioning of the ESA. It is composed of the Chair of the ESA and six members of the Board of Supervisors. A representative of the Commission also participates in the meetings of the Management Board and has voting rights, which are restricted to budgetary affairs. The meetings have to take place at least ~~five~~5 times a year and prior to every meeting of the Board of Supervisors. The Management Board wields considerable power, as it prepares the meetings of the Board of Supervisors. Through the small number of members, the Management Board can take preliminary decisions quickly and has an important role in guaranteeing the efficiency of the ESA (Article 45-47).

The Stakeholder Groups provide advice to the ESAs. They are composed of 30 members representing academia, financial institutions and the employees and customers of financial institutions. The members are appointed by the Board of Supervisors for a term of ~~2-1/2~~two and a half years. The Stakeholder Groups are qualified to advise the respective ESA in all matters, and their advice is to be ~~made~~ publicised. Whereas, the EBA and the ESA have one Stakeholder Group each, the EIOPA has two, one representing the insurance and reinsurance, ~~the other representing~~and one the occupational pensions sector (Verhelst 38). Prior to submitting technical standards, the ESAs are obliged to consult the respective Stakeholder Group on their opinion. (Article 37)

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4.2.2. Tasks

ASKS

In general, the ESAs have considerable more competencies than the Level 3 committees. However, the ESAs' actual powers vary considerably from task to task (Verhelst 39). Many of the ESAs' powers rely considerably on the cooperation of other supervisors and the goodwill of the EU Institutions. Nonetheless, the ESAs also have powers which enable them to take binding decisions, most notably when a state of emergency has been declared.

The tasks of the ESAs include harmonisation of practices and regulations, fostering a common supervisory culture and cooperating closely with other supervisory bodies, especially the ESRB. Moreover, the ESAs are to monitor and assess market developments in their sectors, organise and conduct peer reviews of supervisory authorities and collect all necessary information (Art. 8 Para. 1). The main objective of the ESAs is to develop a single rulebook for the supervision of the European financial market. This rulebook has been defined as a core set of EU-wide rules and standards directly applicable to all financial institutions active in the Single Market (qtd. Council in Verhelst 39). Whereas these are tasks common to all ESAs, the tasks of the ESMA have already been more specified. The ESMA is the only authority able to license CRAs in the EU. European banks and investors are not allowed to use any ratings which are not issued or endorsed by a CRA licensed in the EU (Lannoo 5).

The tools of the ESAs are guidelines, recommendations, implementing technical standards (ITS) and regulatory technical standards (RTS). The purpose of guidelines and recommendations is to establish consistent, efficient and effective supervisory practices (Art. 16 Para. 1). They can be addressed to both supervisory authorities and individual financial institutions. However, they have no binding powers upon the addressees. The addressees are only charged with making every effort to comply (Art. 16 Para. 1). ~~Should~~ If an addressee does not comply, the reasons for non-compliance must be explained to the ESA. However, the ESA has no means to enforce its decision or sanction the addressees. The only sanction-like option available to the ESAs is the possibility to publish the fact that an addressee did not comply and the explanation the addressee offered for non-compliance.

The competence to develop ITSs and RTSs is a more powerful tool. ITSs relate to standards that need to ensure uniform implementation of EU legislation, without amending legislation (Verhelst 41). In the development process, the ESAs are obliged to consult with the public and analyse the potential costs and benefits of the standard's implementation. In order for an ITS to become binding, the Commission needs to formally endorse the draft.

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RTSs are to “supplement or amend a legislative act, but only those elements which are non-essential” (qtd. TFEU in Verhelst 41). As in the case of ITSs, the Commission needs to formally endorse a RTS to make it legally binding. Within a certain timeframe, the EP and the Council may object to a RTS. ~~If this should~~ this happen, the RTS will not enter into force (Article 13)

If a competent authority fails to adopt binding EU measures, specific steps can be taken. The ESAs are empowered to investigate any possible breach of EU-law. After initiating an investigation, the ESA has up to two months to issue a recommendation, which clearly spells out necessary actions to be taken by the investigated authority. The authority should reply within 10 days and inform the ESA of ~~measures~~ steps it intends to take. If the authority has not replied or not taken remedial steps within one month, the Commission can issue a formal opinion on the matter. If the authority fails to react to the Commission’s opinion as well, the ESAs are empowered to require the necessary actions directly from individual financial institutions (Art. 17). However, this procedure only applies when EU legislation is directly applicable to financial institutions, or if it is “needed to maintain the condition of competition in the market or to ensure the stability of the financial system” (Verhelst 42).

Another task of the ESAs is binding mediation in case of disagreements between competent authorities. It is notable that this power also applies to disagreements within colleges of supervisors. The only prerequisite for the ESAs to become active in this respect is that at least one of the concerned competent authorities must have formally requested the ~~ESAs’~~ of the ESA assistance in finding an agreement. If the request has been made, the ESA determines a conciliation phase during which the authorities in question have to reach an agreement. If no agreement can be found, the ESA will take a decision, which the authorities have to respect. Should they fail to abide by the decision, the ESA has the power to directly address individual financial institutions and require them to take the necessary actions. The ESA’s decision abrogates any earlier decision or ruling on the issue by the competent authorities.

The ESAs are at their most powerful when the systemic stability of the financial system is endangered and an emergency situation has been declared by the Council. Then, the ESAs are to “actively facilitate and, where deemed necessary, coordinate any actions undertaken by the relevant national competent supervisory authorities” (Art 18). Whereas the ESAs are not charged with the overall management of a crisis, they will have access to all necessary information and take part in any relevant meeting of the relevant supervisors. Moreover, in order to prevent Member States from pursuing solely national solutions in an emergency

Comment [JGB88]: At their most powerful what?

situation, the ESA can require national supervisors to initiate specific actions. If the supervisor fails to comply, the ESA may address individual financial institutions. Again, the decision of the ESA would overrule any previous decision by the national authorities (Verhelst 43). Moreover, the ESAs will be able to temporarily prohibit certain financial activities, e.g. short selling, if these are regarded as a threat to financial stability (Article 9).

4.2.3: LIMITS-Limitations of OF theTHE ESAs

Even though the ESAs are more powerful than the Level 3 committees, their competencies are restricted in important ways. Especially the dependence on other EU bodies and the time-intensive procedural obligations have the potential of hampering the ~~ESAs'~~ impact of the ESAs.

Whereas the draft technical standards have the potential of being powerful tools to foster harmonisation and convergence, it is yet to be seen if the ESAs can use them freely. This is predominantly dependent on the Commission, the Council and the EP. The ESAs can only issue draft technical standards, which subsequently need to be endorsed by the Commission to give them binding powers. Additionally, even if the Commission endorses a technical standard, the Council and the EP have the power to negate any standards within a certain timeframe. The effectiveness of these tools and the impact of the ESAs will depend heavily on the willingness of the EU Institutions to respect their independence. Moreover, the technical standards may not prove to be as effective as hoped. Even though, draft technical standards are likely to contribute more to the harmonisation efforts than recommendations and guidelines, they neither exclude gold-plating nor regulatory arbitrage⁶²⁷ (Verhelst 40).

The power of the ESAs to enforce decisions is highly conditional. One prerequisite is a manifest breach of directly applicable EU law. Even if a law is breached, the Commission needs to issue a formal opinion before the ESAs can impose a decision on a national authority. The ESAs may only address an individual financial institution if the national authority does not implement the measures detailed in the Commission's opinion. This process may take a considerable amount of time. It can take up to four months from an ESA decision until the Commission issues an opinion. Additionally, the national authority is to be granted sufficient time to adopt the Commission's instruction. The large timeframe may greatly delay ESA decisions and endanger the goal of a consistent regulatory framework.

The emergency powers of the ESAs are considerable. However, it is unlikely that emergencies will be declared frequently by the Council ~~will declare emergencies frequently~~.

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Moreover, even if an emergency is declared, the actual crisis management is the task of the national authorities. The power to impose measures on the national authorities or individual financial institutions is restricted to cases in which directly applicable EU legislation is violated. Even ~~if this is the~~ in such a case, the ESAs are prohibited by safeguard clauses to impose measures, which would impinge on the fiscal sovereignty of the Member States.

The safeguard clauses are designed to protect the Member States fiscal sovereignty. The safeguard procedures depend on whether or not an emergency situation has been declared. Under normal circumstances, the Member State needs to notify the ESA and the Commission within two weeks of its non-compliance with the ESA decision and give a detailed explanation on how the ESA decision impinges on ~~it~~ fiscal sovereignty. Subsequently, the ESA needs to decide whether or not to maintain its decision. If it decides against maintaining the decision, the ESA has two options: it can amend the decision and ~~make sure effect~~ arrange that it does not for its non-interference with the Member States' fiscal policy, or it can revoke the decision. However, if the ESA decides to maintain the decision, the matter is passed to the Council, which has to decide within two months if the decision is to be maintained or to be revoked. Throughout the whole procedure, the ESA decision is suspended. In an emergency situation, the procedure is shortened. The Member State needs to notify the ESA, the Commission and the Council within three working days of the non-compliance with the measure on grounds of fiscal implications. After the notification, the measure is suspended. In a matter of ten days, the Council needs to ~~take a decision~~ decide if the measure is to be revoked. Should ~~if~~ the Council ~~does~~ not revoke it, the suspension is lifted, and the Member State must conform to the measure. However, if the Member State continues to regard the measure as illegal intervention in its fiscal policy, it may notify the Council of its concerns. The Council will reconsider its decision within a timeframe of eight weeks at the most. However, during this period, the ESA measure will be maintained (Article 38)

5. Evaluation of the European ~~F~~System of Financial Supervisors

Compared to the pre-crisis system, the European System of Financial Supervisors (ESFS) is certainly a major improvement. The fact that the ESFS exhibits a macro-economic as well as a micro-economic dimension already shows this. However, both dimensions are restricted in ways that may seriously hamper them in achieving their task of facilitating harmonisation, convergence and stability.

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In the case of the ESRB, the most obvious restriction is the absence of binding powers. Some coercive power has been attributed to the ESRB's warnings and recommendations by means of the explanatory obligations on account of the addressees and the ESRB's option to go public. The legal obligations of EU Institutions and national supervisors to cooperate with the ESRB strengthen it to some degree, too. However, these provisions are hardly a substitute for binding powers. With regard to the complex tasks of the ESRB, it is questionable if these provisions will be sufficient. Verhelst argues that the ESRB will have to "rely for a major part on its reputation, instead of coercive powers" (Verhelst 29). ~~However~~ Nonetheless, the reliance on reputational effects has the potential to cause a functional predicament. In order to have a high reputation, the ESRB must be careful to issue only substantive warnings. This may lead to an overeagerness of the ERSB being overly concerned with making sure to avoid to prevent that uncertain warnings are expressed, - which would put it in danger In that way, however, the ERSB might run the risk of issuing warnings too late or of underestimating the magnitude of a risk.

The facts that the ERSB has to follow a strict step-by-step procedure in obtaining information and that it is only granted access to general data has also been regarded as a possible handicap to the ESRB's efficiency (Verhelst 25). The procedure the ESRB needs to follow to obtain information may well prove to be highly time consuming and might ~~potentially~~ result in the ESRB ~~in the end~~ eventually not being able to access all the necessary information. The restriction on only using general data could also greatly impede the ESRB. A number of financial institutions have reached a size where they are systemically important, and detailed information on these institutions may well fall under the label "necessary information". Admittedly, the ESRB has the possibility of obtaining detailed information on an individual financial institution as a last resort. However, as the ESRB has to go through the entire information-obtaining cycle before this is possible, the ESRB may receive relevant data too late.

The size of the General Board's ~~size~~ may pose another problem for the efficient functioning of the ESRB. Due to the high number of participants, it will be a challenging and lengthy process to discuss macro-prudential issues. Moreover, arriving at an effective decision will be even more difficult. Initially, the single majority voting promises a fast and efficient decision-making process. However, as the ESRB has no binding powers, the decisions will after all need to be a consensus, embraced by the large majority of the General Board's members. If the General Board arrives at a decision, which is only supported by a narrow majority, the decision may easily be contested and ultimately even disregarded. The implicit

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Comment [AW95]: Even though it is several facts which lead to the described form of procedure, I would still use the singular „fact“ here. The plural reads very clumsy here. Moreover, you are referring to one fact here, namely that the ERSB has to follow a procedure, rather than the several facts which lead to this.

need for consensus might result in watered down compromises, which try to accommodate many different interests and consequently are less effective (Verhelst 30).

Comment [AW96]: attempting

Another notable point is the ESRB's imbalanced representative structure. The ESRB is largely dominated by central banks. In the General Board, three out of four voting members are central bankers, and the entire Secretariat is staffed and funded by the ECB. The dominance of central banks has limited the sectoral comprehensiveness of the ESRB and could impact on "the ESRB's ability to detect and respond to systemic risks" (Verhelst 30), as this is not necessarily the area of expertise of central bankers' expertise. Moreover, financial stability and inflation targeting, a central bank's core objective, may not always be compatible and might lead to conflicts of interest in the ESRB. Such~~These~~ conflicts "could potentially lead to Board members neglecting their responsibilities as members of the General Board, which is for most of them after all only a secondary responsibility" (Verhelst 30). However, the problems arising from the General Board's size and composition could be balanced by the Steering Committee, which most likely will assume a guiding role in the ESRB and has a more balanced and comprehensive composition.

A task that is missing in the ESRB's set of objectives is the supervision of CRAs. Considering the role of the CRAs in the crisis and the macro-economic importance of their ratings, it could have been expected that the ESRB would have some competences in this respect (Lannoo 3).

In general, the ESRB has been given a highly complex task, but it is lacking real power. This could seriously diminish the ESRB's influence, as „assessment of macro-prudential risk remains an intellectually challenging task, and policy makers will continue to be doubtful of warnings that could undermine short term growth" (Verhelst 29). Nonetheless, the ESRB has the potential to acquire a significant amount of influence. Much will depend on how close the ESRB and the ESAs will cooperate in practice. The ESRB and the ESAs ~~have~~are already in close contacts by means of institutional organisation. Building on this~~is~~, they could create cooperative bonds, which could greatly enhance their individual and collective influence.

Compared to the ESRB and the Level 3 Lamfalussy committees, the ESAs have considerable powers. However, there are certain aspects of their institutional configuration that could prove to restrict them in significant ways. Whereas the de Larosière Report had explicitly called for the ESAs to be independent authorities, the powers of the ESAs ultimately depend on the goodwill of the EU Institutions in many aspects.

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The draft technical standards certainly have the potential of considerably boosting harmonisation and convergence; however, it is yet to be seen if the ESAs can use them freely.

The effectiveness of the technical standards predominantly depends on the Commission, the Council and the EP. The technical standards developed by the ESAs are only drafts which must be endorsed by the Commission to become legally binding. Even if the Commission endorsed a technical standard, the Council and the EP still have the power to prevent any standard from becoming law. Moreover, the technical standards ~~may not prove~~ might fail to be as effective as hoped for. Even though draft technical standards are likely to contribute more to the harmonisation efforts than recommendations and guidelines, they “neither exclude gold-plating nor regulatory arbitrage” (Verhelst 40).

The power of the ESAs to enforce decisions is also highly conditional. One prerequisite is a manifest breach of directly applicable EU law. Even if this is the case, the Commission needs to decide to issue a formal opinion before the ESAs are able to impose any measure on a national authority. The power to address individual financial institutions is even more restricted. Additionally, this process may take a considerable amount of time ~~as it~~ it can take up to four months from an ESA decision until the Commission issues an opinion. Moreover, the national authority has to be granted sufficient time to adopt the Commission’s instructions. The large timeframe may greatly delay ESA decisions and endanger the goal of a consistent regulatory framework.

The emergency powers of the ESAs are considerable. However, it is unlikely that the Council will declare emergencies frequently. Moreover, even if an emergency is declared, the actual crisis management is the task of the national authorities. The power to impose measures on the national authorities or individual financial institutions is restricted to cases in which directly applicable EU legislation is violated. Even if this is the case, the ESAs are prohibited by safeguard clauses to impose measures, which would impinge on the fiscal sovereignty of the Member States. However, as in an international financial crisis many measures are likely to influence the fiscal policies of Member States to some degree, the safeguard could be used to considerably undermine the ESAs effectiveness.

Finally, the primary decision makers in each ESA are members of the Board of Supervisors, i.e. the Heads of the national competent authorities. This has been an upgrade, as the members of the Level 3 committees were ‘only’ high-level representatives. However, even though the members on the Board are legally obliged to act solely in the interest of the Union, they are still ~~most of the time~~ the Heads of the national authorities ~~most of the time~~ in most cases and therefore responsible for the national systems and accountable to national governments. It is questionable, if ordering the Board members to act European is enough to solve the possible conflict of interests, which could arise out of such a dual responsibility.

6. Conclusion

The tracing of the development of the supervisory and regulatory system at the EU level and the investigation and evaluation of the ESFS has led to three general conclusions. First, since the creation of the Lamfalussy process and the initial Level 3 committees, the EU-level supervisory and regulatory tasks for the financial sector have considerably expanded. This development indicates an awareness amongst policy-makers that international finance needs international supervision and regulation. Nonetheless, the increase in tasks and responsibility at the EU level was not accompanied by an equal increase in competencies. This is clearly shown by the reform following the Commission's review of the Commission. Second, whereas the Member States were highly reluctant to grant significant powers to the EU supervisory bodies prior to the international financial crisis, it seems that a change of mind has set in after it and that a consensus arose that some tasks are more efficiently conducted at the European Level. However, the creation of the ESFS took place at a time when the shock of the financial crisis was still fresh and policy-makers as well as the general public saw understood the main causes of the crisis ~~in~~ to be a function of sparse and ineffective supervision and regulation. It is possible that, as the crisis and its causes become a more distant memory, the perceived need for regulation decreases and the ESFS will not be able to exploit its full potential. Finally, the analysis of the ESFS has shown that it is not possible to predict the impact of the ESFS or whether it will be able to achieve a harmonised regulatory and supervisory structure, which guarantees systemic stability. This depends crucially on the Member States and their willingness to achieve these goals. Essentially, the Member States have taken care to build in backdoors, which allow them to opt out of uncomfortable obligations. The veto right of the EP and the Council on technical standards and the safeguard clauses for the ESAs are prime examples for this. It would be a worthwhile exercise to monitor the future developments of the ESFS and the impact it will have on the Member States in order to determine if the orientation towards more regulation and supervision at the European level will continue.

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- Please make sure that your supervisor checks your paper for factual errors as well as for the correctness of the sources of your quotations before you hand in your work for final examination!
- I could not do much about your referencing, as neither your bibliography is in place, nor is your in-text referencing complete. You have highlighted yourself where references are missing. Please do not forget to include your in-text references as well as your bibliography before handing in your work. With regard to the references present in your text, I have proceeded as with all other aspects as well by placing a comment where something was unclear.
- Please also check which paragraph layout your university prefers. There are several possibilities: indentation of the first line of a new paragraph without a line open between paragraphs; no indentation at the beginning of a paragraph but a line open between paragraphs; or both indentation AND a line open between paragraphs. Please just make sure that you use the style which is preferred by your institution. I could not find an answer to this question in your guidelines, but I am sure your supervisor or departmental secretary will be able to help you in this regard.

Addendum D

Text B, unedited version

Summary

In recent years, the financial service industry demonstrated substantial growth of Exchange Traded Funds (ETFs). Apart from offering access to new and more specific investment opportunities, many ETFs enter the direct competition with conventional, already existing Mutual Index Funds. With 22,1% growth of assets over the past 5 years, by now, the European market accounts for 19% of the global ETF market, while in the same time we observe a decline of cash flows to Mutual Index Funds.

Given the recent development, index investors are likely to face a choice between ETFs and Mutual Index Funds offering the same service. The purpose of this study is to analyze those two similar investment instruments towards the quality of achieving their objective, which is to deliver a performance as close as possible to the respective benchmarks'. The analysis will be performed for the European market, i.e. we include only Index Funds that track European indices.

This study is guided by objectivism and positivism as ontological and epistemological positions. We conduct a deductive research by reviewing and testing previous findings through the formulation of hypotheses that serve our purpose. For our analysis we gather quantitative data in the form of daily prices for 21 ETFs and 22 Mutual Index Funds, tracking 9 European indices. We further use a time frame of 7 years (2006-2012), which we analyze as a whole as well as divided into sub-periods as determined by different states of the European market. As a basis for the analysis we calculate return differences and different measures of tracking risk.

Our results show that on average ETFs as well as Mutual Index Funds sufficiently replicate index performance with approximately the same level of tracking risk for both instruments. Furthermore, we see no significant impact of expected returns or index volatility on return difference. However, looking at fees and tracking errors during recent economic tumoils, we show that ETFs first, bear lower directly attributed costs and second are less affected by down markets than Mutual Funds.

Keywords:

Mutual index funds, exchange traded funds, tracking error, index replication, European index funds.

Acknowledgment

Our deep gratitude goes to our supervisor who guided us through the entire process by sharing with us her extensive experience and knowledge about academic writing in general and about the requirements of our university in particular. Her preparative advice at the beginning of this work, as well as numerous invaluable feedbacks throughout the different development stages were material to keep this thesis on track and provided us with constructive guideposts.

We further want to express our gratitude to P. from the statistics department, who spared a considerable amount of time to give us technical advice for our analysis, and due to his expertise, helped us to enhance our statistical understanding.

Last but not least we thank our families, companions and friends for their motivating support and sympathy throughout this sometimes rather exhausting period. You helped us clear our minds and to restock energy to continue.

Thank You!

May 24, 2013

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Table of Abbreviations

ABDC	Australian Business Dean Council
AP	Authorized Participant
ARD	Absolute Return Difference
CU	Creation Unit
cf.	confer
e.g.	Exempli gratia
et al.	et alii
etc.	et cetera

ETF	Exchange Traded Fund
i.e.	id est
IPO	Initial Public Offering
IWF	Investible Weight Factor
Logit	Logistic Regression
LPM	Linear Probability Model
MA	Moving Average
MF	Mutual Fund
MIF	Mutual Index Fund
MSCI	Morgan Stanley Capital International
MW	Market Weighted
OLS	Ordinary Least Squares
OR	Odds Ratio
OTC	Over the Counter
NAV	Net Asset Value
PACF	Partial Autocorrelation Function
REIT	Real Estate Investment Trust
S&P	Standard & Poor's
SEC	Security and Exchange Commission
SPDR	Standard & Poor's Depository Receipt
TE	Tracking Error
TER	Total Expense Ratio
UCITS	Undertakings for Collective Investments in Transferable Securities
UIT	Unit Investment Trust
USBE	Umeå School of Business

1. Introduction

Throughout this chapter we will give a general introduction to the subject and problem driving this thesis. We formulate our research question which serves as the basis for our research and clarify purpose and contribution. We further identify a target community of interest and set limits to the scope of this study. After a graphical replication of the research model which provides an at a glance overview of the chosen approach, we conclude with definitions of the most important terms we used.

1.1. Problem Background

In recent years the development of exchange traded funds (ETFs) increased substantially, and the trend continues despite financial troubles caused by subprime mortgage crisis in the U.S. and the recent economic instability in the European Union. The reasons for this growth are most frequently identified to be the low cost of investing and significant diversification effects which appear available by means of gaining exposure to a broad variety of markets, which in many cases were difficult to access in the past. Furthermore, the growing importance of transparency triggered by the financial crisis benefits ETFs development; since ETFs are publicly traded, disclosures are rather strict regulated and in most cases easy accessible for everyone. There are now more than 3000 different ETFs all over the world offering exposure to traditional asset classes such as large-cap U.S. stocks, U.S. Treasury bonds, real estate investment trusts (REITs) and international equities. With an invested asset level amounting up to more than \$1.4 trillion by January 2013, the U.S. represents the biggest market for exchange traded products while Europe follows with \$387.5 billion of assets (BlackRock, 2013, p. 6). When it comes to the number of listed products, Europe led with 2.132 before the U.S with 1.446 listings (BlackRock, 2013, p. 6). Comparing the compound annual growth rate for both regions, last Octobers BlackRocks' report shows that over the previous 5 years Europe ETF assets grew by 22,1% (compared to 16,3% in the U.S), which makes Europe account for 19% of the global ETF market (BlackRock, 2013, pp. 16, 21).

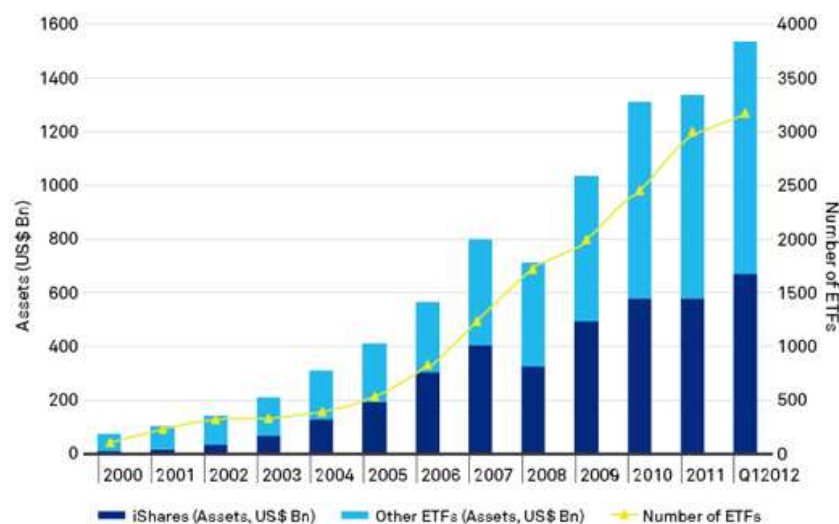


Figure 1: Growth in ETF's over time worldwide. (Source: iShares, 2012)

As mentioned above, ETFs offer unique investment opportunities to private investors, not only due to their unique tradability, but also in a way that they provide access to very specific market products which are otherwise difficult to obtain. This is achieved through low fees, high transparency and the exchange traded component. Thus, exchange traded funds highly

contribute to the popularity of index investment among private investors. As a subclass of index funds, the main objective of ETFs is via accurate replication, to achieve the same performance as an underlying index (SEC, 2010a). Therefore ETFs coexist with the more conventional mutual index funds, as both follow the same objective by using a different approach.

The Security and Exchange Commission (SEC) includes both fund classes in their description of index funds. Even though Mutual Funds (MFs) are usually actively managed, when classified as index funds, the SEC describes the management as more “passive” than non-index funds, as the tracked portfolio of securities is rather fixed for index funds (SEC, 2007). MF peak development was during 1990th, when the growth rate of this investment vehicle was around 22 percent in the U.S. as well as in many other countries around the world. The growth in MFs appeared simultaneously with the high growth in stock markets, increasing capitalization and the expanding presence of large multinational financial groups. (Klapper, 2004, pp. 1-2)

Mutual funds offer investors the advantages of portfolio diversification and professional management at low cost. One of the distinguishing features of mutual funds is a high level of operational transparency relative to other financial institutions, such as banks, thrifts, insurance companies and pension funds that also cater to the needs of households. For simplicity, throughout this paper when referring to mutual funds, we relate to the class of mutual index funds (MIFs) if not else indicated.

Although conventional MFs represent an important financial instrument, nowadays the trend is changing towards ETFs, as they start to dominate MFs in number and usage (Sharifzadeh & Hojat, 2012). The trend is well illustrated by the \$206 billion redemption of MFs flows in 2012, while ETFs had inflows of \$262,7 billion (BlackRock, 2012, p. 4). *Figure 2* shows the development of ETFs and MFs on developed markets for the year 2012. This dynamic represents an interesting phenomenon as both, index based mutual funds and ETFs which also aim for index replication represent the same family of investment instruments.

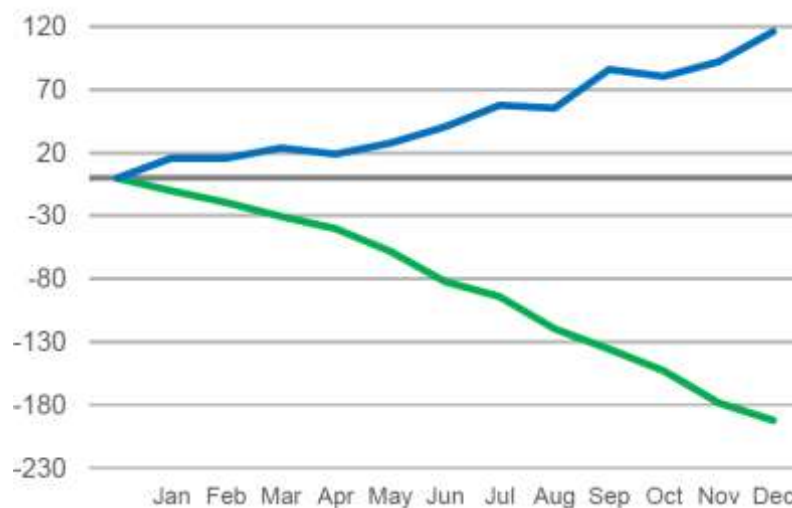


Figure 2: ETFs (blue) and MFs (green) cash flows for developed market equity
 Source: (BlackRock, 2012, p. 8)

As mentioned above, ETFs and MFs are similar in nature; however the growing demand for ETFs indicates that the usage of mutual funds might continue to decline. Explaining this trend has recently raised a lot of attention. A frequently asked question therefore is, whether ETFs “outperform” mutual funds in index tracking and therefore keep earning market shares. If so, one could wonder how the coexistence between both models is justified.

Given that both mutual index funds and exchange traded funds are index trackers, following a passive strategy, they should always have an advantage over actively managed funds regarding costs of operation. And yet, considering fee adjusted returns, the tracking error between underlying index and index fund deviates across the index fund landscape. Frino and Gallagher see the main cause in the different assumptions that underlie an index and those underlying an index fund. While the index is a theoretical construct that can adopt changes in the portfolio due to market frictions without costs, the index fund is holding a physical portfolio which leads to the occurrence of transaction costs when the benchmark’s constituents change (Frino & Gallagher, 2001, pp. 3-4). Chiang (1998, p. 308-309) states the same problem and further names dividend treatment, uninvested fund cash and the volatility of the stock market as factors that increase the magnitude of the tracking problem. Given such discrepancies, Chiang calls the goal of exactly matching the benchmark index’s performance “elusive and probably unattainable” (1989, p. 309).

Therefore, the main objective of index fund management should be: achieving the same performance in terms of returns and volatility compared to the index and minimization of the evolving tracking error while minimizing transactions costs in the same time in order to track the target index as close as possible and thus stay competitive (Agapova, 2011, p. 329).

1.2. Research Question

Based on the problem background above we define our research question as the foundation for the following research;

Do Exchange Traded Funds replicate the Performance of European Indices better than Mutual Index Funds?

Sub-questions:

1. *Is tracking quality correlated with the states of the European financial markets?*
2. *Is there a difference in fund costs?*

In order to answer the research question, we compare benchmark performance to fund performance by analyzing returns and a number of common quality indicators as well as the strength of their impact on the tracking quality of our sample. Therefore we formulate hypotheses which will be answered using fitting statistical tests.

1.3. Research Purpose

The purpose of this paper is to seek an understanding for the coexistence of the two very similar investment instruments, Exchange Traded Funds and Mutual Index Funds. Our goal is, by the end of our research, to be able to present evidence on whether there is a difference in **tracking** performance between the two investment fund models over a given time period. If there is no significant difference, we want to find out which factors distinguish both types from one another. Therefore, we focus on index funds whose single objective lies in reflecting the performance of a specific European index. It is important for the reader to note that we are

not comparing the actual performance of both fund types and the benchmarks, but the level of accuracy they achieve in reflecting the index performance at any given point in time.

Comparing the respective index fund with its underlying index using different tracking quality measures and a time frame over the last 7 years (2006- end of 2012) will provide us with the necessary evidence in order to draw a conclusion on first, whether the respective tracking strategy is sufficient to provide investors with the index' performance and second if due to tracking differences one of the strategies is superior to the other. Since both fund models represent very similar products, we investigate possible differences in fee distribution to find out if either one of them has a cost advantage.

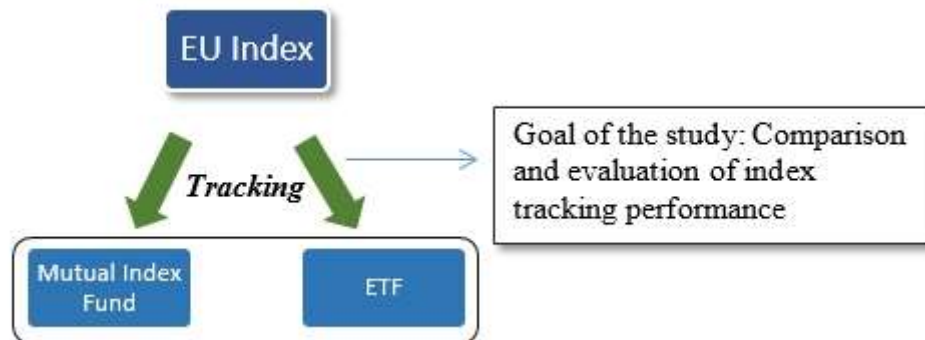


Figure 3: Theoretical Framework (Source: own design)

We further divide the time period under investigation in several sub-periods to account for different market conditions and their effects on the respective index. Doing so, we focus on major events during the past 7 years; the financial crisis in 2008 and, since we have an exclusive focus on the European market, the recent European crisis.

The results will be discussed against the background of already existing knowledge from previous studies which mainly focused on the U.S. market or on analysis of the two investment companies separately.

1.4. Research Gap and Contribution

There are numerous scientific articles and working papers examining the characteristics of different index fund strategies. Comparing structural differences with focus on different markets resulted in an extensive amount of knowledge about index tracking as investment alternative. A particular emphasis in recent years has been on the rather new investment instrument - exchange traded fund. Nevertheless, around a decade after the rapid growth of ETF industry has started, there are still many open questions regarding their coexistence with mutual funds.

Our review of previous literature on the topic showed that there has been comparative research between ETFs and mutual funds with distinct focus on structural differences, management fees and trading characteristics. Surprisingly little research was found, dealing with the actual tracking performance differences of a matched sample of mutual index funds and ETFs. An often argued problem in previous literature is the lack of data for the relatively new investment vehicle ETF, which makes it hard to find a sufficient set of observed returns to compare to mutual index funds returns, which track the same index. Matching mutual index funds with ETFs in order to compare their performance relative to the benchmark index from 2001 to the end of 2002, Rompotis ended up with 16 index-pairs tracking several U.S indices

(Rompotis, 2005). A similar research done by Agapova, has investigated the substitutability of conventional index funds and ETFs between 2000 and 2004, by comparing their performance relative to the index. Focusing on U.S emitters and U.S indices, she gathered 11 index fund pairs, which tracked the same index (Agapova, 2011). Research using a higher quantity of data and a longer time period (2002-2010) was performed by Sharifzadeh and Hojat. Longing for high generalizability and facing a shortage of matching ETFs with sufficiently long inception dates, they decided to match the index funds according to their investment styles. Yet again the focus was on the U.S market (Sharifzadeh & Hojat, 2012). A decade after the ETF boom in the beginning of the 21st century, we see the demand and opportunity to tie in with, and extend previous research by using the recent state of data availability.

Throughout this thesis we investigate performance behavior of conventional index funds and ETFs matched by the same underlying indices. We distinguish our work from previous research by exclusively accounting for European indices and therefore create new implication for index investments within the European markets. Furthermore, we use a sufficient time frame of 7 years to be able to build sub periods which will help to investigate performance behavior during different economic conditions.

The outcome of this research will provide new implications for private investors having or considering investment in European indices by making use of index trackers. After considering individual preferences and investment goals, our findings add important knowledge to make a decision between two rather substitutional investment vehicles. Looking at different time periods furthers the understanding of how the two fund classes are affected by different market conditions. As contribution to the “*mutual index funds vs. exchange traded funds*” debate, investors as well as emitters gain new knowledge about the two coexisting fund classes and their right to exist side by side. Emitters might also use our findings as point of departure for further investigation of the tracking performance of the respective instrument to base future launches of index funds on.

Finally, researchers may use our findings to incorporate them in future research on the subject. Further research suggestions given at the end of this paper should serve as impulsion and food for thought providing different ideas on how to extend the scientific knowledge on the field.

1.5. Delimitations

Our analysis compares the performance of index tracker funds with the performance of their underlying index. In doing so we focus on open-end fund strategies in form of mutual index funds and exchange traded funds. We intentionally exclude other investment objectives than index tracking and other fund types such as closed-end funds, as we particularly want to examine the relationship between two those much related investment instruments and the implications of their coexistence.

It is once again important to notice, that we are not trying to find better performance in terms of higher returns given minimum volatility between mutual index funds and ETFs but try to measure quality of index tracking, which is achieving similar returns and volatility in comparison to the benchmark index.

To be able to accurately compare fund performance to index performance, we do not include actively managed or institutional funds but only use returns of passively management retail

funds, which are available to private investors and whose main objective is to minimize the tracking error and not to outperform the index.

Other than most of the ETF related researches which is focusing on the U.S market, we only look at European index trackers. Due to data availability constraints, we limit our timeframe from 2006 to the end of 2012. However, we believe that this timeframe is sufficient to achieve representative statistical results.

We will make use of findings from previous literature to discuss our results and possible causes for the found relationship. It is, however, not within the scope and of this thesis to empirically investigate the magnitude of all possible factors that have an impact on the tracking quality of our sample, but to focus on a selection of previously found variables that we found to be most interesting to investigate.

1.6. Structure of the Research

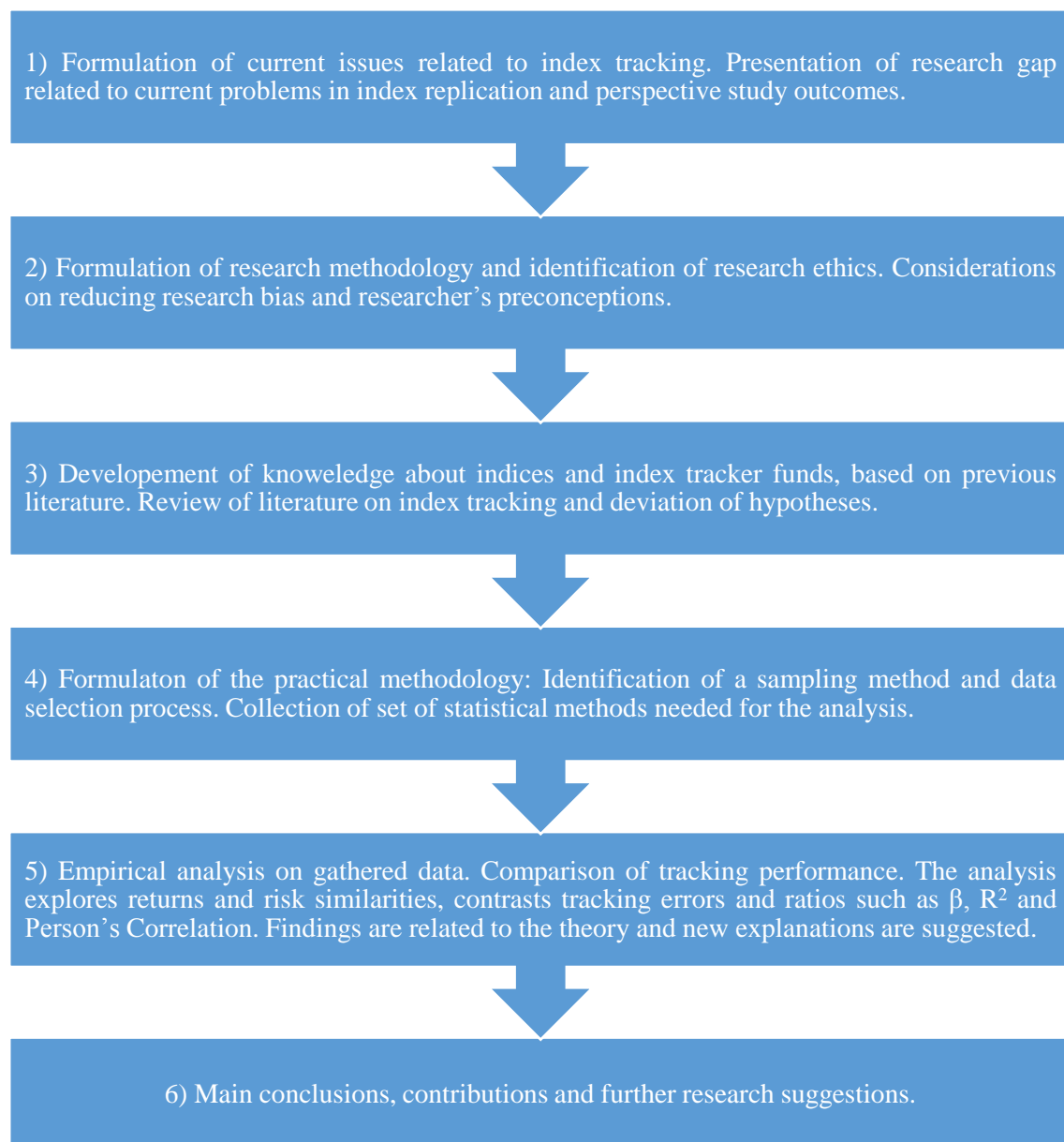


Figure 4: The research model. (Source: own design)

The *figure 4* above summarizes the structure of our research. First, we will introduce the background of the research, present current research gaps and develop goals of the study. Second, methodological stance and ethical views will be established. Third, literature will be reviewed and necessary theories will be gathered on which we build hypotheses. Forth, necessary data will be identified and collected in order to test the hypotheses. Next, we study gathered data in order to obtain comprehensive characteristics the results will be examined and observed patterns discussed in connection to previous research. Finally, the main results and contributions will be summarized and ideas for further research are presented.

1.7. Important Definitions

Mutual Fund (MF) is an investment company that is made up of a pool of funds collected from many investors for the purpose of investing in securities such as stocks, bonds, money market instruments and similar assets. Mutual funds are operated by money managers, who invest the fund's capital and attempt to produce capital gains and income for the fund's investors. A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus. MFs can be described by common features like:

- When investors deal directly with the mutual fund or through the broker for the fund. It is not possible to purchase the shares from secondary markets (i.e. from stock exchanges). The price of the share is based on the net asset value (NAV) per share and the fees a fund may charge at purchase (e.g. “front load”).
- MF shares are redeemable, thus they could be sold back to a fund or a fund’s broker, at a price of NAV minus fees such as “back load”.
- There are many varieties of MF including index funds, stock funds, bond funds, etc.
- MF could be actively and passively managed. Actively managed funds usually try to beat a chosen market benchmark. The goal of passively managed is to stick to a chosen portfolio over a period of time. (Elton et al., 2010, p. 35; SEC, 2010b)

Active management (*also active investing*) - is a strategy of portfolio management which aims to beat the benchmark through effective operational activity. (Elton et al., 2010, p. 699)

Passive management (*also passive investing, passive indexing*) - is the opposite of active investing, where managers have to make as few decisions as possible to minimize transaction costs. Usually, such strategy is chosen for tracking indices (Fuller et al., 2010, p. 35).

Index Fund (IF) (*also Mutual Index Fund (MIF), conventional index fund*) - is a sub-classification of mutual funds. Its main goal is to deliver returns as close as possible to the returns of a selected index, e.g. CAC 40 (an index tracking the 40 largest and most liquid companies traded on the Paris stock exchange). Mutual index fund usually adopt a passive management style, because managers of such funds only need to mimic the chosen index performance and not to outperform it. Such funds are commonly used by investors to gain high exposure to a specific market with low costs. (Abner, 2010, pp. 26; Anderson & Born, 2010, p. 75; Elton et al., 2010, pp. 701, 697)

Exchange-Traded Fund (ETF) - a newer type of Investment Company. Although, there are many different types of ETFs, most ETFs seek to achieve the same return as a particular index. This is accomplished with a passive way of management (cf. index funds and passive management). ETFs are legally classified as either Unit Investment Trusts or open-end

companies (same class as mutual funds), but they differ from conventional MFs in the following respects:

- Investors usually sell and buy ETF shares on the secondary market (i.e. stock exchange)
- ETFs generally redeem shares by giving investors the securities that comprise the portfolio instead of cash. Thus, an ETF invested in the stocks contained in the Nikkei 225 index would return the actual securities included in Nikkei 225 instead of cash. Because of the limited redeemability of ETF shares, ETFs are not considered to be and may not call themselves mutual funds. (Abner, 2010, pp. 6 – 10; SEC, 2010a)

Leveraged ETFs (*also Enhanced Index Fund (EIF), Active Index Fund*) - differ from traditional IF as they are actively managed. This approach causes relatively higher fees. Active ETFs expect to gain extra returns by making use of leverage, short selling and derivatives. However one should consider the high level of risks associated with such investing. (Abner, 2010, pp. 26; Leveraged ETFs, 2009)

1.8. Disposition

Chapter 1: Introduction

Throughout this chapter we gave a general introduction to the problem driving this thesis. We formulated our research question which serves as the basis for this research and clarified its purpose and contribution. We further identified a community of interest and set limits to the scope of this study. After a graphical replication of the research model which provides an at a glance overview of the chosen approach, we concluded with the definition of the most important terms used throughout this study.

Chapter 2: Theoretical Methodology

We start the second chapter with introducing the reader to the educational and cultural backgrounds of the authors, and proceed with a reproduction of our theoretical methodological choices. I.e. we motivate the chosen research philosophy, research approach, method of inquiry and research strategy. After a critical evaluation of our sources we conclude with addressing important ethical considerations.

Chapter 3: Literature Review

Throughout the third chapter we give an insight into the characteristics of the two different types of investment companies we aim to compare one another. Furthermore, we introduce important terms and definitions that we make use of throughout this paper. Among others we discuss the calculation of return differences, tracking error and indices as it was covered in previous literature. We conclude our literature review with a selection of relevant findings published by other researchers that we find to be connected to our research purpose and appropriate to base our hypotheses on.

Chapter 4: Practical Methods

In chapter 4 we motivate the choice for a sampling method and reproduce our data collection. We further explain how we split our time frame (2006-2013) into smaller sub-periods for more detailed, timely investigation. After a statistical restatement of our Hypotheses, we develop the basis for our empirical analysis by introducing all relevant statistical methods and tests we made use of and conclude with a discussion on how we assure measurement quality.

Chapter 5: Empirical Results

Throughout chapter 5 we will first present and describe our sample data using descriptive statistics. Calculating descriptive statistics provides us with the necessary data to answer the first two hypotheses. We then report the results of our analysis regarding Tracking Errors and Expense Ratios and based on the results answer the remaining hypotheses and discuss them respectively in relation with previous literature as reviewed in chapter 3. We conclude the chapter with a brief summary of our hypothesis outcomes.

Chapter 6: Conclusion

In the last chapter we restate and answer our research question from chapter 1. We base the answer of the question on the findings as discussed throughout chapter 5 and draw a conclusion about how the research purpose was fulfilled and what are the main contributions of this paper. We end with some interesting recommendations that connect to our research and would pick up on our delimitations.

2. Theoretical methodology

We start the second chapter with introducing the reader to the educational and cultural backgrounds of the authors, and proceed with a reproduction of our theoretical methodological choices. I.e. we motivate the chosen research philosophy, research approach, method of inquiry and research strategy. After a critical evaluation of our sources we conclude with addressing important ethical considerations.

2.1. Pre-understanding

Our research topic could be influenced by our own background, experience and knowledge, which can result in particular decision making regarding the topic, methodology, selection of theories, data analysis methods and choice of literature for review (Bryman & Bell, 2007, p. 429). In order to evaluate any business research it is important that its methodology is well described (Bryman & Bell, 2011, p. 7).

Preconceptions

We are aware of possible influences on the research caused by our preconceptions, thus we aim to reduce them as much as possible by identifying them and discussing our background in relation with our research methodology. Regarding our research topic we take a neutral position as none of us has any historical affective relation to the subject of matter. Our main goal therefore is, to conduct a true and unaltered research resulting in findings that can be used by the target audience within the defined borders and thus contribute to research in a productive manner.

Researchers' background

We, the authors of this thesis come from different countries - Germany and Ukraine. We both study the two year Master's program in Finance at the Umeå University. Our interest towards ETFs developed throughout time as we both see them as a financial vehicle with growing demand. We both aim to advance our understanding for this very important and popular investment instrument. In particular we are interested in the co-existence of two so similar financial instruments as Exchange Traded Funds and Mutual Index Funds. Similarly, we both strive for international experience and thus pursue our graduate studies in a foreign country. This thesis offers us the opportunity to extend our financial studies as well as to improve our

ability to conduct quality research in English. We do not see our different cultural and experiential backgrounds as a drawback, but much more as an opportunity to diversify our perspective on the subject matter and to raise an even more multilateral discussion throughout the work in progress as well as about our results.

2.2. Research Philosophy

One of the main dominants of a proper study is the determination of philosophical stances related to the flow of the research. The understanding of them, while performing the research is advantageously for us, the researchers, as it will help to develop knowledge around the chosen phenomenon, highlight limitations and produce an adequate scheme for the research (Saunders et al., 2009, p. 108). In addition, Huff (2009, pp. 100-110) refers to the research philosophy as beneficial tool which would enhance argumentation, trustworthiness and quality of the research framework. Further, Grix (2002, p. 175) identifies research aesthetic as “building blocks” which help students to structure research and conduct a thorough study in accordance with the scientific practices pertaining to the methods chosen and presenting the results in accordance with the ontological and epistemological foundations of the theoretical perspectives employed.

In addition, research philosophy could provide in-depth information for a reader, who is familiar with it, as it provides argumentation of research flow and will help other researchers in the direction of similar studies (Huff 2009, pp. 100-110).

2.2.1. Ontology

Ontological assumptions will evaluate our positions toward the being of knowledge. Huff (2009, p. 108) states that ontology describes the existing nature of surrounding phenomena. In addition, ontology is usually presented as the starting point of a research, because it structures the understanding of the world’s functionality (Grix, 2002, p. 177).

There are two main approaches in ontology: *objectivism* and *subjectivism* (Saunders et al., 2009, p. 110). The main reasoning behind *objectivism* is that social entities exist independent of social actors. Such view from the financial studies perspective, implies that investment products follow organized “hierarchy”. Moreover, financial organizations operate in an organized way too and people perceive them with common routine (Saunders et al., 2009, p. 110). The opposite of objectivism is *subjectivism* or also called *social constructionism*, it implies that a social phenomenon is created via perceptions and actions of social actors (e.g. managers), which is a continuous process and thus existing knowledge is revised constantly. The subjectivism position is usually followed by the interpretivist position of epistemology, because both stances see the reality from the perspective of individual social actors. This idea entails that researched dilemma can’t be adequately measured using just objective analysis (e.g. quantitative) but instead needs to be described in detail from the point of view of involved characters (Saunders et al., 2007, p. 108).

One could argue that it can be hard to adhere only to one chosen ontological format, therefore *pragmatism* as a combination of objectivism and subjectivism was developed. The *pragmatist* approach focuses on the research question and based on it, one chooses the particular ontological position. If there is no clear tendency towards one position, then a researcher might chose a pragmatist track. It implies that both, qualitative and quantitative methods are possible. (Tashakkori and Teddlie, 1998, p. 21)

Given the above discussed ontological choices, we decided to take an *objectivist* position. We assert that index tracking funds and all processes of mutual funds organization already have determined rules according to which they work. These rules present a hierarchy – step by step process, which is guided by regulations of a government and securities commissions. We don't test those rules but take them for granted, since the purpose of our study is to understand tracking differences among two different, already existing types of index fund strategies. To measure tracking performance, we introduce a number of estimates whose calculations are based on fund return differences. To calculate return difference we use predetermined and unaltered numbers in the form of prices which are created by the financial markets and thus beyond our influence. Since such data gives no room for alteration due to interpretation, we see a pure objective stance as best fit for our purpose.

2.2.2. Epistemology

Epistemology dictates acceptable knowledge of the study, describes how to gain it and how it will be interpreted (Grix, 2002, p.177; Saunders et al., 2007, p. 102). There are three positions one could adopt in epistemology:

- *Positivism* is closely related to a research performed in natural sciences. One would work with data obtained from observations and try to generalize the data into universal law-like arguments. Moreover, such research shall be performed in a value-free way, thus a researcher is independent from the subject of research (Remenyi et al. 1998, pp. 73-76).
- *Realism* relates to an understanding of reality, which is not biased by human senses. This epistemological stance similarly to positivism follows a scientific approach, however it implies that a human mind can't adequately influence reality, thus scientists should treat observations without any preconceptions and pay attention to the studied object itself (Dobson, 2002, p. 2).
- *Interpretivism* embodies the opposite of positivism. It dictates that our world is too complex to be discussed in theories. Complex unique parameters of the world would get lost if one would summarize them. The idea behind this stance is that a researcher should understand the reality from the viewpoint of social actors, who create this reality; one should be "empathetic" in order to understand researched phenomenon (Saunders et al., 2007, p. 107).

Given the nature of our research, we position ourselves as *positivists*. The main reason for this choice is that positivism makes no distinction between natural sciences and social science in the conduct of research (Bryman & Bell, 2011, p. 15). Our study is performed within the methods of financial science which we don't see as epistemological different when compared to a natural sciences approach. Furthermore, our way of conduct covers four of the main features underlying positivism:

- The first feature is a principle of *phenomenalism*. It tells us to see existing Index Funds as concepts or theory which are determined by sense. This requirement is true for our approach as we take the fund companies as given phenomena which act according to determined rules.
- The principle of *deductivism* dictates the second feature. It states that existing theory is assessed by the generation of hypotheses. In the same sense, for this thesis, we review previous research on, or close to the subject and use it as directive to formulate hypothesis to base our analysis on. Therefore, we highlight existing theories about index tracking in the literature review throughout chapter 3. *Theoretical Framework*. After evaluating previous findings we tie in our analysis by

constructing hypothesis that will test former theory on our research field. (Bryman & Bell, 2011, pp. 15-17)

- The third feature states that knowledge is arrived through gathering of facts, which are summarized in laws (principle of *inductivism*). As mentioned above and further discussed in 2.3. *Research Approach*, we adhere to a deductive approach and therefore do not adopt inductive principles.
- The fourth feature of positivism is that science should be objective (cf. *objectivism*). We appreciate this feature by taking the respective ontological position as motivated throughout 2.2.1 *Ontology*.
- The last feature of positivism we adhere to implies a focus on scientific statements; in order to cover this, we do not bias our research with generally accepted statements about the research topic. As we will discuss in more detail in chapter 2.5. *Choice of Literature and Critical Assessment* we strive towards exclusive consideration of unbiased, high quality scientific articles and academic books to base our hypotheses on. We further do not base drawn conclusions on our own or on external general beliefs, but instead on what we are allowed to infer, within scientific reason, from our or others findings. (Bryman & Bell, 2011, pp. 15-17)

Our conduct of research therefore agrees with four of the five features of positivism. However, due to the inclination towards *deductivism*, we do not adopt the feature of *inductivism*.

2.2.3. Paradigm

A paradigm is a cluster of beliefs, which tell scientists what should be studied, how research should be performed and how results should be interpreted (Bryman & Bell, 2011, p. 24). During our research we face interactions between ontological and epistemological considerations, which could be explained with help of a paradigm system. There are mainly two beliefs in each of ontological and epistemological positions, which lead to four possible paradigms: functionalist, interpretative, radical humanist and radical structuralist.

Functionalist is the main schema for studying organizations, based on problem-solving and rational explanations. It could be identified as if one would combine positivism and objectivism standpoints in a research.

Interpretative – designed to understand organization based on the perception of personnel who works in it.

Radical humanist – identifies organization as a social institution. In order to study it, one should isolate individual's perceptions about it and focus on changes within organization.

Radical structuralist – examines organization as a result of power structural relationship between employees.

Out of those four paradigms, we identify our study to use a *functionalist* approach, which follows our choice of the combination of positivism and objectivism. We aim to study index tracking based on the idea that there is an existing problem, which we will identify and analyze using empirical data. Further, there are two key assumptions in the *functionalist* paradigm: objectivity and “regulatory” (Burrell & Morgan, 1992, pp. 5-30). Firstly, as described throughout 2.2.1. *Ontology*, we see our researched field objectively, which implies that tracking performance could be observed externally from an investment company, which performs index tracking and can be adequately measured. Secondly, the regulatory assumptions describes our intention to describe index tracking in Europe but not to make any judgment of about this process.

2.3. Research Approach

A research approach can be either deductive or inductive. Robson (2002, pp. 17-22) gives a coherent representation of these approaches.



Figure 5: Logics of deduction. Source: (Robson, 2002, pp. 17-22)



Figure 6: Logics of induction. Source: (Robson 2002, pp. 17-22)

As one can see from *Figure 5*, the deductive approach, which is mostly used in natural sciences first checks theory by stating hypotheses and then tests it on gathered data. The hypotheses are either accepted or rejected and the theory is revised. There are several characteristics, which comply with the deductive approach. They are: 1) search for casual relationships between variables, 2) the search should be controlled in a way which isolates unrelated variables, 3) independence of researcher from observed phenomena, 4) operationalization, which requires objective measurement of observed changes, 5) generalization, as a final goal, in deduction one should come up with revised theory or agree on existing ones. (Gill & Johnson, 2010, pp. 46-52)

Inductive approach, as seen from *Figure 6*, is the opposite of deduction. It endeavors to develop theory from gathered data. The idea is to look on surrounding phenomena, gather data and try to explain observed patterns by creating new theory. Such approach is usually regarded as highly scientific, it is time consuming but outcomes are distinct and look deeply into observed subject in order to come up with potent explanations (Easterby-Smith et al., 2012, pp. 39-45).

Our research is *deductive*. We state hypotheses based on existing theories and test it using empirical data from Datastream obtained for a period of 10 years. By comparing the data of two indices tracking funds we can assess theories found about index fund tracking. By carrying out statistical analysis using differences in tracking efficiency as a basis, we will be able to analyze and evaluate our hypotheses about index tracking of European indices and draw a conclusion about possible relationships between the two investment instruments. Due to careful established data selection criteria (as discussed in *4.1.4. Selection Criteria*) we seek to keep the results free of uncontrolled influences. We further discuss our results on the background of previous theory and either agree or disagree. In the latter case (and if results are generalizable), we present a revised perspective for European Index trackers.

In a nutshell, our study is *deductive*, has *positivist* position and according to ontological assumptions regarded as being *objectivistic*. We see these standpoints as typical for

quantitative research, however any change in them could be regarded as further studies opportunity.

2.4. Research Method

Adams et al. point out the importance of the difference between research methodology and research method. While methodology is the science and philosophy behind all research, the research method describes the way of conducting and implementing the research (Adams et al., 2007, p. 25). Given the research question, the used techniques and procedures have to fit the purpose of the study and be aligned with methodological choices in a way that best serves the goal. After having taken our methodological stance, we now would like to motivate our choice of research method for this work.

There are two common domains of research methods which can be used separately or in a mixed approach. One of the methods is the qualitative method of data collection and analysis. It is often used to describe the reality as experienced by individuals and prevails rather with verbal or written (non-numeric) data than numerical (Adams et al., 2007, p. 26). The flexibility during the inquiry of such data leaves room for subjectivism throughout the interpretation but limits the generalizability of results from sample to population in the same time. Generating or using numerical data on the other hand is referred to a quantitative research. Most statistical analysis is based on quantitative data as it can be measured numerically (Adams et. al, 2007, p. 85).

Even though by the end of the 20th century's research was dominated by quantitative methods, during the recent past, qualitative method became of increasing importance. This development is among other justified by a shift towards a more subjective and culture-bound approach of research in order to conduct more socially and culturally sensitive research. The most recent and third method movement is the mixed methods approach which combines quantitative and qualitative methods by using both, quantitative and qualitative data as well as respective analysis techniques. Tashakkori and Teddlie explain the existence of the mixed method due to the possibility that a single research project can contain two paradigms or two worldviews. (Tashakkori & Teddlie, 2002, p. 5-11)

While many researchers nowadays make use of a combination of both methods (mixed method), we see our research purpose best served using a *quantitative* research method. This fits our needs the best, since we make use of numerical secondary data in the form of historical fund returns and index returns which will be the basis for statistical tests and tracking error estimates. These returns are predetermined by the market and will, due to our strongly objectivistic ontology, be accepted without any subjective interpretation or modification steered by our own conception.

Apart from choosing the quantitative method, we classify our research as a *longitudinal study*. Longitudinal studies cover long periods of time and follow the sample a repeated number of times. It not only provides us with the desired knowledge about the behavior of two different fund models over the chosen period but also with the ability to answer questions about causes and consequences which helps us to break down our series into different periods of interest and analyze them separately (cf. Adams et al., 2007, p. 27). In our case the choice for the longitudinal study is rather implied, as we aim for evidence about the tracking capability of Index Funds over time and thus have to consider a longer timeframe instead of a 'snapshot' time horizon as described by Saunders et al. (2009, p. 155). The latter method is referred to as cross-sectional study and is used to observe a particular phenomenon at a particular time, i.e. how a trigger event affects one or more objects under investigation.

2.5. Choice of Literature and Critical Assessment

The use of electronic media like the Internet increases accessibility of data extensively. Search engines and a huge variety of databases open doors to an extensive amount of information and therefore can bring many benefits for researchers in conducting data collection. Besides the obvious advantages this kind of data holds, like every source, electronic media has to be evaluated carefully especially given the extensive amount of data and the simple accessibility by everyone. Thus, filtering for relevance and reliability is yet more important and difficult. Therefore, we have to find ways to structure our inquiry in a way that narrows the bulk of material down to the most useful and reliable selection.

Why Literature Review?

Throughout this paper we analyze tracking performance of mutual index funds and ETFs due to the deductive research approach. I.e. we do not develop new theory but base our hypotheses on previous findings. This approach justifies the need of literature review, which is essential in any research. It is needed in order to find answers to questions like what has been done, what are the main theoretical perspectives in the topic area and what are the common research methods used for investigation. Reviewing previous literature further gives us information on who are the experts in the field and what are the commonly accepted findings and controversies. (Adams et al., 2007, p. 49)

Working our way through a large amount of articles gives us a clear picture on the current stage of research and induces a selection of papers which are closely related to our research question and thus can be used to base our hypotheses on and connect our discussion of results to.

2.5.1. Choice of Sources

Saunders et al. categorize literature sources according to the flow of information from the original source (primary literature) to secondary and tertiary sources, where the level of detail increases from the latter to the first stage. As the different stages build on each other, the level of accessibility increases if literature is published at a later point in information flow.

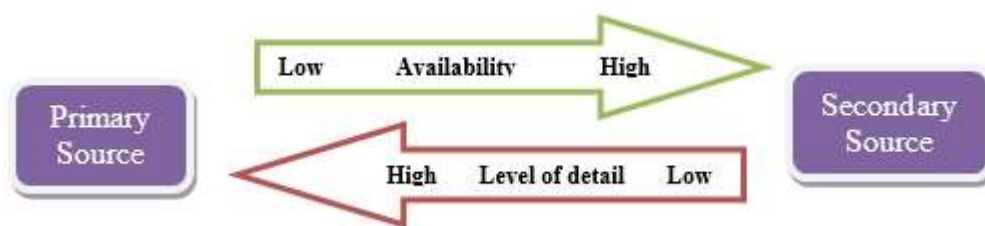


Figure 7: Flow of Information. Source: Own design motivated by Saunders et al. (2009, p. 69.)

(Saunders et al., 2009, p. 64)

It can be hard to find complete primary literature which in our case is especially limited due to time and cost restrictions. The majority of our chosen literature is therefore of secondary nature which, if carefully selected, doesn't lead to pivotal quality constraints. Where possible we make use of primary sources such as governmental publications, which nowadays are often made accessible via the Internet.

In order to structure our literature research we focus on articles published in well-established peer reviewed journals (e.g. Journal of Portfolio Management, Journal of Financial Markets

etc.) and further track back crucial information by searching for the respective articles stated in the reference lists. Our choice is further dominated by more recent articles (mainly 2000 – 2012) due to the fact that Exchange Traded Funds reached their main adoption in the beginning of the 21st century. Due to low reliability we widely avoid Internet publications and commissioned articles. If we decide to make use of such sources we treat them with the necessary caution in respect to possible alleged bias.

Several electronic libraries mainly made available by the Umeå University Library provide us with access to a broad amount of scientific papers. During our research, among others, the most frequently consulted databases for articles were Business Source Premier, hosted by EBSCO Publishing Inc. (EBSCO, 2013), and LIBRIS, a Swedish national search service providing a joint catalogue of the Swedish academic and research libraries (LIBRIS, 2013). Some of the most frequent keywords for our requests included “Mutual Index Funds”, “Exchange Traded Funds”, “Tracking Error”, “Index Replication” and “European Index Funds”.

To gather information about included funds and indices we retrieved general input from well-known financial market platforms like Bloomberg, Morningstar, Yahoo Finance and more detailed information from the respective fund company’s website. The daily data for fund returns was solely obtained via Thomson Reuters Datastream which again is made available to us via the Umeå University Library. Datastream is widely viewed as one of the largest global databases of economic data, covering up to forty years of historical financial information (Umeå Universitetsbibliotek, 2013). A more detailed description of the used financial data will follow in the course of this study throughout the Practical Method chapter.

Quantitative methods in our study are based on statistical analysis. We used t-tests for a mean, paired two samples t-tests, regression analysis, descriptive statistics and analysis of variance methods. The description of methods in detail is provided in *chapter 4*, but in terms of sources to describe the statistical tools used, we refer mainly to books from University library. Frequently used books were “The Practice of Statistics for Business and Economic” (Moore et al., 2011), David Ruppert’s “Statistics and Data Analysis for Financial Engineering” (2010) and “Statistics and Finance” (Ruppert, 2004). These books provided us with the main necessary knowledge for statistical analysis.

2.5.2. Data Type

During our study, main results will be based on secondary data; returns and net asset values of index funds and hedge funds obtained from Datastream. The choice regarding secondary data has such advantages as:

- Fewer resources needed. According to Ghauri and Gronhaug (2005, p. 95) it is less expensive to use secondary data than collect data yourself.
- Less time needed. Cowton (1998, p. 430) demonstrates that researcher won’t need a lot of time to collect needed secondary data.
- Suits longitudinal studies (Dale et al., 1988, pp. 50-60) as such type of data may contain information for a period of years. This feature is of utmost importance to us, as we would like to implement longitudinal comparison of tracking index funds.
- Conforms to comparative tasks of researchers (Saunders et al., 2007, p. 259). Secondary data is suitable for comparison in order to assess generality of findings.

- Guarantees permanence, unlike other types of data, secondary data is permanent and easy available for others, thus the data is more open to public scrutiny (Denscombe, 1998, p. 180).

There are also disadvantages of secondary data. According to Denscombe (1998, p. 182) and Saunders et al. (2007, p. 260) data may not fit the purpose of the study or regarded with less quality. As our main source is the Thomson Reuters Datastream intellectual network (Datastream) we trust in the quality of our data, which is due to high reliability and validity of data provided by Datastream (Datastream, 2008, pp. 1-2).

2.5.3. Quality Assessment of sources

Literature review and selection using secondary literature is a critical part, as we rely on third party information. There are several aspects regarding relevance, quality and accessibility that should be scrutinized.

The freedom of information brought by electronic media comes with benefits of accessibility and simplified distribution possibilities on the one hand, but on the other hand, with a higher risk of an insufficient level of quality. Therefore, we maintain a number of principles in order to ensure the quality of our study.

First, we make use of our own judgment; once we select an article to review we look at several indicators i.e. who is responsible for the work, who published the work, when was it published, what is the overall impression of the style and the flow of arguments that lead to the presented evidence and which other works it refers to (Adams et al., 2007, p. 61). Excluding fundamental works, we focus on recent articles rather than older ones which might be outdated. Even though this doesn't always constitutes a sufficient measure of quality, it gives a first impression on which literature to further focus on and which literature should be treated with caution.

Second, as mentioned before, we strive for articles published by well-known scientific journals. Yet, as we are facing an enormous number of different journals only on the field of business administration and economics we make use of a journal rating provided by the Australian Business Deans Council (ABDC). The ABDC established a Journal Quality List, which considers the relative standing in other recognized lists (such as the Association of Business Schools), Citation metrics, International standing of the editorial Board, the quality of the peer-review process and others (ABDC, 2013). The lists contains only recognized journals and ranks them from A* over A, B and the lowest rating C. During our literature review we avoid unlisted journals and prefer highly ranked ones.

2.6. Ethical considerations

Ethics is about drawing the line between right and wrong. It emphasizes the “do”s and “don’t”s in society. Ethical expectations exist in higher education as well as in society as a whole. Ethical behavior is underscored by numerous written and unwritten laws and regulations. However, new issues continuously emerge as societies become more complex.” (Errikson and Kovalainen, 2008)

Ethics in research deals with sets of expedient behavior in relation to the studied subject. Cooper and Schindler (2008, p. 34) identify research ethics as standards of behavior in relation to others. In business studies there are two streams in ethical considerations: deontology and teleology. The former states that no matter of results and significance of a

research, it should be ethical. The latter in contrast agrees that one could be unethical for “higher results”.

For preliminary search we use the Internet. Not a long time ago Cooper and Schindler (2008, p. 36) highlighted a concept of *netiquette*. It refers to an ethical behavior while using the Internet in relation to contacts with possible participants or privacy limitations.

The authors of this thesis take ethical considerations not only for granted but also as very important and serious element throughout the whole research process. We therefore comply with the deontology concept and believe that research can be done only in an ethical way. In order to reach a high ethical standard we adhere to the ethical guidelines of Umeå Business School in particular (made available to USBE students via Cambro (Cambro, 2013)) and to ethical codes in society in general. Both authors undertook and passed the obligatory “mini-exam” about academic ethics at Umeå Business School.

We don't have any third party participants and thus parts of ethics related to participants such as: contacting participants, privacy invasion, consent issues and appropriate informing them are not related to our research. Third, we can justify that in our study, data gathering and analysis are performed objectively – accurately and fully (Saunders et al., 2009, p. 194).

We will discuss and analyze returns of index tracking funds, which were obtained from Datastream which, as already motivated, has the reputation of a highly reliable data source. Further, all information, which we use are freely available to market participants and thus can't be harmful if it would be disclosed. The findings from our study embrace different factors which may affect others decisions in case they will use them (Khang et al. 2012, p. 280), thus we are concerned to remove any bias or false conclusion driving reporting from the study's results and endeavor to come up with an objective, underpinned by reliable data conclusions. We further indicate and properly reference all stated ideas and intellectual property of third parties and give the respective bibliographic information to give other researchers the possibility to verify this work.

2.7. Summary of methodological choices

During the appraisal of our project's methodological assumptions, we decided to implement positivism stance with objectivism concerns by performing quantitative research in a deductive way over a defined time horizon (10 years). The summary is provided below in the *Figure 8*.

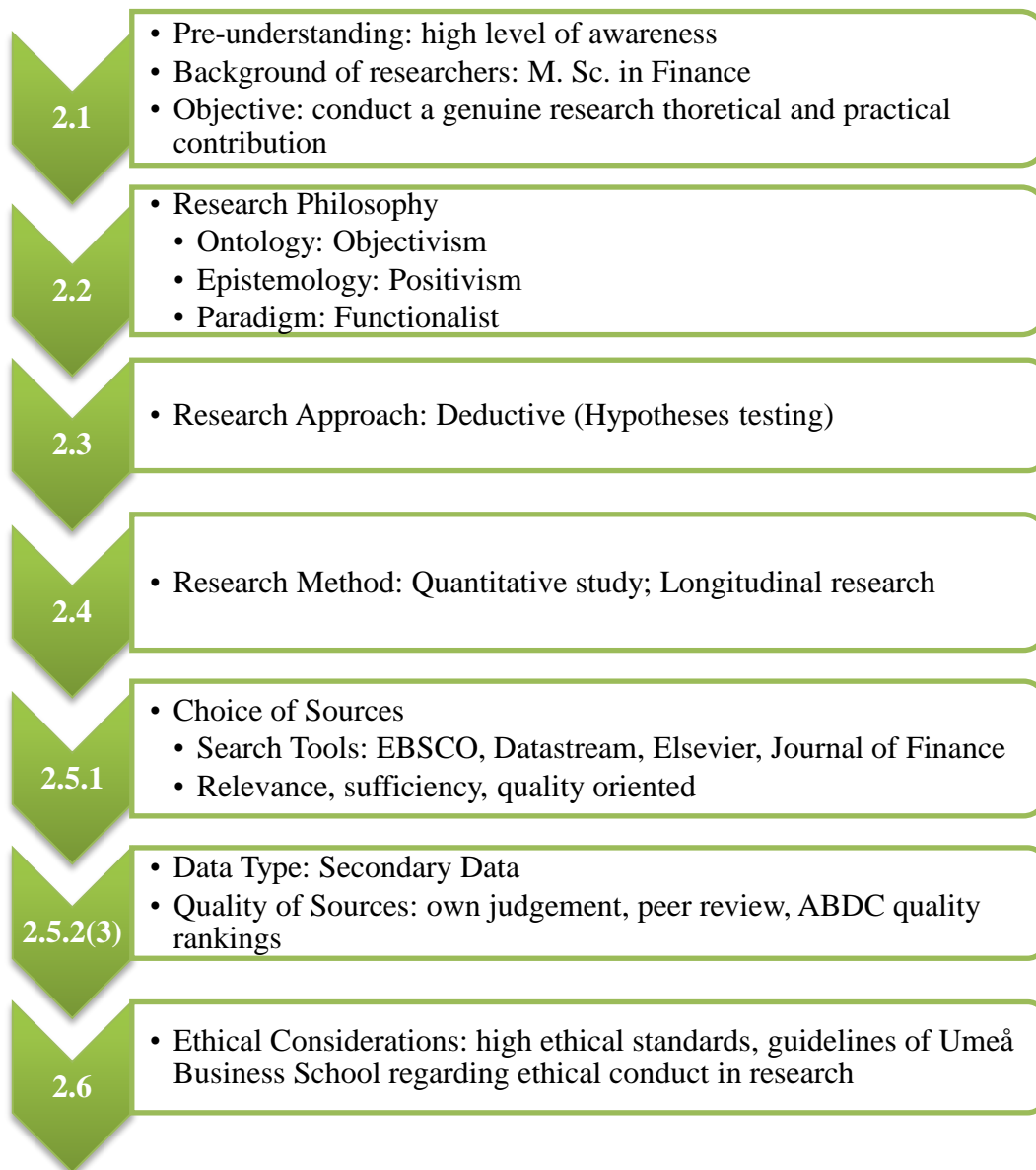


Figure 8: Methodological summary, Source: own design.

3. Theoretical Framework

Throughout this chapter we give an insight into the characteristics of the two different types of investment companies we aim to compare one another. Furthermore, we introduce important terms and definitions that we make use of throughout this paper. Among others we discuss the calculation of return differences, tracking error and indices as it was covered in previous literature. We conclude our literature review with a selection of relevant findings published by other researchers that we find to be connected to our research purpose and appropriate to base our hypotheses on.

3.1. Index

3.1.1. Definition and use of an index

Financial indices are frequently used to capture information about regional, industrial or sectional markets of economic interest and their development. Thus, an index' purpose might be to represent a geographical or political region (e.g. Asia, South America, Europe continental Europe or the EU), a countries economic development (e.g. France, Germany, Spain...), an industry (health care, entertainment, food) or a sector (e.g. emerging markets). Further, indices can be specialized in specific themes or strategies like sustainability, dividends, sports etc. Today, a huge variety of fields in all respects is covered by indices which makes it possible to include them in investment strategies or market research. (cf. inter alia Jordan & Miller, 2009, pp. 152–158)

One of the most followed stock index is the *Dow Jones Industrial Average*TM (or Dow©) which comprises large and well known U.S. companies (McGlone, 2011) followed by the Standard and Poor's 500 index containing 500 of the largest companies of the U.S (Standard and Poor's, 2012). As for Europe (and for the relevance of this thesis), the most common stock market indices are CAC40, FTSE 100, IBEX 35 and the DAX 30, tracking the largest French, UK, Spanish and German stocks respectively. On a European level, common indices are the EURO STOXX 50 (50 stocks from 12 Eurozone countries) and the MSCI Europe (consisting of 16 developed market country indices). (MSCI, 2013; STOXX, 2013).

Indices like the above listed can draw a good picture about the underlying markets. Accuracy in reflecting the true values and development is however limited due to index staleness. Index staleness occurs when an index includes stocks which are not traded on a daily basis and therefore compromise the indices monitoring accuracy. Therefore, such stock might be not represented by the index even if playing an otherwise influential role. By not including every single stock that determines the represented market but rather a portion of it, indices cannot mirror this markets 1:1. (Jordan & Miller, 2009, p. 152)

Armstrong names further problems of indices that investors might have to be aware of. Firstly, many indices (e.g. the S&P 500) are weight included securities by market capitalization. With increasing value of a constituent, this stock becomes more influential to the index in the same time and thus make it more vulnerable to concentration, i.e. that a few stocks tend to be taken as representative for the underlying market. Secondly, many investors use indices a basis for diversification strategies. Growth in particular sectors are being passed on via a respective emphasize in the index and thus can dilute expected diversification. The same applies for investment style, if one style starts to dominate (e.g. growth vs. value stocks). (Armstrong, 2011)

3.1.2. Index calculation

Financial indices may be calculated in different ways. In general, the procedure is called *weighting*. There are capitalization-weighted, equal-weighted, modified market capitalization weighted, price-weighted and attribute weighted indices. While FTSE, MSCI, S&P and Dow Jones use mainly capitalization weighting for index calculation the Dow Jones Industrial Average is an example for a price-weighted index (S&P 500, 2012, p. 4).

Devvisor of an index

In order to understand weighting, it is important to introduce such term as index devvisor first. It is used to present index in a suitable way. To get an index price, one should for each stock

in the index obtain their market capitalization (*price of the stock x No. of shares outstanding*) and sum all the results, for the S&P 500 for example, it would be around \$12 trillion nowadays. For convenience a divisor is used to divide index price by and thus get lower numbers to work with. In case of the S&P 500, in the beginning the divisor was determined by market capitalization in the base year 1943. It then was adjusted, if any changes occur in stocks, which changes the market value of the index but leave stock prices unaffected. Thus, in case of stock splits, issues of additional shares, changes in index composition, etc. the divisor is tuned to keep the index on the same level. The general formula for the divisor is:

$$D = D_{t-1} \times \frac{MV_t}{MV_{t-1}}$$

Equation 1: Index Divisor

In *Equation 1*, D is a new divisor and MV is a market value of an index. The divisor is always adjusted to cancel out any changes of index price at $t-1$, if they are not related to constituent stock prices. For example, if S&P 500 closes at 1250 and one company performs a share repurchase, in order for S&P 500 to open at 1250 next day, the shares repurchase is canceled out via divisor adjustment. (S&P 500, 2012, p. 5)

Market weighted index

For Market weighting (also capitalization weighted or value weighted) the index is calculated as a sum of the market capitalization of all shares belonging to the particular index. The formula is:

$$\text{Index Price} = \frac{\sum_i P_i \times Q_i}{\text{divisor}}$$

Equation 2: General MW index calculation

with P as the stock price and Q as the number of share outstanding. Market weighting (MW) is commonly used and most of the S&P indices, Dow Jones indices as well as FTSE, MSCI, AEX and others EU indices are capitalization weighted. (S&P 500, 2012, p. 6) Nowadays, most indices are modified, e.g. by using free-float adjustment or other methods we will briefly discuss.

Market weighted index: Capped factor

A capped weighted index constrains constituents to a specified weight and the excess weight is spread among the remaining index constituents. Thus, it limits the weight on a stock, which has “too” high market capitalization. As stock prices changes, the weights will shift and the adapted weights will change. Similar to an equal-weighted index and a modified market cap index, a capped market weighted index must be rebalanced from time to time to re-establish the correct weighting. The procedure is alike to market cap weighted indices. The main difference between the methods concerns adjustments of corporate actions between rebalancing periods. For modified market cap weighted indices most corporate actions which affect the market capitalization of a given stock are counterbalanced by a corresponding change in the adjustment factor assigned to the stock in that index, thus resulting in no weight change to the stock and no index divisor change. On the other hand, for capped indices no adjustment factor change is made due to corporate actions between rebalancing and thus, the weights of stocks in the index as well as the index divisor will change due to corporate actions. (S&P 500, 2012, p. 19)

Market weighted index: Floating factor

A method when the number of shares outstanding is reduced, in order to represent shares which are available to investors by excluding closely held shares (e.g. some stocks are closely held by the government, long term investors, or the company itself). Thus, such adjustment allows only free traded shares to be considered for index calculation. The adjustment requires having Investible Weight Factor (*IWF*), a percentage of shares outstanding and freely available for trading. Thus, in case of free float adjustment, the number of shares is adjusted by the formula: $Q_i = IWF_i \times Total\ Shares_i$. Afterwards Q is used in Equation 2 above for index price calculation. (S&P 500, 2012, p. 7)

Market weighted index: other adjustments

In addition to already mentioned modifications, it is possible that an index could be specially modified. A modified market cap weighted index has a “user-defined” weight in the index. It is used to constrain constituents to specific maximum weights. Modified market cap weighted index also must be rebalanced through time to have a “proper” weighting. (S&P 500, 2012, p. 15)

Market weighted index: AEX example

The AEX index (weighted as free float adjusted market capitalization index) calculated as:

$$I_t = \frac{\sum_{i=1}^N Q_i F_i f_i C_i X_i}{D_t}$$

Equation 3: General MW index calculation

Where Q is the number of shares of equity in the day t ; F is a free float factor of equity i ; f is the capping factor (currently 15% for AEX index) which is used to limit the weights of the stock if they exceed certain percentage of equity i ; C is the price of equity I on day t ; X is the current exchange rate on t and D is the divisor (as described above in Equation 1) on day t (as of the 10.May 2013 it was 748415614,163642 for AEX). (AEX, 2013)

Market weighted index: critique

Recently, market weighted indices calculation methods were put to scrutiny and critique. Recent studies argued that *MW* is no optimal method to create an index portfolio as it provides inefficient risk-return tradeoff (inter alia Amenc et al., 2011; Arnott et al., 2005). Thus, using market capitalization won't provide fair value as index constituents quoted prices' are biased with preconceptions of current traders (e.g. overweighed, overpriced, etc.). Therefore, Arnott et al. proposed and patented index weighting using fundamental values of a company. They argue that market capitalization leads investors to buy as prices rise and sell as prices fall, which is in contrast to the «buy low, sell high” strategy. (Arnott et al., 2005)

In addition, one should not forget that, although an index represents the market state, it also embodies capital flow and bargaining power of participants. Thus, an index price might entail: share float, share price and constituent companies influencing the market in their own way. (Ghorawat, 2013)

Effectively, market indices are a compound factor of three variable components: 1. the quantity of Share (whether Free Float or Total issued). 2. the prices of the Equity Shares and 3. the constituent companies of the Market Index each influencing the determination of the state of capital market (and hence the marked index) in its own manner. (Ghorawat, 2013)

Equal-weighted index

In this type of an index, every stock has the same weight and a portfolio that tracks the index will invest an equal dollar amount in each security. As stock prices move, the weights will shift and exact equality will be lost. Thus, such index would need to be adjusted accordingly. (S&P 500, 2012, p. 12)

Fundamentally weighted index

Using fundamental weighting requires measuring index based on stock fundamental values, which are represented by book value, P/E, P/B, dividends, revenue and gross sales. Fundamental indexation was first introduced by Arnott et al. and is based on the idea that prices are not good representatives of the current value of a stock. Thus market capitalization should be avoided due to bias in prices. The article using back testing gives significant returns in comparison with index, however as main opponents argue, such returns were achieved without incurrance of transaction costs, which would substantially eat all the profits due to a need of frequent rebalancing. (Arnott et al., 2005)

Index weighting comparison

The *Figure 9* below provides insights on three approaches. It is observed that *MW* indices would be more tax efficient and would have lower expenses. In contrast, *Fundamentally Weighted* indices would have higher turnover and show specific valuation, which is not biased by market conditions but rather grounded on companies’ balance sheet.

Three Approaches to Indexing

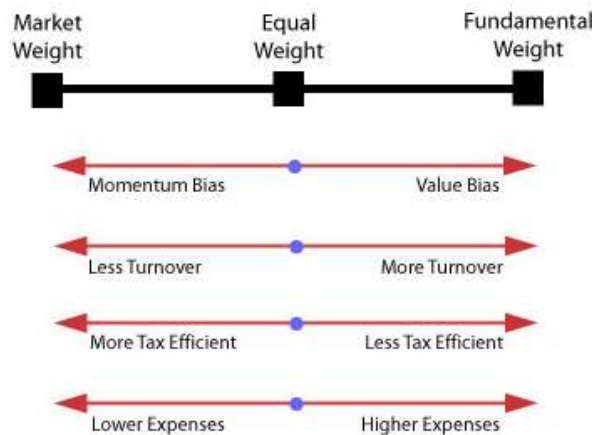


Figure 9: Index weighting comparison. Source: Shaw (2008)

Price-weighted

Price-weighted calculation of an index uses prices of stocks as weights for index price calculation. This type of weighting was criticized a lot as it won’t show the correct situation on the market. This weighting would give high weights to stocks with high values and won’t consider many small value stocks. For example, a \$100 stock would have more weight than a \$5 stock, disregarding their capitalization and company characteristics. In addition, stock prices usually do not show fair value and could be influenced by stock splits or other corporate actions. Finally, such indices should be constantly rebalanced to reveal changes in stock prices. The most popular price-weighted indices are the DJIA and Nikkei 225. (S&P 500, 2012, p. 23)

Other weighting techniques

Recently, some new methods of weighting have appeared. We list them and only give a brief description, such types of index weighting are more exotic and not used by the major indices, as we include them in this paper.

In 2005, Pure Style Indices are “attribute weighted”, where weights depend on the measures of stock growth or value attributes (S&P 500, 2012, p. 23).

Index also could be based on low-volatility, where one would limit the volatility of tracking portfolio to get price changes smoothed relatively to a normal index, in order to control the level of volatility. Income –focused indices pick stocks with the highest dividends. Dynamic indices try to focus on “attractive” stocks with high momentums. Factor indices track stocks with high beta or momentum. Leveraged indices designed to generate multiple of the return, a positive or negative one, which is defined by the index. Further, inverse indices provide investors with opposite performance of the chosen index. Next, there are many fund strategies indices, which are created by funds. Their strategy is usually to bit the given benchmark. Dividend indices would track dividend payments from the constituents of a chosen index.

That is not complete list of index types. There are other types of indices which make the investing universe broader and provide different solutions for the needs of investors (e.g. risk control indices, currency hedging indices, excess return indices). (S&P 500, 2012, pp. 27 - 50).

3.1.3. Index specifics: The example of the S&P 500

Different indices possess characteristics, which should be considered when one chooses a particular index as a benchmark. S&P is one of the main indices in the U.S. Thus many portfolios use it as a benchmark and any change in it also effects prices in stocks as many managers will trade ahead on those predicted changes to take advantage of the expected price of an index.

Before October 1989 changes in the composition of the index were announced at the end of the day when trading was closed. Thus it effected opening prices of an added stock on the next day and vice versa for a deleted stock. After 1989, S&P 500 changed the policy and announced additions or deletions as early as possible to give more opportunities to people to profit from them. (Chiang, 1989, pp. 310-312)

Furthermore, in terms of dividends in the mid-80s the index reinvested dividends every quarter and it was easier to track an index by funds during up markets as they could reinvest dividends earlier. Nowadays, the index is calculated assuming that dividends are reinvested immediately if the stock goes ex-dividend. This has important implications for index funds, as it makes tracking harder due to the deferral between actual dividend distribution and the moment when index managers receive them. (Chiang, 1989, p.311)

3.2. Return, Risk and Error***3.2.1. Return difference***

Return difference is a measure of how the return over a given period deviates from its benchmark and is calculated according to *Equation 4* below, where R_i is the return of an index fund and R_b is the return of the tracked benchmark index.

$$\text{Return difference}(R_d) = R_i - R_b$$

Equation 4: Return Difference

When tracking an index, a certain return difference is expected. This is due to the fact that the tracking index is a “paper only” index and it doesn’t experience any market fees or frictions. It is created solely for benchmark purposes and not a subject to tradable securities regulations, such as broker fees and taxes (Frino & Gallagher, 2001). It implies that returns of an index fund should always be smaller than returns of an index. For example, when weights in the index change, due to changes in volume or prices of the securities, the index adjusts the new portfolio weights automatically and calculates the value. As it happens, a portfolio manager needs to adjust his weights by performing real transactions on the market, which is subject to broker fees and taxation. Therefore, there will be always a return difference between an index tracking fund and its benchmarked index. The difference in a perfect market conditions is expected to equal the amount of transaction costs (Frino & Gallagher, 2001).

According to Chiang (1998) the main drivers of return differences are transaction costs, fund cash flows, the treatment of dividends by the index, the volatility of the benchmark and index composition changes. In addition, one could say that there will be always a tradeoff between minimization of return differences and cost minimization. Portfolio managers will decide when they should rebalance the weights and become more efficient in tracking an index, on the one hand. On the other hand, they would prefer to keep weights unchanged in order to avoid transaction fees and stay cost efficient. Therefore managers’ decision always is a compromise aimed on reducing the return difference. (Frino & Gallagher, 2001)

3.2.2. Tracking Risk

Tracking error as measure for tracking risk was first defined by Tobe in 1999 as a percentage difference. Nowadays it is calculated as a standard deviation of return differences. It measures deviations in index tracking.

$$TE = \sqrt{\frac{\sum(R_d - \bar{R}_d)^2}{n-1}}$$

Equation 5: TE as defined by Tobe (1999)

In Equation 5, \bar{R}_d is return differences mean and n is a number of observations. In denominator $n - 1$ is used, not n because our estimation of tracking error is based on a sample, thus according to Bessels’s correction (cf. entry for ‘variance (data)’ in Upton & Cook, 2008), we estimate unbiased estimator of the variance of population and use $n - 1$ degrees of freedom instead of sample size n .

One could see that the TE is simply a standard deviation, which can be defined as

$$TE = \sqrt{\text{var}(R_i - R_b)}$$

Equation 6: Tracking Error Estimate

Equation 6 makes sense, as we use *TE* to estimate a variance of return differences. If *TE* is big we can conclude that tracking is performed poorly and there are high dispersions between index funds and benchmark index return. (CFA, 2012, p. 473)

TE may be used as a probability measure. For example if *TE* is 3 percent annually (means that we use annual return differences), under the assumptions of cumulative standard normal distribution, the probability that index fund returns will vary from +3 to -3 percent, is 68%. In turn it means that the fund may outperform or underperform an index with a probability of 16 percent. Normally, *TE* had not exceeded 2 percent until 1999 (Lawtone-Brown, 2001, p. 224,226).

TE is often used as a key ratio for fund selection process; it is also a goal estimator for a fund and a measure of performance of an index fund manager (Chiang 1998, p. 308). The causes of tracking error are tightly connected with return differences. They are costs, replication methods, turnover, management experience and enhancements (Chiang 1998, p. 308).

Several authors claim that using standard deviation to measure risk of deviations of a fund from a benchmark is inappropriate due to return distribution characteristics, however if we take samples from the market as a whole and use a long time horizon, the standard deviation should be a reasonable estimator of risk. (Louargant et al., 2006, p. 193)

In academic literature *TE* minimization is a problematic process. Roll (1992) tried to solve the asset allocation problem and under the constraints of minimal *TE* obtained not a mean-variance efficient portfolio. In addition, Ammann and Zimmermann (2001) showed that while return correlations within a fund falls, *TE* raises. Furthermore, according to research by Lawtone-Brown (2001, p. 224) tracking error could be easily underestimated due to the fact of volatility clustering, which violates stationarity of volatility.

The above stated *Equations 5* and *6* show the most common notation of calculating Tracking Error. Apart from this definition, for our analysis we will make use of two additional estimates which were used by Frino and Gallagher (2001) and will be introduced in *chapter 4* of this work.

3.3. Funds

3.3.1. UITs, Open-end- and closed-end funds

Investment companies provide services for investors who are not professionals in finance. Usually they are separated in open-end funds (mutual funds), closed-end funds (CEFs), or unit investment trusts (UITs).

Open-end investment companies or mutual funds

In this fund type investors purchase or redeem shares of the fund directly from the company or by contacting a broker. Assets of a fund are reduced when shares are repurchased and vice versa. If one would like to buy shares from a fund, according to the security regulations, a prospectus must be disclosed to potential buyer. It has to inform about management fees, other expenses, risks and minimum investments. (Anderson et al., 2010, p. 4)

Mutual funds, which apply a more passive strategy in replicating an index are called mutual index funds (SEC, 2007). This type of funds we refer to in our study, as we want to research their tracking performance in comparison to ETFs.

Closed-End Investment Companies

In a closed-end Investment Company, shares are distributed at an initial public offering (IPO) which is preceded by the issuance of a fund prospectus. After the IPO, money obtained by the fund is invested according to the policy statement in the prospectus. The difference to mutual funds is that the closed-end fund issues shares only once and investors can't liquidate shares. Instead, they can exchange shares on the secondary market or over the counter (OTC). One should note that there are no legal requirement that the price of the shares should represent the fund's current assets, thus it is determined by supply and demand on the market. Net assets (Assets – Liabilities) divided by the number of shares outstanding gives net asset value (NAV); it is used as measure of the relationship between stock price and fund's assets value.

$$D = \frac{NAV - MV}{NAV}$$

Equation 7: Premium or Discount of Funds

In *Equation 7*, *MV* is a market value of a share, *D* is the percentage difference between NAV and *MV*. If NAV is bigger than *MV*, it is called *a discount*. If it is less, *D* is called *a premium*. Discounts usually prevail on the market. (Anderson et al., 2010, p. 4)

Unit Investment Trusts

Unit Investment Trusts (UITs) offer unmanaged portfolios. For a specific period of time UITs create a well-diversified portfolio, which is fixed over the whole period. Thus, UITs can't be sold or bought after initiation. Initial sale is usually performed by a broker. The main goal of buying UIT is to obtain diversified portfolio for a fixed period for a capital appreciation (stock trust) or a fixed return (bond trust). (Anderson et al., 2010, p. 5)

Excursus: Hedge Funds

Famed hedge fund manager Mario Gabelli wrote in 2002: "Today, if asked to define a hedge fund, I suspect most folks would characterize it as a highly speculative vehicle for unwitting fat cats and careless financial institutions to lose their shirts" (Gabelli, 2002, p.1). Such statements are considerable since hedge funds are often referred to as highly profitable investment companies, which use advanced strategies to diversify risk. Negative opinions emerged mainly due to large failures of hedge funds in 2000s and 1990s. Hedge funds are a limited partnership, which accepts investor's money and invests it in a pool of securities. They use different enhanced strategies to obtain absolute returns, such strategies employ: arbitrage strategies, event driven strategies, short selling, use of derivatives, and leverage. Thus, hedge funds are popular in bear markets. (Bollen & Pool, 2012)

One can see that a hedge fund is similar to a mutual fund, however, they differ significantly in terms of return goals. For example, if the market is down 10% and a mutual fund only 7% it would be a success for a mutual fund. A hedge funds target absolute returns on the other hand are not correlated with the market, and should always to be substantial (around 6 - 9% annualized return). In theory, this had to be achieved by using more sophisticated strategies in comparison to mutual funds. Moreover, hedge funds are not obliged to be registered under the SEC, as only financially sophisticated investors are accepted to invest. To sum up, hedge funds should reduce risk as it is professionally managed by using enhanced strategies. In reality however, hedge funds tend to strive towards higher returns which eliminates safety and leads to high risks and in many cases to bankruptcy. (Anderson et al., 2010, p. 6)

3.3.2. Exchange Traded Funds

Exchange Traded Funds are a younger version of and special case to traditional index funds. Both fund types aim to provide investors with access to the return of a certain benchmark. Yet, their characteristics differ with respect to tradability, index replication and creation and redemption process.

Even though the SEC legally classifies ETFs as open-end companies or Unit Investment Trusts (SEC, 2010a), Deville calls ETFs a hybrid instruments, which combine the advantage of open-end unit trusts and closed-end funds. This is explained on the one side by the ETFs tradability, which is comparable to closed-end funds, and by the ETFs creation and redemption process on the other side, which takes the form of open-end funds (Deville, 2008, p. 9). In a nutshell, ETFs can be traded on a continuous basis throughout the trading day while having the possibility to create or redeem ETF units according to the current demand.

Tradability

The origin of Exchange Traded Funds and their unique trading characteristics lies in the first Exchange Traded Index Fund to be launched. Released by Standard & Poors, the fund was called Standard and Poors's Depository Receipts (SPDR) or also 'Spiders' and followed the objective to provide the investment results of the S&P 500 in price and yield performance. Being traded on the American Stock Exchange (like an ordinary stock), one Spider has a price equal to approximately one-tenth of the S&P Index. One of the features that distinguish ETFs from Mutual Index Funds and drives sufficient liquidity is their creation and deletion throughout an in kind transaction. (Elton et al., 2002, pp. 454,466)

Creation and Redemption

Creation and Redemption is the process how rising demand for an ETF is served and vice versa. The ability to create and redeem ETF units on a continuous basis (during the markets are open) is unique for ETF companies and essential for their trading characteristics and therefore important to understand for doing research regarding this fund type.

Even though ETFs are often linked to closed-end funds in that ETF shares can be purchased and sold on exchange markets, the ability to create or redeem ETFs in-kind silhouettes them from the letter (Meziani, 2006, p. 41). In kind creation means investors can turn in the share the ETF uses to replicate the index plus an additional cash amount in order to receive an ETF Creation Unit (CU). Likewise, Creation units can be turned in and the stock basket used for replication is received. I.e. an ETF unit is liquidated (Elton et al., 2002, p. 466). This ongoing process is one of the reasons ETFs tend to trade within a tight band around their Net Asset Value, as any price difference between ETF and stock basis creates arbitrage opportunity that will be used by market makers (Abner, 2010, p. 179; Ferri, 2009, p. 36).

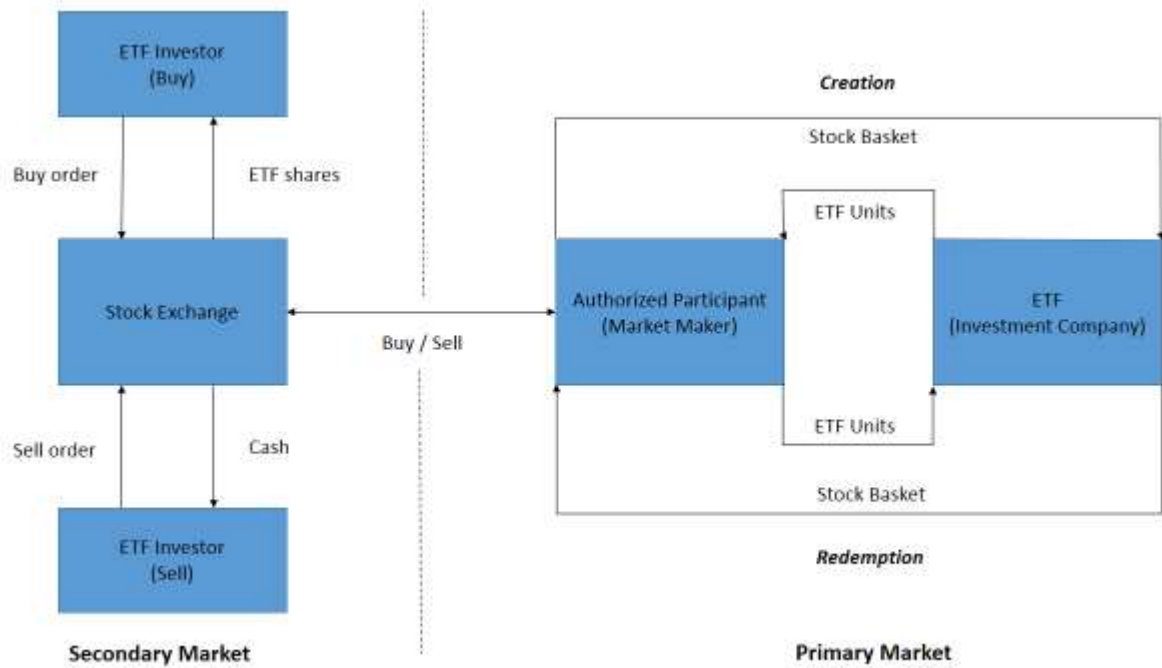


Figure 10: ETF Trading Mechanism; Source: Own design, motivated by Deutsche Bank Research (2008, p. 8).

Figure 10 shows the trading mechanism, including the creation and redemption process of Exchange Traded Funds. It is important to notice, that private investors only have access to ETF shares via the stock exchange and thus cannot request creation units directly from the company. This right is exclusively reserved for authorized participants (APs) who use the premium or discount spread between ETF and NAV to realize arbitrage (Ferri, 2009, p. 36). Once an AP delivered the underlying stock basket to the fund company she receives ETF Creation Units (CUs) in return which are large blocks of ETF shares, usually numbering up to 50.000 shares. The size however, can vary according to the respective ETF. She then can sell the ETF shares from the creation unit at the secondary market, i.e. at the stock exchange and thus provide individual investors with sufficient ETF liquidity (Ferri, 2009, p. 34).

Mutual Index Funds on the other hand, miss this 'in-kind' creation and redemption. Here, investors deliver cash in order to buy fund shares or receive cash in order to redeem them. This leads to additional fund flows, triggering additional transactions costs since the fund management has to invest into the benchmarks constituents itself. Furthermore, Mutual Index Funds have to hold a certain percentage of assets uninvested to meet redemption needs. Due to the dependency on the liquidity of an index constituent stocks, Kostovetsky calls this movement of cash in and out of index funds a secondary cause of tracking error. (2003, p. 82)

3.4. Fund Management

3.4.1. Active and Passive Management

In general fund management strategies can be labeled as active and passive. Passive strategies are popular nowadays due to intuitive simplicity and overall higher stable returns in comparison to active strategies. Passive investment refers to stock or bond portfolio managing using simple buy and hold or index replicating strategies. One of the examples of passive strategy is index fund management. For example if Nordea stock constitutes 4 % of an index,

a fund will allocate 4 % of its funds in that stock. According to recent performance measurement passive strategies outperformed more than 75% of active managers during the last 5 years. During the last 20 years passive management outperformed more than 80% of active management. (Elton et al., 2010, p. 696)

Usually, it is assumed that index funds would underperform an index, as was stated before, due to additional costs. However, some studies suggest that it could be the opposite way. This is due to the fact that big indices often miss small stock dividends. In addition, index funds could sell owned stocks to willing investors sometimes above market price, usually if investors want to short a stock but it is not available freely on the market. Given these two assumptions index fund might outperform an index over long time. It is also clear that none index fund exactly matches an index, due to different facts already mentioned above. It means that in growth markets funds perform a little worse and vice versa in down markets. (Elton et al., 2011, p. 697)

It is important to mention that although passive management commonly refers to managers, who try to use buy and hold strategy to replicate an index it is not always the whole picture. Passive strategy may also involve analysis by using past data, for example it could be a passive strategy to buy stocks with low P / B ratios. However when it comes to forecasting it is assumed that it is an active strategy. (Elton et al., 2011, p. 697)

On the other side of passive strategies comes an active management, during such strategy one should determine a benchmark. It would be used as a measure of performance, thus management will focus on implementing different strategies to outperform a pre-chosen benchmark, which is usually an index. There are a big variety of strategies a manager could use, however there are three most used, which are worth to have a closer look at; market timing, sector selection and security selection. Market timers focus on changing a Beta of their portfolio according to market forecasts, thus obtaining desired sensitivity towards the market. Security selectors look for specific characteristics of a stock based on its analysis and as a result make a bet against a market, they increase weights of a stock in a portfolio (positive bet) of an undervalued stock and decrease the weights of overvalued stocks. Sector selectors are quite similar to security selectors, but they focus on specific sectors. Possible characteristic of a sector could be: industrial classification (energy, banking, utilities, etc.), product classification (e.g. healthcare, services, consumer product, etc.), stock characteristics (e.g. growth stocks, stable stocks, etc.) and sensitivity of a group of stock to specific phenomena on the market (e.g. exchange rates or yield curve). It is common that managers usually specialize in a particular industry due to continuous increase in specifics of each industry. (Elton et al., 2011, p. 699)

It is difficult to determine, whether the active or passive strategy is superior, although many recent studies based on the net returns point out that passive strategies perform better. In general active management had to overcome several categories of costs in order to deliver substantial returns. These categories are:

- cost of forecasting (managers with good forecasting ability usually demand high fees);
- cost of diversifiable risk, as portfolios have more diversifiable risk in comparison to an index, which is close to zero. Investors usually demand compensation for excess risk;

- higher transaction costs as active investing usually require higher turnover in contrast to low turnover in buy and hold strategies;
- cost of taxes due to early gain realization. Actively managed funds have high turnover and thus according to the tax law should recognize tax on the gains if the fund sells stock. Although passively managed funds are also concerned with taxes (e.g. if an investor sells his part, a fund should also recognize taxes on gains or losses), they do not have high turnover and thus recognize taxes not so often. (Elton et al., 2011, p. 701)

3.4.2. Passive Index Tracking

For our empirical study we focus solely on passively managed index tracker funds. After having distinguished active management from passive management, we now discuss the different forms of passively managed fund companies in more detail. Our main focus for that matter lies on open-end index funds and Exchange Traded Funds, which we aim to compare throughout this paper.

3.4.3. Index Tracking Strategy

As we have seen, due to structural differences between the theoretical construct ‘Index’ and the physical construct ‘Fund’, a certain tracking error in index fund performance is indeed inevitable. Therefore, after having agreed on a fund strategy, emitters have to decide on the further motivations and characteristics of the new fund. I.e. it is to decide whether the fund portfolio will be actively managed with the attempt to outperform the index performance or if the goal is a passive strategy which gives the fund a pure tracking characteristic within a certain accuracy limit (Wagner, 2002). Since our sole focus lies on passively managed funds, we have a closer look on the replication methods fund managers can make use of in order to reduce the trade-off problematic between replication cost and replication quality.

The first and most intuitive method in building a portfolio that replicates a benchmark’s performance is to invest in all the benchmark’s constituents using the exact same proportions (Frino & Gallagher, 2001b, p. 3). This straightforward method where managers rebuild a smaller version of the benchmark is called full replication approach. Yet, in practice, a full replication of the index can be unpractical especially when the target index consists of a large number of constituents which leads to undesirable transaction costs, once the index is re-adjusted (i.e. constituents are added, deleted or weights are changed) (Di Tollo & Maringer, 2009, p. 130). A full replicating Index Fund then has to proportional buy or sell the effected stock to its market value (Blume & Edelen, 2002, p. 12). Tollo and Maringer therefore formulate the optimization problem of index tracking “to find asset weights so that the portfolio’s behavior differs from the benchmark’s as little as possible“ (Di Tollo & Maringer, 2009, p. 130).

3.4.3.1. Physical Replication

Investing directly into an indices’ constituent in order to replicate its performance, as it is done with full replication, can be called a physical replication approach, as fund management accesses stocks which are actual part of the index. As was discussed before, full replication is often a non-optimal solution due to the incurred costs. Therefore, solutions have to be found in order to replicate the index performance without fully replicating it.

Another, yet physical approach is the partial replication (or representative sampling). Here the fund management makes use of a representative sample of constituents, where the chosen stocks in the fund portfolio reflect the same weights with which they are listed in the respective index (Hehn, 2005, p. 9). If a fund portfolio is constructed under transaction costs and liquidity constraints (cf. Bamberg & Wagner, 2000, p. 526), this approach of approximate index replication is especially useful if an index holds a large amount of constituents, including numerous very small (less influential) and few large positions which dominate the direction of performance. To draw a picture, one can look at an index fund tracking the MSCI World Index in 2008 when it listed 1944 companies. While the smallest constituent made 0,0008% of the index, the biggest made up for 1,8%. Looking at the iShares MSCI World (IQQW) shows that the ETF in 2008 counted 932 companies (cf. Ehmann, 2008). The challenge with physical replication of complex indices is therefore to find the right distribution between the risk of occurring costs and the maximum tolerated tracking error.

Sampling can also be achieved by making use of mathematical algorithms to construct a portfolio of a determined number of stocks, which best track the index. Another approach is based on investing using characteristics weights of an index. Some of the characteristics usually are industry, capitalization and sector. For example, if the index consists of stocks from different industries (e.g. consumer products, financials, healthcare, etc.) one would invest in a smaller set of stocks, which matches the index to the amount specified by the characteristics (e.g. same percentage in industrial, financial and healthcare stocks). (Elton et al., 2010, p. 697)

Tracking error vs. Total Return

Choosing between full replication and sampling can be a tough task for a fund company. When reflecting on fund replication of the S&P 500 index¹, Blume and Edelen point out the sensitivity of the trade-off when a single index constituent is deleted from the fund portfolio. Hence, following their example, if in 2000 a stock was removed from the fund portfolio which represented only 0,07% of the S&P 500 Net Asset Value, the subsequent standard deviation of the Tracking Error would be 2,6 basis points, while the standard deviation of the portfolio return maintains the same as prior to the change (2002, pp. 8–9). Even though the standard deviation of return remains unchanged, where Tracking Error is used by investors to measure the fund management's tracking ability, an increase in Tracking Error standard deviation can have negative implications for delegated investment objectives (cf. Blume & Edelen, 2002, p. 2).

3.4.3.2. Synthetic Replication

Apart from the physical replication, a newer trend in the ETF industry is the more complex synthetic replication. Even though higher complexity, 64% of the ETFs launched from the year 2009 decided to adopt a synthetic replication approach. This replication method is based on an exchange between the ETF and a counterparty, and therefore also called swap-based replication. To set up a synthetic replication, an ETF invests in a stock basket which might, regarding investment strategy and composition, completely differ from the benchmark index. The swap contract then allows for a total return swap between both parties, where the swap partner receives the return of the ETF-emitters stock basket and in return guarantees to deliver the benchmark indices' return. (Ehmann, 2008; Abner 2010)

As the swap partner has to settle possible underperformances of the ETFs hedge basket, the architecture of a swap-based Exchange Traded Fund transfers the performance risk from the

¹ The S&P 500 index consists of the 500 leading U.S. large cap equities (Spindices, 2013)

fund issuer to its swap-partner (Heidorn, et al., 2010, p. 7). In practice, the swap-partner is often the funds' holding company (Meinhardt, Müller, & Schöne, 2012, p. 1)².

Time	ETF (Stock Basket)	Value of Swap (Index – Stock Basket)	Swap-Contractant (Index)
Day 0	100	0 (0,00%)	100
Day 1	100	4 (3,84%)	104
Day 2	102	5 (4,67%)	107
Day 3	100	9 (8,25%)	109
Day 4	109	0 (0,00%)	109
Day 5	108	-4 (-3,70%)	104
Day 6	109	-8 (-7,92 %)	101

Table 1: Value Simulation of a Swap; Source: Own design, motivated by Deutsche Bank (2008, p. 8)

This constellation implies a contractant risk in the case of insolvency of the counterparty. According to the European fund guidelines UCITS (Undertakings for Collective Investments in Transferable Securities), this risk must not achieve more than 10% of the funds' Net Asset Value, which is achieved by the ETFs obligation to hold at least 90% of its NAV (Heidorn et al., 2010, p. 8). In practice, many ETFs overly secure their portfolio in order to eliminate the contractant risk³.

Table 1 shows a fictive example of a swap-based index replication with the ETF-company of the one side and the swap-contractant on the other (usually the ETFs holding company). At day 0 the swap agreement between both parties is made and the initial stock basket is build up in a way so its NAV exactly corresponds to the present NAV on the benchmark index. In our scenario, the value of the index climbs from 100 to 104 at the first day after the agreement. This leads to a deficit of the ETF stock basket which has to be aligned by transferring funds from the swap-partner to the ETF. The value of the swap from the ETFs' perspective increases to 4 and a contractant risk of 3,84% (4/104). On day 3 the stock baskets' NAV reverses to its initial value, while the index NAV continues to increase to 109 which leads to a swap value of 9 and to a contractant risk of 8,25% (9/109). Being close to the maximum allowed risk, this is a strong sign for the fund management to react by resetting the swap; therefore, the swap-partner transfers the swap value of 9 to the ETF which then uses the funds to reinvest in the stock basket so that the baskets and the index NAVs are aligned again. Day 5 shows the reverse development, i.e. the index NAV decreases against the stock basket. The incurred payment from ETF to swap-partner implies a negative swap value and is seen as over-collateralization the swap. To avoid growing over-collateralization, an equivalent amount of the stock basket can be liquidated and paid to the swap-partner.

While investigating differences in tracking error of German ETFs that use full replication in contrast to those using synthetic replication, Meinhardt et al. found that, even though German ETFs suffer from high tracking errors, the choice for either one of the replication methods cannot be explained by the tracking error (Meinhardt et al., 2012, p. 13). According to them, the decision can rather be explained due to the liquidity or illiquidity of the benchmark index.

² cf. inter alia db x-tracker ↔ Deutsche Bank; ComStage ↔ Commerzbank and Lyxor ↔ Société Général

³ cf. inter alia db X-trackers CAC 40® UCITS ETF with a net swap exposure of currently 2,45% (db X-trackers, 2013)

Thus, it can be more convenient to use synthetic replication in order to replicate an index with illiquid constituents.

3.4.4. Fund related costs

Investment companies commonly try to attract new investors by advertise their passive index trackers with low management fees as compared to enhanced funds. In fact, Hübscher states that costs are the most important reason why managers of active funds have a hard time to beat the index (2005, p. 77). Khorana et al. found that Index Funds consistently charge 36 basis points lower management fees than actively managed funds (2009, p. 1295)

Hübscher further names the factors which lead to this difference in costs for actively managed funds;

Management Fees – Significant higher Management Fees due to the need for analysts, researchers etc. for maintaining an active portfolio

Trading Costs – While passive portfolios cause a turnover of usually around 10% per year, active funds have a turnover between 75-100% p.a. This leads to higher trading costs due to Brokerage Fees, Taxes, Spread and Market Impact in relation to passive portfolios. (Hübscher, 2005, p. 78)

Total Expense Ratio

Beside management fees which include charges for management services, a more common and conservative measure is the funds' Total Expense Ratio (TER). TER covers all annual operating costs and is defined by Morningstar as follows:

"The expense ratio typically includes the following types of fees: accounting, administrator, advisor, auditor, board of directors, custodial, distribution (12b-1), legal, organizational, professional, registration, shareholder reporting, sub-advisor, and transfer agency. The expense ratio does not reflect the fund's brokerage costs or any investor sales charges." (Morningstar, 2013)

As seen in the definition, the expense ratio misses brokerage costs. Since TER frequently serves as a target ratio for fund managers, Herring and Hunke explain this lack of inclusion through the need of Managers to react to recent market developments even if this means to exceed the target expense ratio. They further state, that investment companies are not obliged to publish such costs in order to protect cost advantages compared to the competition, where the costs on case of higher transparency can exceed their benefits. (Herring & Hunke, 2001, pp. 908–909)

Even though the TER excludes costs, such as front-end, back-end loads and certain distribution, as by the investment companies frequently updated and published ratio, it serves as an accessible and representative ratio for occurred costs fees (for a more thoroughly measure refer e.g. to the *total shareholders costs* as used by Khorana et al., 2009, p. 1286). TER is calculated as

$$TER = \frac{TC_t}{TA} * 100$$

Equation 8: Total Expense Ratio

where TC_t are the total costs occurred in business year t divided by the average total assets (TA) of the reported period. (cf. inter alia BVI, 2010, p. 1; Herring & Hunke, 2001, p. 909)

Since the data collection and calculation of more complex cost ratios would exceed the scope and resources of this thesis, we decided to accept TER as a satisfactory indicator for occurred and passed on costs in which we can base our analysis.

3.5. Review of Previous Literature

3.5.1. ETFs vs. Mutual Index Funds

As we saw throughout this chapter, there are some features shared by both, Exchange Traded Funds and Mutual Index Funds and some that distinguish them one from another. This part of the chapter gives a summary of previous literature that focused on similarities and differences in benchmark tracking between the two fund types.

Elton et al. (2002) compared the performance of the first ETF (SPDR) with the Vanguard Index fund family. They found that both investment vehicles have tracking errors and usually an investor, who holds SPDR receives on average 18 basis points (bps) less return than index fund investor. They point out that the benefit of ETFs is that they could be traded during day, thus additional liquidity of ETFs add additional costs. Further, if one would compare SPDRs with an index, return underperformance would be around 29 bps, which can be traced back in management fees (18,45 bps) and loss from not reinvesting dividends (9,95 bps). The notion of not reinvested dividend is similar to Gastineau (2004). On the other hand, investigating tracking differences of SPDRs, disregarding expenses and dividends, shows that their tracking error is tiny (Elton et al., 2002, pp. 464–465).

Kostovetsky shows that the key differences between Mutual Index Funds and Exchange Traded Funds are to find in management fees, shareholder transaction fees and taxation efficiency. Assuming identical tracking and other restrictive assumptions, he affiliates a one-period model which shows that with respect to fees, dividend treatment and tax structure, ETFs become superior to Mutual Index Funds with increasing investment levels. While for smaller investments Mutual Fund return is higher, ETFs become preferable for higher investments, while the investment level for the change of preference depends on tax rates, expense ratio, brokerage commission, number of purchases and capital gains distribution ratio. Extending his research to a multi-period model shows that if the investment is considered over a longer time period, even though initially index funds are better off, after an extended period of time ETFs clearly dominate due to superior tax efficiency and lower expenses. This preference increases quadratic with the number of time periods considered for the investment. (Kostovetsky, 2003, pp. 85–91)

Agapova (2011) also argues that the existence of those similar investment vehicles separates investors in two different categories according to their needs. She investigates the clientele effect and points out that ETFs possess higher liquidity, lower expense ratio and higher marginal taxes. Index funds, on the other hand, have lower taxes and transaction expenses, because shares are purchased directly from a fund, thus they don't require brokerage fees. As a result, long term investors would choose ETF (low management fees) and short term investors – index funds (no commission costs). She states that lower TE is more important to investors than returns as they base their strategies on indices, thus seeking perfect replication. In a nutshell, she found that both, ETFs and MIFs which track Dow Jones, have on average the same tracking error, which indicates that they are not statistically distinguishable in their

ability to track the index. Further, both fund types do not out- nor underperform the index (Agapova, 2011, p. 332). Based on her investigation, she concludes that ETFs and index funds are good but not perfect substitutes and they will coexist in future. Their coexistence will enhance markets functionality, as they provide more options for investors.

Svetina and Wahal (2008, p. 17) gave further evidence for the substitutional character of ETF and MIF by showing a reduction in net flows to existing Mutual Index Funds the moment a competing ETF enters the market (i.e. an ETF following the same strategy). Apart from very little evidence for better performance of ETFs when compared net of fees, they found no statistically significant difference between MIFs and ETFs, but state that many ETFs offer access to strategies which are so far not covered by Mutual Funds, especially regarding narrow market segments (Svetina & Wahal, 2008, p. 13).

While seeking to understand the growth of ETF industry, Guedj and Huang find that neither the trading structure of open-end index funds nor the one of ETFs is superior to one another. According to them it is rather a different allocation of transaction costs that drives investors' decision for one fund type and against the other. While induced transaction costs are shared by mutual fund investors (cross-subsidization), they are borne individually by ETF investors for every transaction. Thus, the open-end mutual fund structure provides a certain liquidity insurance which makes it more attractive for short term investors who, if using ETFs, would induce high transaction costs they had to bear individually. These results about decision making are in accordance with Kostovetsky's (2003) findings. They, however, further discuss the possibility of higher costs for the liquidity insurance of mutual funds due to moral hazard issues arising from the shared cost structure. (Guedj & Huang, 2008, pp. 13–35)

Blitz et al. made a combined research of index tracking funds, including Mutual Index Funds as well as Exchange Traded Funds listed in Europe and using the most important, equity market indices from the U.S., Europe, Japan, global and the emerging markets as benchmark (2010, p. 652). First they show that basically all passive funds under investigation substantially underperform their benchmark with an average of 84 bps. When investigating the extent to which underperformance can be attributed to Total Expense Ratio Blitz et al. show that for the average underperformance of 84 bps, an average of 59 bps can be allocated to Total Expense Ratio. They further allocate the remaining part to dividend taxes, which are not accounted for when calculating Total Expense Ratios. Hence, these taxes almost entirely explain the after other expenses remaining underperformance, and make the explanatory power of taxation as reason for underperformance at least on par with fund expenses. (Blitz et al., 2010, pp. 654–662)

One of the few researches that matches ETFs and Index Funds which track the same indices is presented by Rompotis (2005). He matches 16 ETFs and Index Funds on the same, mainly U.S. benchmarks in order to perform an empirical comparing investigation, regarding return, volatility, tracking ability, expenses and the relationship between expenses and performance (Rompotis, 2005, p. 8). Using a time period between beginning of 2001 to the end of 2002, he doesn't find significant differences in return and volatility compared to the benchmark for either ETF nor Mutual Index Funds. A regression analysis shows that neither Index Funds nor ETFs derive any excess return, but also that ETFs seem to track the index composition more closely compared to Mutual Index Funds. Examining the respective cost structure, Rompotis first shows that the direct stated costs for ETFs are significantly lower than for Index Funds (2005, p. 15). However, further discussion shows that ETFs bear hidden transaction costs and brokerage fees. Applying another regression between returns and expense ratio, he calculates a significant positive relationship only for raw returns of ETFs (Rompotis, 2005, p. 16).

Frino and Gallagher (2001) performed substantial research in investment product industry. They compared ETFs, Mutual Index Funds and funds with active strategy in relation to S&P 500 tracking. Their analysis was based on 5 years span from 1995. The key findings were that both passive and active financial instruments underperform the index net of costs, but passively managed funds both ETF and MIFs have higher returns than actively managed funds. Referring to our research area, Frino and Gallagher stated that index funds underperform an index due to market frictions, which an index doesn't have as being calculated only "on a paper". Next, Frino and Gallagher (2001, pp. 7-8) based on Roll (1992), Pope and Yadav (1994) and Larsen and Resnick (1998) demonstrated three conceptual ways in calculating the tracking error: (1) as a standard error of regression; (2) as standard deviation of return differences; and (3) as an absolute return difference. Their check for seasonality of tracking error revealed that it is higher in January and May and quarter endings. In addition, their research tried to discover the key sources of tracking error. Similar to Chiang (1998) and studies performed over last decade, they agree that stock liquidity, index rebalancing, transaction costs, dividends, volatility of particular index and other sources will lead to the underperformance of an index fund relative to its benchmark. Furthermore, they found that TE is highly dependent on "dividend effect" of S&P 500 constituents, timing and size of index divisor adjustments.

Using different measures of tracking error estimate, Meinhardt et al. compare replication methods of Exchange Traded Funds. They state that German ETFs generally suffer from high Tracking Error and that in contrast to previous claims, synthetic ETFs and full replication ETFs do not show different Tracking Error for their sample. Applying multiple regression, they investigate influential factors that contribute to Tracking Error and estimate coefficients for total expense ratios to be between 0,5875 and 1,0622 depending on the TE calculation method. They further show, that apart from Total Expense Ratio, risk and volume are determinants of Tracking Error (Meinhardt et al., 2012, pp. 18–21).

3.5.2 Tracking Quality and Market Condition

It seems likely to assume that Tracking Error is correlated with the volatility of the market. I.e. if risk increases, the index becomes more fluid and it gets harder for fund managers to apply sufficient tracking strategies. The relation between ETF Tracking Error and market volatility throughout the time was first explored by Frino and Gallagher (2001). In their study they found a seasonal pattern insofar that TE was highest in January and May and lowest in June, as a result of dividend announcements which was instantly absorbed by the index price and only delayed by index fund managers. Further studies with a focus on TEs and market conditions were done throughout several papers by Rompotis (2006, 2011), Blitz and Huji (2012), Aber et al. (2009) and Ivanov (2012).

Rompotis observes that TEs are strongly persistent at a short term level and positively related to market risks. E.g. when regressing the Tracking Error of 74 iShares ETFs (traded in US during 2005-2006) to the index volatility, fund volume and trading premium, he found that risk on average had a coefficient of 0,37 and was significant at the 1% level (2006, p. 4). In a similar study on iShares between 2002 and 2007, he regressed TE to index volatility and obtained coefficient ranging from 0,5 to 0,7 (2011, p. 34). Blitz and Huji noticed that TEs are higher during high return volatility of an index. This trend was observed regardless of the frequency used to calculate returns (2012, p. 155). Aber et al., similar to Frino and Gallagher (2001) and Elton et al. (2002) state that tracking error is strongly affected by index volatility, the fund's beta and other market factors (2009, p. 219). Looking on REIT (Real Estate

Investment Trust) ETFs, Ivanov found that TEs increased during the U.S. subprime mortgage crisis of 2007 – 2009 in the U.S. and decreased after it (2012, p. 4).

3.6. Formulation of Hypotheses

Previous literature agrees on that there is room for co-existence of ETFs and Index Funds for different reasons, of which the most discussed are liquidity, tax differences and fund expenses. Comparing fund types on the same benchmark resulted in only small return differences for both categories even though the overall tracking accuracy seems to be a bit higher for Exchange Traded Funds. However, a direct comparison of ETFs and Mutual Index Funds was so far not performed on European benchmark funds exclusively. In order to tie in and contribute to former discussions we expand the research to European indices and hence to their particular characteristics regarding liquidity, volatility and composition. As a sensible subject of passive strategy investing, we investigate expense ratios and their effect on index tracking accuracy.

Restatement of the Research Question

Do Exchange Traded Funds replicate the Performance of European Indices better than Mutual Index Funds?

Sub-questions:

1. *Is tracking quality correlated with the states of the European financial markets?*
2. *Is there a difference in fund costs?*

Hypothesis 1

H_0 : The average return difference between Mutual Index Funds and their benchmark index is equal to zero

H_A : The average return difference between Mutual Index Funds and their benchmark index is not equal to zero

Hypothesis 2

H_0 : The average return difference between ETFs and their benchmark index is equal to zero

H_A : The average return difference between ETFs and their benchmark index is not equal to zero

Previous literature suggests that in general index funds in the form of passively managed open-end funds are not able to track their benchmarks without underperformance (cf. Blitz et al., 2010). However, findings about the magnitude of underperformance when comparing ETFs to Mutual Index Funds seem to differ. While Rompotis (2005), finds no significant difference, Elton et al. (2002) suggested that on average the SPDR showed lower returns than comparable index funds. The purpose of *hypothesis 1* and *2* is to answer this question for more recent fund data in general and for Index Tracker Funds on European indices in particular.

Hypothesis 3

H_0 : The mean Tracking Error difference between ETFs and Mutual Index Funds is equal to zero

H_A : The mean Tracking Error difference between ETFs and Mutual Index Funds is not equal to zero

Previous research seems to agree on a non-zero tracking error for both fund types with a trend of ETFs showing lower tracking errors (cf. Rompotis, 2005; Agapova, 2011; Elton et al., 2002). While many of these articles are rather old and might be outdated, none of them focus on European Indices only. *Hypothesis 3* aims to update findings and to fit them for European market tracker.

Hypothesis 4

H_0 : There is no correlation between ETF Tracking Error and European market returns

H_A : There is correlation between ETF Tracking Error and European market returns

Hypothesis 5

H_0 : There is no correlation between MIF Tracking Error and European market returns

H_A : There is correlation between MIF Tracking Error and European market returns

Throughout the literature review, we discussed several studies that investigated the relationship between ETFs and market volatility as reflected by the respective benchmarks (cf. inter alia Rompotis, 2011; Blitz and Huji, 2012; Aber et al., 2009). The findings were consistent inasmuch as Tracking Error seem to be positive correlated to index volatility. Ivanov (2012) further shows that U.S. REIT ETFs Tracking Error increased during the subprime mortgage crisis. However, our review was unsuccessful when searching for the respective literature for Mutual Index Funds. By formulating *hypothesis 4* and *5* we first want to test the relationship for each fund type separately and based on the results search possible any differences between them. Doing so we use different sub-periods of our timeframe as discussed in *chapter 4.1.6. Sub-Periods*, where we not only consider the U.S. subprime mortgage crisis, but also the ongoing European sovereign debt crisis.

Hypothesis 6

H_0 : The difference of mean Total Expense Ratio between ETFs and Mutual Index Funds is equal to zero

H_A : The difference of mean Total Expense Ratio between ETFs and Mutual Index Funds is not equal to zero

Due to passive portfolio management, expense ratios of index tracker funds are found to be rather low compared to active portfolios. Nevertheless, fund costs remain and are passed on to investors. Agapova (2011) found that ETFs tend to have lower expense ratios than Mutual Index Funds. This is in accordance with Blitz et al. who state a median expense ratio of 59 basis points from their sample of ETFs and Mutual Index Funds with ETFs showing on average lower ratios (2010). *Hypothesis 6* answers the question if there is a similar pattern for our fund selection.

Hypothesis 7

H_0 : There is no correlation between Total Expense Ratio and Mutual Index Fund Tracking Error

H_A : There is correlation between Total Expense Ratio and Mutual Index Fund Tracking Error

Hypothesis 8

H_0 : There is no correlation between Total Expense Ratio and ETF Tracking Error

H_A : There is correlation between Total Expense Ratio and ETF Tracking Error

Meinhardt et al. (2012) found expense ratios to be a determining factor of ETF Tracking Error. The aim of *Hypothesis 7-8* is to reveal a possible impact of costs on the Tracking Error of ETFs and Mutual Index Funds, i.e. if TER compromises their tracking quality.

4. Practical Methodology

In chapter 4 we motivate the choice for a sampling method and reproduce our data collection. We further explain how we split our time frame (2006-2013) into smaller sub-periods for more detailed, timely investigation. After a statistical restatement of our hypotheses, we develop the basis for our empirical analysis by introducing all relevant statistical methods and tests we made use of and conclude with a discussion on how we assure measurement quality.

4.1. Data Collection

4.1.1. Sampling Method

According to Adams et al. “sampling is the process or technique of selecting a suitable sample for the purpose of determining parameters or characteristics of the whole population” (2007, p. 87). The main reason why researchers have to use sampling techniques to collect their data is that in most cases the collection and processing of the whole population, i.e. a census, is an impossible task which usually is due to budget or time constraints. Researchers therefore need to make use of appropriate sampling methods in order to allow for generalizability from the sample to the population as a whole. (cf. Saunders, 2009, pp. 211–212)

Sampling Methods are generally divided into probability sampling and non-probability sampling. Probability sampling is mostly associated with survey-based research, where the goal is to make an inference from a sample about a population. To select a sample, the sampling frame has to be identified which includes all cases given by the population and from which the sample is chosen (Saunders, 2009, p. 214). Non-probability sampling methods on the other hand provide options where the sampling frame is unknown and thus is the probability to select an element from the sample. Henry further suggests that probability sampling is not advisable for very small populations (less than 50), as the impact of single extremes or outliers is much more pronounced, and therefore the whole population should be tested (1990, p. 14).

During our data allocation we faced both facts which trigger the choice for non-probability sampling. Firstly, we have no exact determination of our population due to the lack of previous studies focusing exclusively on European index tracker. We therefore assessed our population by approximation, using different fund compendiums provided mainly by

Bloomberg and Morningstar. However, compiling a complete list of all existing funds that fulfill the criteria of tracking European indices while using a passive strategy is a difficult task and an objective for own survey (this applies especially to Mutual Index Funds as we see in the description of data selection below). Secondly, even though the list of eligible Mutual Index Funds is extensive, our population is mainly limited due to the relatively small number of Exchange Traded Funds. As further discussed below, extensive search returned only **21** ETFs that fulfilled our population criteria and exist over a sufficient time frame.

We therefore decided to choose a non-probability sampling method of which we considered two; convenience sampling and purposive sampling:

Convenience Sampling – this method of non-probability sampling is unrestricted and therefore not bound on any selection criteria. The researcher can basically freely choose which data is included in the sample. Convenience sampling comes with low costs and effort and are useful where there is little variance in the population. The convenience however comes with the drawback of very low reliability of the sample for being representative for the population (Adams et al., 2007, p. 90; Saunders, 2009, p. 241).

Purposive Sampling – also called judgmental sampling, this is another method of non-probability sampling which is frequently used when working with small samples. Purposive sampling allows the researcher to base the decision of what to include in the sample on his own judgment about which cases will best answer the research question. One way to use this sampling technique is *homogenous* sampling where the focus lies on one particular sub-group in which all sample members are similar. Homogenous sampling is therefore useful to study a sub-group in depth (Saunders, 2009, p. 240)

Given the above choices we chose a homogenous purpose sampling as our method for the following reasons; firstly, we define our eligible data using very specific criteria which gives our sample the characteristic of a sub-group of index funds in general. Since the purpose of this study lies not in finding results that are generalizable to index funds in general, but rather to index funds possessing the described characteristics, we identify purposive sampling in combination with our chosen criteria as best fitting given our objective and data availability. Secondly, in contrast to convenience sampling, purposive sampling gives us the opportunity to increase the likelihood of the sample representativeness by applying the chosen criteria.

4.1.2. Selection Criteria

We constrained our sample data by the following requirements;

1. qualified indices must be exclusively comprehend European stocks and
2. regional or country oriented
3. ETFs and Index Funds must be passive managed open-end funds,
4. incepted not later than by the end of 2006 and listed in Europe.

The first constrain follows our research question, which refers to European Indices. The second constrain is used for control purposes as we want to avoid biased data due to the unintentional emphasize on a specific sector and its characteristics. The third and fourth constrain refer to the chosen funds and follow our delimitations, i.e. we exclude active fund strategies and use a fixed time frame for both fund data.

We obtained a list of general eligible indices and Index Trackers via Bloomberg, Morningstar and other financial services and cross-checked for the respective data availability in the Datastream Database. As we conduct a longitudinal study, the most restrictive criteria was the

age of ETFs, as many of them were launched after 2007. Obtaining Factsheets for each fund (necessary to obtain expense ratios and information about management style) on the other hand complicated Mutual Index Fund selection, as their prospectuses are not as freely available to non-investors than the ones of ETFs.

4.1.3. Data Selection

As a consequence of our research purpose, the population to pick our sample is made of all Index Mutual Funds and ETFs that track European indices. As said above, this number is mainly compromised by the amount of eligible ETFs; by the end of 2012 BlackRock counted 511 ETFs on European equity, out of which 196 were exposed to Euro country indices and 55 were exposed to the European region. The rest is buildup of sector or specialized Index ETFs which we not include in the sample. It is to note that compared to 511 ETFs by the end of 2012, only 273 existed by the end of 2006 which strongly decreases data availability for our sample (BlackRock, 2012, p. 22). Furthermore, some tests require an even sampling of ETFs and MIFs. Here we can only consider ETFs with a direct Mutual Index Funds match for the same benchmark. As Svetina and Wahal note in their study from 2008, there are only 17% of ETFs in direct competition with MIFs (2008, p. 17)

It is harder to draw an accurate picture about the mutual index fund landscape, as the industry is very broad positioned and we did not find an executive summary. However, to give an idea we collected all index funds listed on Bloomberg (open-end, closed-end and Fund of Funds) and extracted the number of open-end funds listed in Europe. Out of a total of 2724 index funds, 2532 were open-ended of which 1097 are listed in Europe. These numbers include all Mutual Index Funds listed in Europe but not necessarily tracking European Indices. It was unfortunately not possible to reduce this number to the population that represents all criteria as stated in *Data Criteria* and as implied by our research question and purpose. *Figure 11* gives an impression of the Mutual Index Fund landscape around the world and clearly shows Europe as the dominant market making up for 43%.

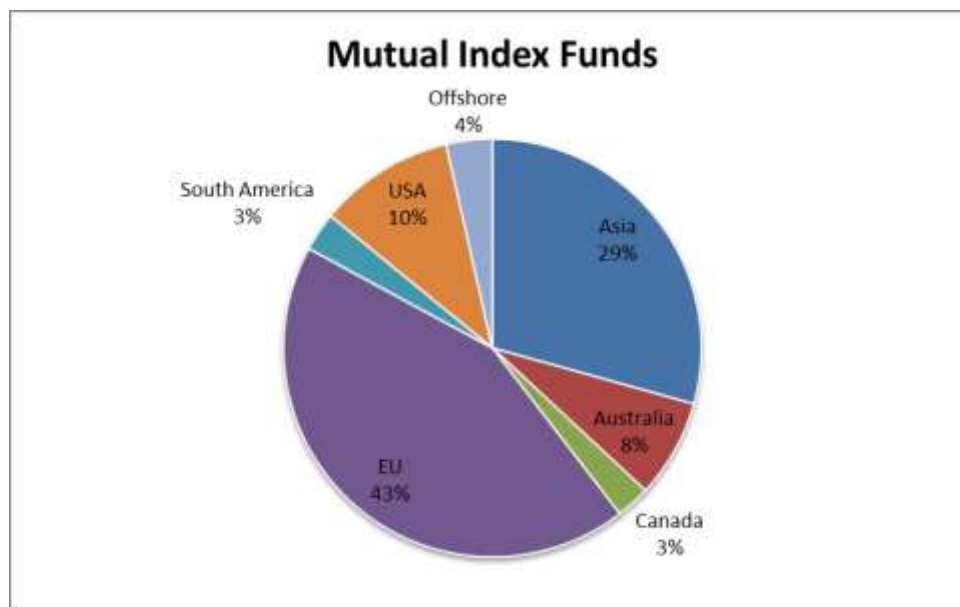


Figure 11: Mutual Index Fund Landscape; Source: Own design. Data: Bloomberg

Applying the above criteria, we are left with **22** Mutual Index Funds and **21** ETFs tracking **9** different European indices. For each Index, there is at least one Mutual Index Fund and one ETF tracking its performance. We chose Funds with common benchmarks (and therefore

common risk exposures) in order to increase the comparability of tracking error and expense ratios. The sample, when aggregated by the tracked indices, is an uneven panel of ratio variables, as there are on average more Mutual Funds than ETFs per Index.

While the Index Fund sample consists of numerous different emitters, the ETF sample shows a repetition especially of iShares, and Lyxor. This is a consequence of the market share allocation in the European ETF industry, as iShares and Lyxor with 35,8% and 18,4% respectively (as of 2011) were and still are leading ETF providers in Europe (BlackRock, 2010, p. 47).

ETF	Index Mutual Fund	Index	Country
LYXOR ETF	ING DRCT.CAC 40 (C) LYXOR INTERNATIONAL AM	CAC40	France
AMUNDI ETF	NATIXIS CAC 40 NATIXIS ASSET MANAGEMENT	CAC40	France
	MAM FRANCE INDICE(C) MEESCHAERT FCP	CAC40	France
	STRAT CAC(D) LEGAL & GENERAL AM	CAC40	France
	INDICE VALOR (C) GESTION VALOR	CAC40	France
ISHARES TECDAX	LUX EURO STOCK TECDAX	TECDAX (XETRA)	Germany
ISHARES DAX	OPPENHEIM KPL.DAX WERTE	DAX 30	Germany
	DT.POSTBANK ASTMGMT.DYM. DAX R T	DAX 30	Germany
LYXOR DAX INAV	PIONEER INVESTMENTS AKTIEN DTLA EUR ND	DAX 30	Germany
ISHARES DJ EURO STOXX 50	INVERSAFEI BOLSA EURO	EURO STOXX 50	EU
UBS ETF DJ EURO STOXX 50	VITALGESTION EURO BOLSA INDICE	EURO STOXX 50	EU
Lyxor Dow Jones Eurostoxx 50	GESBANKINTER INDICE EUROPEO 50	EURO STOXX 50	EU
SPDR INDEX SHARES FUNDS	DBV WINTERTH.FD.MAN.CO. LX.EURO STOXX 50 T	EURO STOXX 50	EU
Euro Stoxx 50® UCITS ETF	MS ING DIRECT NARANJA EURO STOXX 50	EURO STOXX 50	EU
	MORGAN STANLEY LBRTY. EUROPEAN STOCK MARKET	EURO STOXX 50	EU
	UNION INVESTMENT LX. UNIEUROSTOXX 50 A	EURO STOXX 50	EU
	ETOILE EURO OPPORTUNITES ETOILE GESTION	EURO STOXX 50	EU
	KBC INDEX FD. EUROLAND C	EURO STOXX 50	EU
LYXOR MSCI EUROPE	VANGD.EUR.STK.IDX.FD. ADMIRAL SHS	MSCI EUROPE	EU
SPDRMSCI EUROPE ETF	AMUNDI FRN.INDEX EUROPE CAP	MSCI EUROPE	EU
	SWISSCANTO CH MSCI EUROPE INDEX FUND A	MSCI EUROPE	EU
BBVA ACCION IBEX 35 ETF	MORGAN STANLEY LIBERTY SPANISH STK.MKT.IDX	IBEX 35 (Spain)	Spain
UBS-ETF FTSE 100	HSBC FTSE 100 IDX.RET.INC.	FTSE 100	UK
ISHARES FTSE 100 DE	HALIFAX UK FTSE 100	FTSE 100	UK
ISHARES FTSE 100		FTSE 100	UK
UBS-ETF FTSE 100 (SWX)		FTSE 100	UK
ISHARES SMI (DE)	CREDIT SUISSE CSA SWISS INDEX	SMI - SWISS INDEX	Switzerland
UBS FUND		SMI - SWISS INDEX	Switzerland
Credit Suisse ETF (CH) ON SMI		SMI - SWISS INDEX	Switzerland
SPDR AEX ETF	BNP PARIBAS AEX INDEX FUND	AEX	the Netherlands
ISHARES AEX		AEX	the Netherlands

Table 2: ETFs, Mutual Funds and Indices; Source: Own design

Table 2 illustrates a list of all ETFs and Index Mutual Funds which are included in our sample and the respective benchmark index. It shows that to every index we use we matched as least one ETF and one Mutual Fund respectively. For most indices the amounts are however uneven due to data constraints. Hence, the sample includes on average more Index Mutual Funds than ETFs. While 3 indices are cross-country diversified (MSCI Europe, EURO STOXX50, MSCI Developed Europe) , our sample includes country indices from France (CAC40), Germany (DAX), Netherlands (AEX), Spain (Ibex35), England (FTSE 100) and Switzerland (SMI).

Data Type

Our study deals with the development of prices of index tracker funds and their benchmarks over a fixed period of time. We therefore obtain price data from different points in time during this period and order them according to their observation time. The observed prices serve as basis for our calculation and can, due to their timeline characteristics, be referred to as time series data. It is however to point out, that we are not basing our analysis on a single

time series, but make use of several time series for Mutual Index Funds on the one hand, and several series for ETFs on the other. This gives us two separate panel sets of variables we aim to compare (Koop, 2006, pp. 9–11). To draw a maximal accurate picture of the prices over time, we use the highest frequency data which exists for both, ETFs and Mutual Index Funds, i.e. daily prices. Even though the ETFs are stated intraday as well, such data is not only difficult to obtain over a longer period, but also not available for Mutual Index Funds.

Expense Ratios

Hypotheses 6-8 relate to the Funds' Total Expense Ratios (TER), therefore we collected TERs for every Fund by extracting the most recent values from the factsheets of the fund providers. In rare cases when this information was not provided we obtained the latest ratio stated on Morningstar.

4.1.4. MSCI Europe

We decided to use MSCI Europe index as a representative index for the Europe market state. The MSCI Europe Index captures large and mid-cap representations across 16 Developed Markets countries in Europe⁴. With 436 constituents, the index covers approximately 85% of the free float-adjusted market capitalization across the European Developed Markets equity universe. The index has a 9,41% 10 year and 19,89% 10 year annualized return and standard deviation, respectively. It used the MSCI Global Investable Market Indices (GIMI) Methodology in order “to provide exhaustive coverage of the relevant investment opportunity set with a strong emphasis on index liquidity, investability and replicability” (MSCI, 2013, p. 2). To adopt changes in the underlying equity market the index is reviewed quarterly in February, Mai, August and November. (MSCI, 2013, p. 1 - 2).

4.1.5. Time Horizon

The time horizon of this study is mainly determined by the inception date of the used Exchange Traded Funds. As a rather young investment instrument ETFs had a growth phase in the beginning of the 21th century, but are still developing. In order to achieve a sufficient number of ETFs we set the start date for the observations to the end of 2006 and end the investigation at the end of 2012. We see this timeframe however as sufficient, as it not only captures the recent development and to the date most competitive years between Mutual Index Funds and ETFs, but also gives us the chance to look at different states of the economy as those 5 years cover the subprime mortgage crisis and the ongoing European sovereign debt crisis which leaves room for discussion about tracking performance of the two fund types during different states of the market.

The following graph shows the development of the MSCI Europe over the investigated periods and gives and Impression about the different states of the European economy. It also allows us to define a set of sub periods that might be worth to examine separated.

⁴ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK

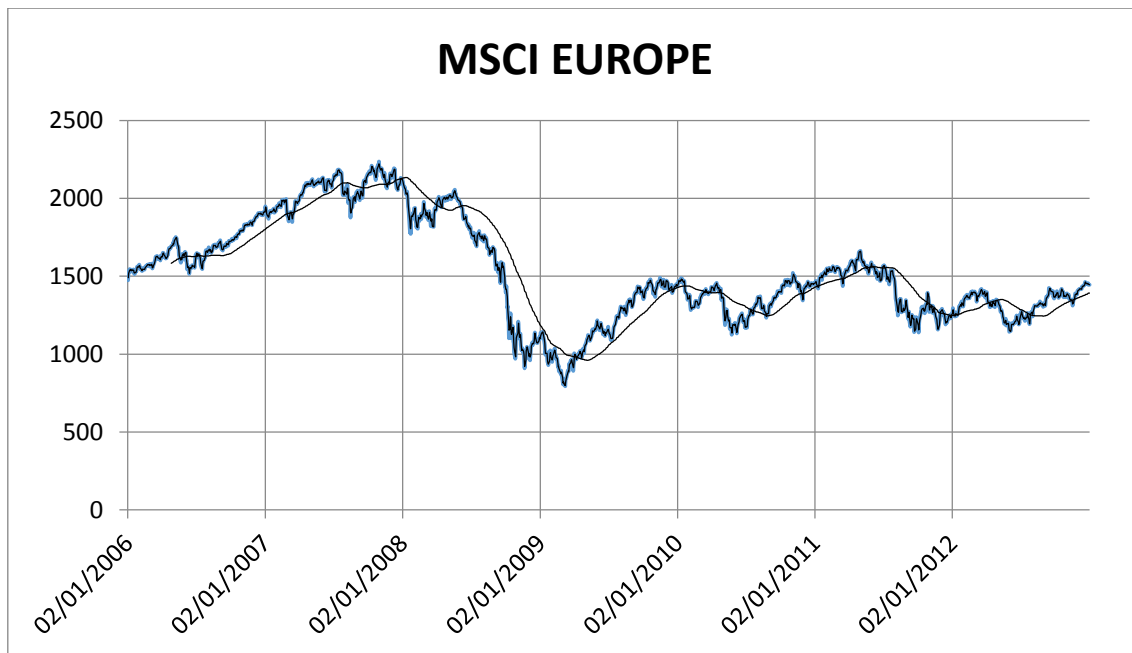


Figure 12: Development of the MSCI Europe Index 2006-2013 Source: Own design.

What *Figure 12* tells us about the European economy in the past 6 years starts with a strong breakdown between the end of 2007 and the beginning of 2008, which can be explained as triggered by the subprime mortgage crisis. After hitting a low point in the beginning of 2009, a recovery period starts but doesn't last very long, as the European debt crisis thwarts down the upturn in Europe. If we take the MSCI Europe as a representative Index for the European Economy, we see that the debt crisis doesn't really resulted in a recession, but more in a stagnation which is, like the crisis itself, still ongoing. The fact that the EU doesn't experience a born-and-bred recession, might be due to the fact, that even though the European crisis states face the latter, other states remain stable and absorb the downfall. In addition, several actions undertaken by the European Central Bank aim for stabilization of the EU.

4.1.6. Sub-Periods

Given our window from 2007 – 2013 and the trend in *Figure 12* we can identify the following sub-periods:

Period 1: 2006- Oct. 2007 Ascending trend

Period 2: Nov. 2007-Feb. 2009 Strong recession (subprime mortgage crisis)

Period 3: Mar. 2009-2010 Ascending trend (recovering phase)

Period 4: Jan. 2010-2013 Stagnation (European sovereign debt crisis)

To decide for the borderlines of the sub-periods, we looked at the bottoms and peaks (min and max) of the index and related them to economic events to identify the relevant breaking points. We use this sub-periods as a benchmarks to identify any possible relationship between tracking quality and different market states, i.e. if index trackers benefit from either bull or bear markets.

4.2. Data Treatment and adjustment

Throughout the Analysis part of this thesis we occasionally have to adjust the used data in order to fit them to respective tests.

Time Transformation

In order to conduct regression analysis to investigate the relationship between Tracking Error and index return, we need to annualize Tracking Errors. As one of our chosen measures for TE is the Standard Deviation of return differences, due to the restrictions of Probability Theory on mathematical adjustments of Standard Deviation, we have to transform it to variance, which is done by exponentiation the standard deviation. To transform the standard deviation σ from daily to yearly, we use the formula:

$$\sigma_{annual} = \sigma_{daily} * \sqrt{n}$$

Equation 9: Transformation of standard deviation

Where n is the number of observations throughout the respective year. The corresponding transformation of daily index returns is done by

$$R_{annual} = (1 + R_d)^n - 1$$

Equation 10: Transformation of Returns

Avoiding Autocorrelation

Since one of our chosen methods to calculate tracking error is based directly on returns, there is a potential threat of autocorrelation within the time series of return. Taking this into account apart from using log returns, we undertake further necessary actions to avoid serial correlation which we discuss subsequent to the introduction of the respective Tracking Error estimate.

Moving Average

While investigating outliers during Tracking Error analysis we make use of the Moving Average (MA) of the time series. MA is calculated in order to smoothen out a time series by taking the averaging the original data over a specified period n . In our case we calculate moving averages of funds closing prices to run regression analysis on them to and compare the results to those of the original data. This helps us to identify whether there are certain outliers within a series that influence our regression when ran with the original series. We transform the original series $\{r_t\}_{t=1}^T$ to a new series $\{r_t^{MA}\}_{t=1}^{T-n+1}$ by taking the arithmetic mean of a sub-series of n observations:

$$r_t^{MA} = \frac{1}{n} \sum_{i=t}^{t+n-1} r_i$$

Equation 11: Moving Average

Where r_t^{MA} is the new series from Moving Average, over n observations and T as the total amount of observations from the original series (as you can see in *chapter 5.3.1* we use $t=100$ out of $n=1825$).

4.3. Statistics

4.3.1. Statistical Expression of Hypotheses

We reformulate our hypotheses from *chapter 3*, using the same statistical terms as we are using throughout our statistical tests and presentation of results. In the following we use μ_{MF} , μ_{ETF} and μ_{Index} for the mean returns of Mutual Funds, ETFs and Indices respectively, TE_{MF} and TE_{ETF} for the respective Tracking Errors and TER for the respective Total Expense Ratios.

For *hypotheses 7 and 8* we calculate Betas (β_{MF}^{TER} and β_{ETF}^{TER}) as correlation coefficients between Tracking Error and Total Expense Ratio.

Hypothesis 1

- The average return difference between Mutual Index Funds and their benchmark index is equal to zero.

$$H_0: \mu_{MF} - \mu_{Index} = 0$$

$$H_A: \mu_{MF} - \mu_{Index} \neq 0$$

Hypothesis 2

- The average return difference between Exchange Traded Funds and their benchmark index is equal to zero.

$$H_0: \mu_{ETF} - \mu_{Index} = 0$$

$$H_A: \mu_{ETF} - \mu_{Index} \neq 0$$

Hypothesis 3

- The mean Tracking Error difference between Exchange Traded Funds and Mutual Index Funds is equal to zero.

$$H_0: TE_{MF} - TE_{ETF} = 0$$

$$H_A: TE_{MF} - TE_{ETF} \neq 0$$

Hypothesis 4

- For ETFs: There is no correlation between mean Tracking Error and the European economy.

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROPE}^{TE} \neq 0$$

Hypothesis 5

- For MIFs: There is no correlation between mean Tracking Error and the European economy.

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROPE}^{TE} \neq 0$$

Hypothesis 6

- The difference of mean Total Expense Ratio between Exchange Traded Funds and Mutual Index Funds is equal to zero.

$$H_0: TER_{MF} - TER_{ETF} = 0$$

$$H_A: TER_{MF} - TER_{ETF} \neq 0$$

Hypothesis 7

- There is no correlation between Total Expense Ratio and Mutual Index Fund Tracking Error.

$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

Hypothesis 8

- There is no correlation between Total Expense Ratio and Exchange Traded Fund Tracking Error.

$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

4.3.2. Calculating Returns

We want to calculate Tracking Errors as described in *chapter 3*. Therefore we first have to transform our daily observed prices to returns, which can simply be done by

$$r_t = \left[\frac{P_{t+1}}{P_t} \right] - 1$$

Equation 12: Calculation of Returns

which is the geometric return of a time series.

It is however convenient for financial time series analysis, to make use of the natural logarithms of the return series (log return continuously compound return), which is calculated as

$$r_t = \ln \left[\frac{P_{t+1}}{P_t} \right]$$

Equation 13: Calculation of Logarithmic Returns

Investigating a time series, i.e. a series of data from different point in time, this is favorable due to the symmetric and additive characteristic of the logarithm which recognizes dependency between the returns, while the geometric return implies an independent relationship (Adelmeyer & Warmuth, 2005, pp. 55–56).

The sum of log returns over the whole time horizon gives us the total return for ETF, Mutual Index Fund and benchmark index and serves as the basis for our analysis.

4.3.3. Volatility

The volatility of an Investment is used to express its risk exposure and is calculated as the standard deviation of the daily returns (Rompotis, 2005, p. 10). The volatility of the different time series for every Fund and Index is therefore calculated as

$$S^2 = \sqrt{\frac{1}{T-1} \sum_{t=1}^T (r_t - \bar{r}_t)^2}$$

Equation 14: Volatility of a return series

where T is the number of observations, r_t the observed value at time t and \bar{r} the mean of the observations of the respective ETFs, Mutual Index Fund or Index.

4.3.4. Correlation Analysis

To be able to answer *hypothesis 4-5* and *7-8* we need to find possible correlations between fund expenses and Tracking Error. The correlation coefficient measures the direction and strength of the linear dependence between two variables, i.e. in our case between Total Expense Ratio and Tracking Error. The correlation function is defined as

$$r_{x,y} = \frac{Cov(X,Y)}{\sqrt{Var(X)Var(Y)}}$$

Equation 15: Correlation Function

Where X and Y are the investigated variables. For our sample where $\{(x_i, y_i)\}_{i=1}^N$ is available the correlation can be written as

$$r_{x,y} = \frac{\sum_{i=1}^N (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^N (x_i - \bar{x})^2 \sum_{i=1}^N (y_i - \bar{y})^2}}$$

Equation 16: Extended Correlation Function

with \bar{x} and \bar{y} as the respective sample mean ($\sum_{i=1}^N x_i$ and $\sum_{i=1}^N y_i$). (Tsay, 2005, p. 26)

The correlation between two variables always takes a value between -1 and 1, where correlation increases with the strength of deviation from 0, i.e. 1 indicates perfect positive association, -1 perfect negative association and 0 an uncorrelated relationship.

T-Ratio

To test the null hypothesis for the Pearson's' correlation coefficient as stated above, i.e. to test if our sample means are linearly independent, we calculate the t-ratio as

$$t = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

Equation 17: T-Ratio

where r is the correlation coefficient, N is the sample size and $N - 2$ are the degrees of freedom (df). (Howell, 2009, p. 272)

4.3.5. Regression Analysis

We make use of a simple regression analysis, in order to further explain the relationship between fund return and index return. Therefore we regress the return r_{fi} of every fund against the return r_{bi} of its benchmark index. We use the same time-series regression model as Rompotis. Like him we want to gain information about the funds' portfolio sensitivity towards index movements and therefore about their replication accuracy (2005, p. 12).

$$r_{fi} = \alpha_i + \beta_i r_{bi} + \varepsilon_i$$

Equation 18: Simple Regression Function

Here, α_i is the independent constant and represents the return a fund portfolio achieves independently from the index return. Since we exclusively investigate passive managed funds, this value is expected, and if analogous management is used, should be insignificantly small. Therefore, most of the return should be explained by the fund portfolios β_i , which if the portfolio is successfully managed should be close to 1 and therefore highly correlated with the index returns. ε_i represents the residuals of the respective fund, which are not explained by the model.

Assumptions

There are three assumptions that have to be tested first in order to verify the suitability of regression analysis:

1. $E(\varepsilon_i) = 0$ ε has a mean of zero for all i
2. $E(\varepsilon_i)^2 = \sigma_\varepsilon^2$ it has the same variance for all i
3. $E(\varepsilon_i \varepsilon_j)^2 = 0, i \neq j$ there is no correlation across observations (Autocorrelation)
(Cottrell, 2003, p. 1)

We test those assumptions by testing for the respective criteria. We test that residuals are normally distributed by analyzing the Q-Q plot and running a Kolmogorov-Smirnov test. Further, autocorrelation is tested by plotting the standardized residuals against predicted values and calculating Durbin-Watson statistics. The results of the tests are presented and discussed in *chapter 5*.

T-statistic

Simultaneously to the correlation coefficient, after estimating the size of β we apply t-statistics to test the level of significance of the hypothesis $H_0: \beta = 0$ against $H_A: \beta \neq 0$ to gain affirmation that the regression is capable of explaining the relationship between index and fund portfolio within a certain confidence interval, i.e. to see if the explanatory variable has an actual effect on the depended variable. The t-statistic is calculated by

$$t' = \frac{\beta}{S_b}$$

Equation 19: T-Statistics

With β as our beta estimate and S_b as the standard deviation of beta. If beta estimates are large relative to its standard deviations and therefore the *t-value* is large (relative to its critical value from the *Student-t distribution*), we can reject H_0 and accept H_A . Executing a *t-test* in Excel or

SPSS returns a *P-Value* which determines the relative size of the t-statistic, i.e. for 95% confidence interval, if $P \leq 5\%$ we can reject H_0 . (Koop, 2006, pp. 79–81)

4.3.6. Tracking Error Estimates

To compare tracking accuracy between ETFs and Mutual Index Funds, we make use of different methods to calculate Tracking Errors. Beside the widely used definition of TE as the standard deviation of return differences, we use two alternative estimates, also utilized by Frino and Gallagher when investigating the tracking of S&P 500 Index Funds. (2001, pp. 8–9)

TE_1

Our first Tracking error is calculated using the standard error of the regression from *Equation 18* as introduced above. The standard error is calculated by

$$TE_1 = SSR = \sqrt{\frac{\sum(Y_i - \hat{Y}_i)^2}{n-2}} = \sqrt{\frac{\sum \varepsilon_i^2}{n-2}}$$

Equation 20: Tracking Error 1

i.e. the sum of the squared residuals divided by $n - 2$ degrees of freedom ($n =$ number of observations).

TE_1 was suggested by Roll (1992) as an idea to investigate managers' performance (produce positive returns over benchmark and keep TE volatility low) relatively to the index and determine exact composition of the particular portfolio, which could dominate the benchmark and possess low TE by putting constraints on a beta.

TE_2

The standard methodology to calculate TE as introduced in *chapter 3*, is the standard deviation of return differences. The standard deviation S is defined as the square root of the variance S^2 and calculated as

$$S^2 = \frac{1}{T-1} \sum_{t=1}^T (e_t - \bar{e}_t)^2$$

Equation 21: Variance of Return Differences

Here, e_t is the return difference $r_t^{Fund} - r_t^{Index}$ and the mean \bar{e} is defined as

$$\bar{e} = \frac{1}{T} \sum_{t=1}^T e_t$$

Equation 22: Mean of Return Differences

i.e. the sum of the observation values divided by their count. Then, our second measure for Tracking Error can be simply expressed as

$$TE_2 = \sqrt{S^2}$$

Equation 23: Tracking Error 2

Based on popularity of the TE_2 and its numerous usage in most academic studies we pay most attention to it in our analysis. (cf. inter alia Roll, 1992; Rudolf et al., 1999; Frino & Gallagher, 2001, Aber et al., 2009 and Hwang & Satchel, 2001). TE_2 methodology is also the

common approach for the funds and for rating agencies like Morningstar.com (Morningstar, 2013b).

Pope and Yadav (1994) note that calculating annual TE_2 based on daily returns could bias it due to serial autocorrelation of returns. However, we adjusted our returns in cases of serial correlation by using lag returns. We checked for autocorrelation using Durbin-Watson statistics for the obtained daily returns. In addition, we drew PACF (partial autocorrelation function charts) and determined the correct lag needed for the model in case of autocorrelation. Next, we adjusted our returns using the correct lag and performed regression using dynamic model $Y_t = \alpha + \sum_{i=1} \beta_i X_{t-i} + \varepsilon_t$ with the stated lag.

TE_3

The third estimate TE estimate is the average absolute return difference, i.e. we calculate the daily average of the absolute return difference, $e_t = r_t^{Fund} - r_t^{Index}$ as

$$TE_3 = \frac{\sum_{t=1}^T |e_t|}{T}$$

Equation 24: Tracking Error 3

TE_3 was developed by Rudolf et al. (1999) who estimated that TE_3 could give better risk descriptions to investors if performance fees of fund managers are linear.

4.3.7. Two-Sample t-test

To compare the means of two time series (i.e. to explore significant differences), we use a two-sample t-test. Since we are interested in any potential difference, our Hypothesis for this test is $H_0: \mu_x - \mu_y = 0$ and thus $H_A: \mu_x - \mu_y \neq 0$. As our series have unequal variances, we use the heteroscedastic t-test (or unequal variance t-test). The basis for this t-test is the estimated standard deviation of the sample difference in sample means. Since, the standard deviation of the population is unknown, it is estimated by the two samples' standard deviation:

$$\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}$$

Equation 25: Two-Sample Standard Deviation

We standardize the estimates by dividing it by the standard error, which gives us the **two-sample t-test**

$$t' = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Equation 26: Two-Sample T-test

where $\bar{x}_1 - \bar{x}_2$ is the difference between the observed estimates and n the respective number of the observations of series 1 and 2. (Moore, 1996, p. 469)

4.4. Regressions with categorical dependent variable

Categorizing variables

During analysis of MIF and ETF tracking performance, we decided to construct pairs, where an ETF and MIF are tracking the same index. For the list of pairs, please see *Appendix 1*. Afterwards, we calculated absolute return differences (ARD) between a benchmark index and a MIF for each period. The same procedure was repeated for an ETF as well. Next, in order to compare ARD of an ETF and a MIF in a matched pair (both ETF and MIF track the same index), we categorized our ARD by “1” if tracking performance of ETF is better during the respective period and “0” if tracking performance of MIF is better. We obtained categorical variable for the period of 2007 to the end of 2012 by using monthly observations (resulting in 15 pairs with 72 observations each).

We make use of logistic regression as an attempt to explain a *phenomenon*, when over a period of time ETFs could perform better tracking over MIF and vice versa. I.e. we chose explanatory variables to find out whether they have a positive or negative impact on our two fund types. In fact, as we will see throughout our analysis, there are some periods when return differences of ETFs are lower than MIFs’ and the other way around.

We decided to research this *phenomenon*, using *index returns* R_i and *volatility* σ_i as explanatory variables as those are universal tools, which give good essential knowledge about the index as well the current state of the market.

In order to evaluate influence on a categorical variable, which has only two values (MIF or ETF) three options exist: Linear Probability Model (LPM), probability model (probit) and logistic regression (logit).

4.4.1. Linear Probability Model (LPM)

LPM is a special case of binomial regression, where the dependent variable takes values which are either 0 or 1. The relationship of variables is simple, thus it allows the model to be fitted by OLS. The model is:

$$P(Y = 1|x) = x'\beta$$

Equation 27: LPM model

where P is the probability.

The method of fitting OLS, with categorical dependent variable has significant drawbacks. Estimated coefficients would give probabilities outside the unit interval and conditions for residuals won’t be accepted. For this reason LPM is of limited usage and another model, such as the logit or probit are commonly used. (Hahn & Sover, 2010)

4.4.2. Probit model

The aim of the model is to get the probability that an event with special characteristics will be categorized in a group with similar characteristics. Categorizing an event into a group usually requires the probability to be more than 0,5. Probit is used to model ordinal or binary outcome variables. In it, the inverse standard normal distribution of the probability is modelled as a linear combination of the predictors. It is similar to logistic regression and is estimated using the standard maximum likelihood procedure (regression). The model is:

$$P(Y = 1|x) = \Phi(x'\beta)$$

Equation 28: Probit model

Where P is probability and Φ is Cumulative Distribution Function (CDF) of a *Normal distribution*.

The probit model standardises all β coefficients to z values on a CDF of Normal distribution. Thus, interpretations of the results are limited to z scores. Other interpretation requires calculation of probabilities, which are limited to a specific observation case. Therefore, we decide to implement more common approach and use a logit model for convenience of interpreting results. (Hahn & Sover, 2010)

4.4.3. Logit model

It allows to model categorical variables in a way similar to OLS. Logistic regression has become the most used technique in the class of generalized linear models due to its simplicity in interpretation. In logistic regression, the function is \ln transformed: one uses the natural logarithm of the odds that some event will occur. In OLS, parameters are estimated using the method of least squares by minimizing the sum of squared deviations of predicted values from observed values. For logistic regression, least squares estimation is not capable of producing minimum variance unbiased estimators for the actual parameters. In its place, maximum likelihood estimation is used. (Czepiel, 2002, pp. 2-3)

The model is:

$$\ln\left(\frac{P(x)}{1-P(x)}\right) = \sum_{k=0}^k x_{ik}\beta_k ; i = 1,2, \dots, N$$

Equation 29: Logit model

, where $\left(\frac{P(x)}{1-P(x)}\right)$ are the odds.

In our case we decided to use two independent variables – *index returns and volatility*, both simultaneously and separately in order to get higher goodness of fit levels.

Logit model interpretations

The model is easy to interpret as it provides an Odds Ratio (OR) and a probability for a special event.

$$OR = \frac{odds_{x+1}}{odds_x} = \frac{e^{\beta_0 + \beta_1(x_1+1)}}{e^{\beta_0 + \beta_1 x_1}} = e^{\beta_1}$$

Equation 30: Odds Ratio (OR)

$$P(Y = 1|x) = E(Y) = \frac{e^{\beta_0 + \beta_1 x_1}}{1 + e^{\beta_0 + \beta_1 x_1}} = e^{\beta_1} ; 0 < E(Y) < 1$$

Equation 31: Probability for a specific event

Logit model: Odds Ratio

Odds are the ratio of the probabilities, that event x would occur ($P(x)$) and would not occur ($1 - P(x)$). The *odds ratio*, determined in logit regression is the ratio of the odds, for the event ($Y=1$) if x increases by one unit to the odds of event ($Y=1$) when x remains constant. It is found as e^{β_1} , where β_1 is the slope in the logistic regression equation. OR could be interpreted as if one event has a better chance over another event, if one would add additional unit to x , *ceteris paribus*. For example, in our case if slope β_1 is positive and OR for return is equal to 1,3, we will state that for every unit increase in returns (e.g. by 0,01%) the odds that ETFs would track better than MIF increase by 1,3 times, keeping other things constant. (Moore et al. 2011, pp. 17-8 – 17-12)

Logit model: Probability for a specific event

In addition to the odds ratio, we could give a probability for a specific event. For example, the probability that ETFs would track better than MIF if index returns would change from 11 to 12 percent, keeping other things constant. (Moore et al. 2011, pp. 17-8 – 17-11)

Logit model: goodness of fit characteristics

We implemented a specific goodness of fit procedures for the model to confirm that model fits the data correctly. We used:

- Percentage of correct prediction, which identifies how many results were correctly predicted by our model;
- Log likelihood estimation in order to compare models fit;
- Hosmer and Lemeshow Test, which access the data fit, how observed events match expected events. It is favourable to have high p-values for this test, which will show that the model fits the data correctly.
- Wald's ratio and its significance, which is similar to p-value in OLS.

We used pseudo R^2 , which is similar to OLS R^2 but computed under the restrictions of the logit model. Specifically, we paid attention to R^2 of Cox & Snell (not standardized may not reach 1 at maximum levels); and Nagelkerke (standardized version of Cox & Snell R^2 could be between 0 and 1). (SPSS, 2012)

Logit or probit

Long (1997, p. 83) notes that the choice between the logit and probit models is largely one of applicability, as the results are generally indistinguishable.

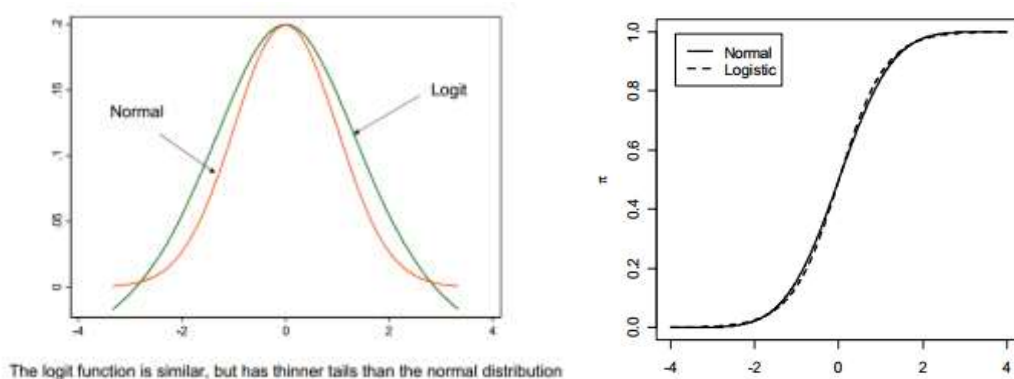


Figure 13: Logit and Probit regression differences. Source: Logit (2010)

From the *figure 13* above one can see that there is small difference between logit and probit models, as Normal distribution is quite similar to the logit distribution. The difference is that the last one has thinner tails. In addition, by observing a scatter plot with probabilities, there are almost no difference between two models.

4.5. Measurement Quality

To ensure the truth and generalizability of our measures we have to critically assess our measurement of variables and quality of data to ensure the overall accuracy of our study results. Throughout research method literature there are three frequently discussed criteria, reliability, validity and generalizability, which if tested respectively provide confidence about the studies consistency, strength of conclusion and degree of generalizability.

4.5.1. Reliability

Assessing reliability is necessary to ensure sufficient consistency of measurement, i.e. the degree to which we achieve the same result each time using the same procedure under the same conditions with the same subjects (Adams et al., 2007, p. 235). Adams et al. suggest two tests in order assess reliability, the test-retest method and the equivalent form method.

Test-retest Method

The test-retest method is concerned with the repeatability of measurement instruments. Given repetitive testing at different times one should receive the same results every time (Adams et al., 2007, p. 236).

We are using chosen statistical methods to test historically recorded data over a specified period. Given the standardized methods and a static data set, our measures can be repeated by anyone at any time yielding (if not alternated) the same results. Our measures are therefore produce predictable results and fulfill this reliability criterion given this method.

Equivalent form Method

For this method, two alternative instruments are used, which are as equivalent as possible. Achieving similar result (i.e. highly correlated results) with both instruments indicates a high reliability estimate (Adams et al., 2007, p. 236).

When calculating our core measure for tracking quality, we use different estimators to obtain a set of results which can be compared one another. The overall trend of the different measures shows similar patterns which increases our confidence in internal consistency.

4.5.2. Validity

Validity describes the strength of relationship between our actual measures and the purpose of the measures and thus the strength of our conclusions, inferences and proposition we derive from them. Validity therefore is a necessary addition to reliability as even if measured consistently, our finds are only useful if they represent what we actually want to measure. Here we can mainly be distinguish between internal and external validity. While internal threats affect the causality of the relationship between dependent and independent variable and external threats affect the generalizability to other settings and situations. (Adams et al., 2007, p. 237)

Internal Validity

Our results could be biased by random influences due to differences in characteristics of our selected sample. We address this problem by considering and treating alternative influences to

our results by concretizing our sample selection using a set of criteria as defined in 4.1.1. in order to avoid uncontrolled influences. We further use a longer timeframe covering different states of the market to avoid snapshot effects and be able to explore results against the background of different external influences. Different methods to test the strength of relationship between explanatory and independent variable as well as for the significance of results will further help us to validate our findings from a statistical perspective.

External Validity

To be able to generalize our findings, our study needs to be externally valid. Threats to external validity evolve mainly from undesired influences on respondents which are not accounted for during the assessment. Our data consists of prices which is determined by the market behavior over time incorporating all influencing variables on market characteristics which we don't bias our time series but rather reflect the true reality as close as possible. However, yet again our sample could be biased by uncontrolled patterns in the number respondents (respondents in our case are funds to which we have sufficient data excess). We therefore use the highest possible sample within our sample criteria and across different indices to achieve satisfactory external validity

4.5.3. Generalizability

In order to make our research useful for application by the target audience and for further researches, we need to make sure that we can generalize our results beyond our study to the population (Adams et al., 2007, p. 239; Saunders, 2009, p. 158). Since our goal is not to study the relationship between one pair of funds, but rather the European index fund industry as a whole, we need to make sure if and which of our findings can be generalized to the population.

We take a careful and conservative position towards our findings and the conclusions we draw from them. Therefore, we retest especially weak relationships by altering the variables, e.g. removing outliers. If outliers are identified to be the stimulus threshold to make a result statistically significant, we take them out of consideration as such results would strongly weaken the ability to generalize. If statistics or other indicators lead to doubtfulness of generalizability, we will point out the results in question correspondingly.

5. Results and Analysis

Throughout chapter 5 we will first present and describe our sample data using descriptive statistics. Calculating descriptive statistics provides us with the necessary data to answer the first two hypotheses. We then report the results of our analysis regarding Tracking Errors and Expense Ratios and based on the results answer the remaining hypotheses and discuss them respectively in relation with previous literature as reviewed in chapter 3. We conclude the chapter with a brief summary of our hypothesis outcomes.

5.1. Comprehensive Descriptive Statistics

Table 3 below gives a summary of average annualized returns and standard deviation of ETFs, Mutual Index Funds (MIF) and the respective benchmark indices. Due to the amount of used funds, we don't state the respective values for each fund but rather merge the values for

Name	Mean Return (Annual)			St. Dev. (Annual)			Observations (each fund)
	ETF	MIF	Index	ETF	MIF	Index	
<i>Type</i>							
AEX	-0,035	-0,034	-0,035	0,248	0,247	0,247	1825
CaC40	-0,026	-0,029	-0,001	0,257	0,266	0,259	1825
DAX 30	0,046	0,043	0,053	0,260	0,268	0,261	1680
EURO STOXX 50	-0,045	-0,023	-0,044	0,273	0,254	0,258	1825
FTSE 100	-0,037	0,009	-0,003	0,266	0,227	0,236	1762
IBEX 35	-0,087	-0,060	-0,089	0,289	0,275	0,289	1597
MSCI EUROPE	-0,012	-0,017	-0,019	0,239	0,262	0,292	1689
SMI - SWISS INDEX	-0,002	0,008	-0,015	0,196	0,199	0,201	1825
TECDAX (XETRA)	0,043	0,014	0,047	0,300	0,254	0,279	1825
Average	-0,017	-0,010	-0,012	0,259	0,250	0,258	

funds that track the same index.

The mean returns for all ETFs, Mutual Index Funds and indices are -1,71%, -1,0% and -1,2% respectively. We see that ETFs and MIFs mean return are very close to the index, with a remaining difference between ETF and index amounting to -71 bps and to +20 bps between MIF and index. The numbers indicate that, ETFs and MIFs deliver approximately the same returns as the benchmarks' return with MIF performing slightly better. Since the calculated differences in return are very small, we look at the t-statistics to see whether they have significant implications. In fact, the return differences between funds and benchmarks vary insignificant from zero as the t-statistics in *Appendix 2* show. The same applies to the difference between ETF and MIF returns as it can be seen in *Appendix 3*.

The descriptive statistics of the respective returns provide us with sufficient information to answer *hypothesis 1* and *2*.

We recall hypothesis 1 and 2:

Table 3: ETF, MIF and Index returns averaged 2006-2013

Hypothesis 1

- The average return difference between Mutual Index Funds and their benchmark index is equal to zero.

$$H_0: \mu_{MF} - \mu_{Index} = 0$$

$$H_A: \mu_{MF} - \mu_{Index} \neq 0$$

Hypothesis 2

- The average return difference between Exchange Traded Funds and their benchmark index is equal to zero.

$$H_0: \mu_{ETF} - \mu_{Index} = 0$$

$$H_A: \mu_{ETF} - \mu_{Index} \neq 0$$

The results of our return test as presented in *table 3*, show small differences in returns between funds and index, where MIF returns seem to be slightly higher and ETF returns lower than index returns. However, given the t-statistics, for our sample and timeframe we accept H_0 for both hypotheses. I.e. the mean daily return differences from 2006-2013 between ETF and benchmark and between Mutual Index Fund and benchmark did not significantly deviate from zero. This implies, that there is neither under- nor outperformance of ETF or MIF. We therefore reject the alternative hypotheses H_A for ETFs and MIFs and state that on average both fund models sufficiently approximate index returns, i.e. there is no significant over- or underperformance. This findings will also be verified by the results of preparative regression analysis in part 5.3.1.

These results meet expectations of passive index tracker funds and are in accordance with the findings of Rompotis (2005) who found neither significant return differences between ETF, index and MIF nor any excess returns relative to the index. Svetina and Wahal (2008) also found ETFs and Mutual Index funds to be statistically indistinguishable when compared gross of fees. At the same time the results back Agapovas' suggestion of ETFs and MIFs being substitutes to a certain degree (Agapova, 2011). However, different former literature suggests average underperformance of Index Funds. E.g. Blitz et al. (2010) found underperformance of an average 84 bps in passive index funds in general (ETF and MIF). Given the insignificance of return differences we don't confirm this trend for our sample of Europe trackers.

5.2. Analysis of return differences

To reveal any possible return differences due to seasonality we compared absolute return differences by constructing 15 pairs of dummy variables, with each pair within the same index. Further, we obtained an average for all pairs in one month. *Figure 14* below shows the performance measured by absolute return differences for the chosen European funds.

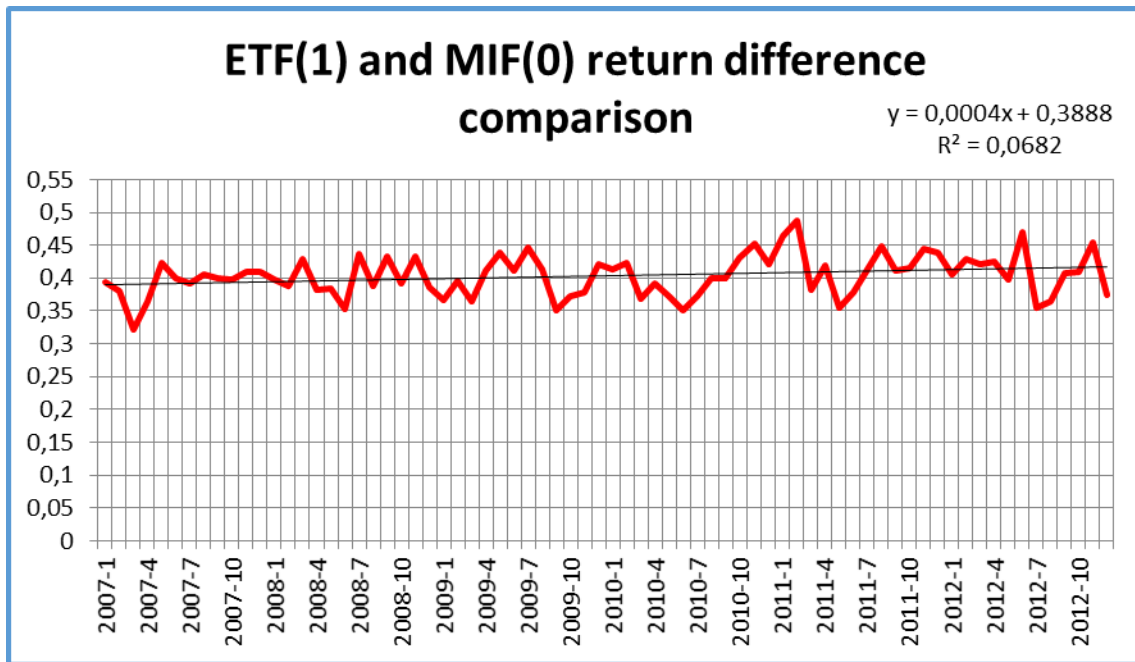


Figure 14: Return difference comparison among ETFs and MIFs, values closer to 1 indicate better performance of ETFs, closer to 0 – better performance of MIFs; Source: own design.

The descriptive statistics for the obtained data are as follows:

- Mean 0,40; median 0,40; geometric mean 0,40. All means are 0,40 showing that the data is normally distributed and centered at one point. The meaning of 0,40 is that MIFs performed better as this number is closer to zero. Although the mean is 0,40, we can't generalize this finding, because the chosen 15 pairs do not represent the whole number of funds used in analysis of TE throughout 5.2.2. and 5.2.3. Because in those chapters, we used 43 funds(21 ETFs and 22 MIFs) and in the above analysis only 30 funds (15 ETFs and 15 MIFs)
- Standard deviation is 0,031; max 0,49; min 0,32, skewness – 0. This shows that the data is approximately log-normally distributed (there are no negative observation) and is not varying significantly with time. The last notion is also clearly seen on the graph above.

In a nutshell, we tried to find any seasonality of MIF and ETF tracking performance, but haven't obtained any proof of this effect examining the selected 30 funds from 2007 till 2013. Frino and Gallagher (2001) tried to find seasonality effect of tracking performance for ETFs only and revealed that, tracking performance is closely connected with dividends. In our case the graph shows very slow tendency for a better performance of ETFs in the future. We can therefore complement the evidence from hypothesis 1 and 2 with the fact that return differences for both instruments remain constant in the short as well as in the long term.

5.2.1. Summary of Results: Logistic regression

After performing logistic regression, we found no evidence that index returns and/or volatility could influence the *phenomenon*, where in some periods ETF perform better replication over MIF or contrariwise. Our results were not significant or showed no dependency between used explanatory variables. Thus, we conclude that index volatility and/or returns have no impact on the prediction whether ETF replicate better than MIF or contrarily.

All results of logit regression can be observed in *Appendix 4*, out of 15 regressions only 4 had significant results for the odds ratios. They were for IBEX, CAC 40, STOXX 50 and FTSE 100 indices. These odds ratios (significant at 10%) signalled that there are no dependence between observed *phenomenon* and chosen variables (index returns and volatility).

In a nutshell, we tried to answer the question why sometimes MIF replicate better than ETF or vice versa by using tracked index returns and volatility. We haven't obtained any proof that those variables could influence studied phenomenon, by examining 30 funds from 2007 till 2012.

Frino and Gallagher (2001) tried to find seasonality effect of tracking performance for ETFs only and revealed that, tracking performance is closely connected with dividends. In our case the *figure 14* shows very slow tendency for a better performance of ETFs in the future. We can therefore complement the evidence from hypothesis 1 and 2 with the fact that return differences for both instruments remain constant in the short as well as in the long term.

5.3. Tracking Error Analysis

The overall impression of the descriptive statistics is that both fund types deliver approximately the same performance as their benchmark indices while showing similar (even though slightly higher than the benchmarks') risk characteristics. The very identical structure of returns and risk once again substantiate the question that underlies the field of our research, i.e. what are the decision criteria an investor should apply when choosing the fund company? Throughout the following sections we investigate some factors that we believe might be helpful to find an answer to this question.

TE is one of the key determinants of index funds' tracking performance and it is often used to assess the fund or predict funds' future tracking performance within a given level of confidence. Our goal is to determine which investment vehicle (ETF or MIF) in Europe has lower TE, and produces better tracking. In addition, we will analyze variations of TE and its usefulness. We start with the calculation and analysis of Tracking Errors (TEs) to create the basis for a comparison that provides us with the necessary evidence to answer *hypothesis 3*. We first give a description of TE distribution among the two investment vehicles and later investigate changes throughout time for the respective fund category. As discussed before we focus our analysis exclusively on the indices, which are widely used by European Investors. Our choice of indices are: AEX, CAC 40, DAX 30, Euro STOXX 50, FTSE 100, IBEX 35, MSCI Europe, SMI and tecDAX.

We will structure TE analysis as follows:

1. *Comparison of TE using regression*
2. *Long Term Comparison of TE for 2006 – 2013*
3. *Annual TE comparison*
4. *Summary of TE results*
5. *Correlation of TE with MSCI Europe*

5.3.1. Regression and Tracking Error 1

We performed a regression using a model described by Frino and Gallagher (2001) and tested by Rompotis (2005). The model is $r_{fi} = \alpha_i + \beta_i r_{bi} + \varepsilon_i$ and the expected outcome for index tracker is to get Betas close to one and Intercepts close to zeros. Betas of one will indicate that an investment vehicle is ideally tracking a given benchmark and zero intercepts will signal

that a fund is not receiving excess returns above index returns. These are “ideal world” assumptions, which are unlikely to be obtained in the real world.

Table 4 below shows the outcome of the regression. The following conclusions are made on the basis of it:

1. Both ETFs and MIFs have zero **intercepts**, which signals that they don't outperform their benchmark. In some cases intercepts were slightly positive, but these observations were statistically insignificant. This outcome suits studies performed earlier for US ETFs by Agapova (2011), Elton et al. (2002), Rompotis (2005) and Frino and Gallagher (2001). As mentioned above studies suggested that there are no excess returns in passive management industry within ETFs and MIFs. This supports the results from *chapter 5.1.*, (recall *hypothesis 1* and *2*), where we found that both ETFs and MIFs do not significantly out- or underperform benchmark indices.

Regression for ETFs and MIFs to their benchmark based on returns of 2006 – 2013

Index	Name	MIF						ETF							Obs.
		Intercept	t-ratio*	Slope	t-ratio	R ²	SE(TE1)	Name	Intercept	t-ratio*	Slope	t-ratio	R ²	SE(TE1)	
AEX	BNPPARIBAS	0,000	-0,359	0,0306**	1,306**	0,001	0,015	SPDR	0,000	-0,034	0,978	160,895	0,934	0,004	1825
AEX								ISHARES	0,000	-0,027	0,975	206,235	0,959	0,003	1825
CAC 40	ING.DRCT. LYXOR	0,000	-0,354	-0,03**	-1,331**	0,001	0,016	LYXOR	0,000	-2,205	0,971	234,289	0,968	0,003	1825
CAC 40	NATIXIS	0,000	-0,424	0,437	20,308	0,184	0,015	Amundi	0,000	-0,636	0,976	189,488	0,952	0,004	1825
CAC 40	MAM MEESCHAERT FCP	0,000	-0,292	0,949	60,742	0,669	0,011							1825	
CAC 40	STRATEGIE	0,000	-0,928	0,903	93,176	0,826	0,007							1825	
CAC 40	GESTION VALOR	0,000	-0,317	0,801	60,396	0,667	0,009							1825	
DAX 30	OPPENHEIM	0,000	0,110	0,579	27,876	0,317	0,013	ISHARES	0,000	-0,162	0,936	107,931	0,874	0,006	1680
DAX 30	DT.POSTBANK	0,000	0,152	0,521***	24,109***	0,257	0,014	LYXOR	0,000	0,030	0,895	86,723	0,818	0,007	1680
DAX 30	PIONEER INVESTMENTS	0,000	0,161	0,616	30,979	0,364	0,013							1680	
STOXX 50	INVERSAFEI BOLSA EURO	0,000	0,451	0,840	77,071	0,765	0,007	ISHARES	0,000	-0,078	0,948	112,517	0,874	0,006	1825
STOXX 50	VITALGESTION	0,000	0,593	0,863	113,833	0,877	0,005	UBS	0,000	-0,212	0,607	28,224	0,304	0,015	1825
STOXX 50	GESBANKINTER	0,000	1,495	0,965	216,546	0,963	0,003	LYXOR	0,000	-0,137	0,853	69,496	0,726	0,008	1825
STOXX 50	DBV WINTERTH.FD.MAN.CO.	0,000	1,368	0,979	230,449	0,967	0,003	SPDR	0,000	0,191	0,827	46,737	0,545	0,012	1825
STOXX 50	ING DIRECT	0,000	0,343	0,815	72,928	0,745	0,008	DB X-tracker	0,000	0,049	0,981	181,031	0,955	0,004	1562
STOXX 50	MORGAN STANLEY LBRTY.	0,000	0,207	0,875	91,450	0,821	0,007							1825	
STOXX 50	UNION INVESTMENT LX	0,000	0,319	0,966	205,013	0,958	0,003							1825	
STOXX 50	ETOILE GESTION	0,000	-0,157	0,394***	16,414***	0,129	0,016							1825	
STOXX 50	KBC INDEX	0,000	1,070	0,969	165,410	0,938	0,004							1825	
FTSE 100	HSBC	0,000	-0,031	0,573	30,817	0,350	0,011	UBS	0,000	-0,810	0,788	34,117	0,398	0,013	1762
FTSE 100	HALIFAX UK	0,000	0,332	0,589	32,780	0,379	0,010	ISHARES DE	0,000	-0,352	0,757	38,151	0,453	0,011	1762
FTSE 100								ISHARES	0,000	-0,151	0,988	212,406	0,962	0,003	1762
IBEX 35	MORGAN STANLEY LIBERTY	0,000	0,373	0,862	85,032	0,819	0,007	BBVA	0,000	-0,157	0,897	80,958	0,804	0,008	1597
MSCI EUROPE	VANGD. ADMIRAL SHS.	0,000	-0,218	0,800	48,145	0,579	0,012	LYXOR	0,000	-0,341	0,754	86,348	0,815	0,006	1689
MSCI EUROPE	AMUNDI	0,000	0,345	0,669	61,170	0,689	0,008	SPDR	0,000	0,479	0,722	85,972	0,814	0,006	1689
MSCI EUROPE	SWISSCANTO CH	0,000	-0,212	0,734	75,440	0,771	0,007							1689	
SMI	CREDIT SUISSE CSA	0,000	1,965	0,980	279,167	0,977	0,002	ISHARES	0,000	0,685	0,674	48,141	0,560	0,007	1825
SMI								UBS	0,000	-0,033	0,932	92,284	0,824	0,005	1825
SMI								Credit Suisse	0,000	0,152	0,963	156,910	0,931	0,003	1825
TECDAX	LUX EURO STOCK	0,000	0,106	0,076**	3,61**	0,007	0,016	ISHARES	0,000	-0,056	0,970	90,102	0,817	0,008	1825
Average		0,000		0,683		0,578	0,009		0,000		0,876		0,776	0,007	

*all intercepts t-ratios are statistically insignificant, thus intercepts are not different from zero

** significant at 10% Confidence Interval

*** significant at 5% Confidence Interval

all other slopes are significant at 1% Confidence Interval

Table 4: Regression for ETF and MIF against benchmarks 2006-2013. Source Own design

2. In *table 4* above, we reveal our results regarding all funds picked for analysis. First impression from it is that slopes of ETFs are more closer to unity than of MIFs (the average for MIFs - **0,68** and for ETFs - **0,88**). This signals that ETF perform a better job in tracking. However, this conclusion can't be reliable as **4** slopes were insignificant. They are AEX's BNP Paribas; CaC 40's ING DRCT; Etoile Gestion, which is tracking STOXX 50; and TecDAX's Lux Euro Stock. For appropriate analysis we selected slopes, which were significant at 5% level. The outcome is that average slope for ETF - **0,88**; for MIF - **0,8**; t stat - **,02**, the difference is not significant at 5 %. This signals that there is no significant difference between MIFs and ETFs tracking performance on average, under 5% level alpha. One tail t-test was significant only at 10%, presenting that ETFs do not perform better tracking than MIFs on average given 5% level. Similarly, R^2 (average for ETF - **0,776**; MIF - **0,7**) as used by Cresson et al. (2002) is not statistically different among ETFs and MIFs, t statistics **2,02**.

3. Regarding the TE_1 , which is calculated using standard errors of regression and shown as "SE(TE1)" in the table above, we found **no significant difference** between ETFs (**0,0067**) and MIFs (**0,0078**), the t-statistics were **0,91**.

5.3.2. Long Term comparison of Tracking Errors

Apart from TE_1 we calculated 2 more TE estimates. Throughout the following chapter we first describe obtained tracking errors in relation to each other and afterwards present the results in order to answer *hypothesis 3*.

Overall, our analysis used three methods of TE calculations:

- TE_1 – tracking error calculated as standardized residuals of regression, discussed in *chapter 5.3.1 Regression of Tracking Error 1*
- TE_2 – standard deviation of Return differences $TE_2 = \sqrt{\text{var}(R_i - R_b)}$, where R_i is return of a fund and R_b is return of its benchmark.
- TE_3 – mean of absolute return differences.

The two charts below (*figure 15* and *16*) give an impression on how TEs vary according indices and across methods of calculation. Tracking Errors vary across indices in Europe. This is expected as every index possesses own characteristics and volatility. Next, TEs give similar results by using different calculation methods. Notably TE_1 and TE_2 are identical across ETF industry and TE_3 varies from TE_2 and TE_1 , but it is significantly correlated (e.g. $\rho_{TE_1,TE_3} = \mathbf{0,94}$, $R^2 = \mathbf{0,88}$, t stat = **16,78**, significant at 1%). According to Pope and Yadav (1994) if Betas are not exactly one than TE_2 and TE_1 would be different. In our case TE_1 and TE_2 are similar and within 0,002% variation (highlighted by error bars on the graph).

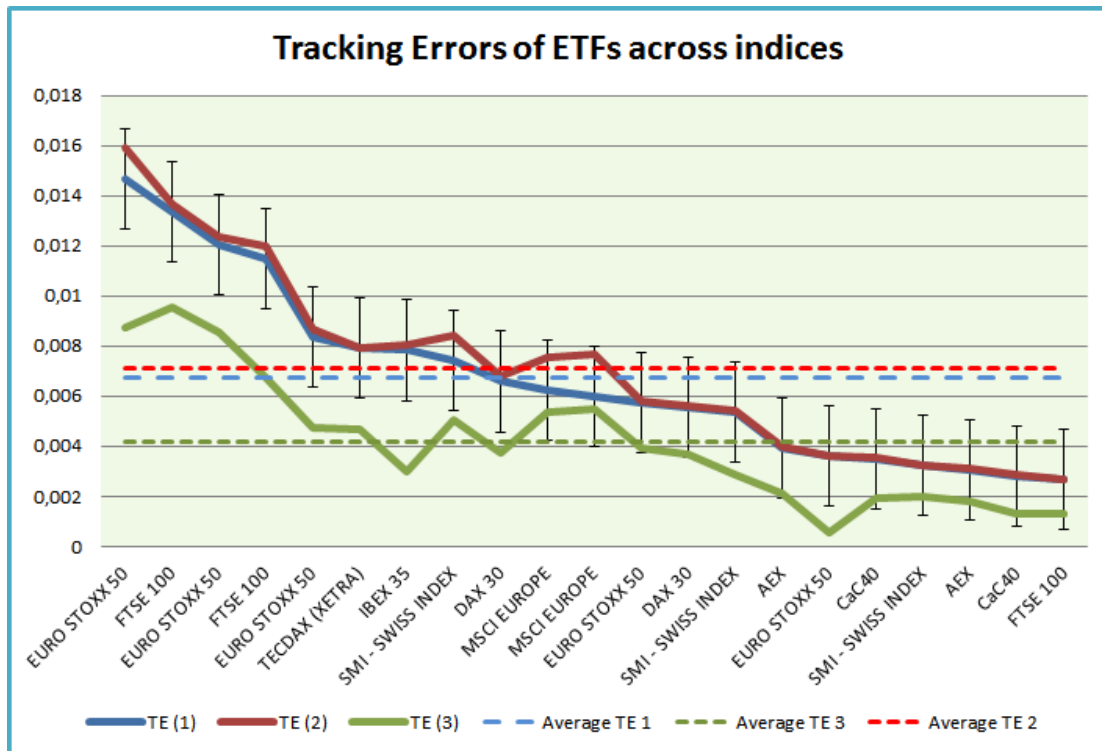


Figure 15: ETF Tracking Errors 2006 – 2013. Source: Own design.

Similar to ETFs we present a chart of TEs of MIFs. It reveals results similar to the ETFs', please see the *Figure 16*. For the MIFs TE_1 and TE_2 are similar. Referring to TE_3 it is less correlated than in case of ETFs - $\rho_{TE_1,TE_3}=0,90$, $R^2 = 0,82$, t stat = **13,29**, significant at 1%. For the table and graph including TEs for all MIFs please refer to *Appendix 5* and *6*.

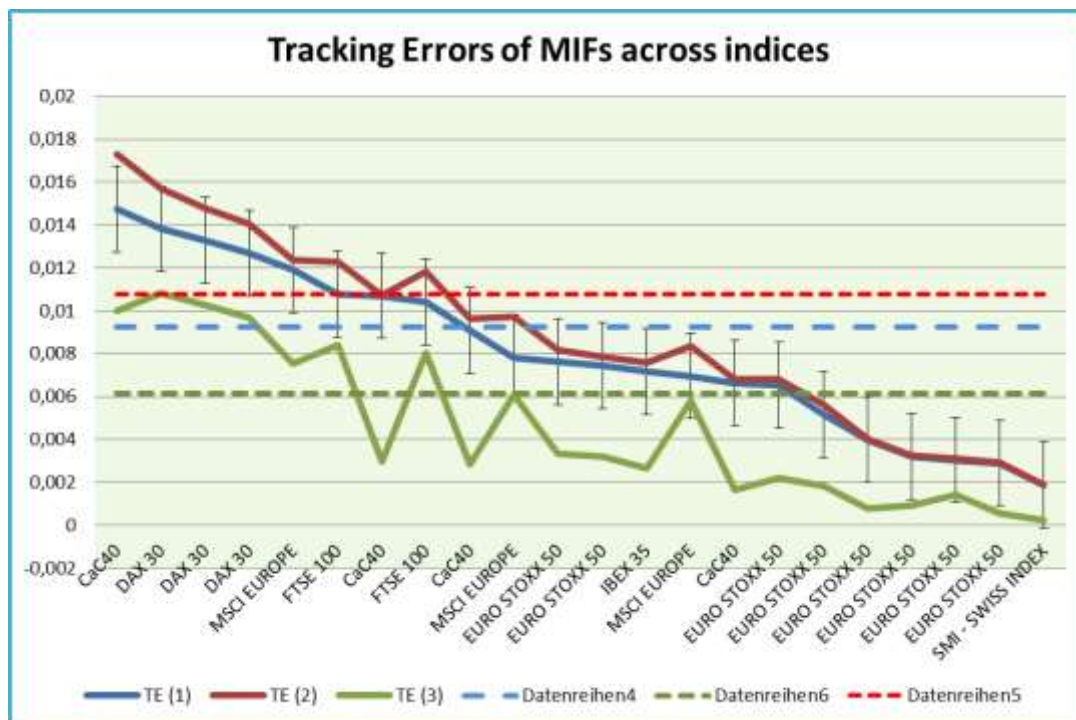


Figure 16: Tracking Errors of MIFs 2006 – 2013 (excluding 4 outliers). Source: own design.

In order to compare tracking errors across investment industries (between ETFs and MIFs) we have used t-tests for the mean with unequal variances. The results are presented in *table 5*. TEs 1 and 2 revealed no significant differences of mean TE for ETFs and MIFs at 10%. On average annual TE 1 is lower for ETFs by 20 basis points from MIFs. TE_2 is also lower by 20 basis points and TE_3 by 10 bps, however the results are not statistically significant.

Coefficients	TE (1)	TE (2)	TE (3)
ETF mean	0,007	0,007	0,004
MIF mean	0,008	0,009	0,005
Df	41	41	38
t Stat	-1,184	-1,393	-0,458
P(T<=t) one-tail	0,122	0,086	0,325
t Critical one-tail	1,683	1,683	1,686
P(T<=t) two-tail	0,243	0,171	0,649
t Critical two-tail	2,020	2,020	2,024
Significant?	no	no	no

Table 5: Two-Sample t-test. Assuming Unequal Variance (no outliers).
Source: own design

Hypothesis 3

Based on the comparison above, we answer our third hypothesis:

- The mean Tracking Error difference between Exchange Traded Funds and Mutual Index Funds is equal to zero.

$$H_0: TE_{MF} - TE_{ETF} = 0$$

$$H_A: TE_{MF} - TE_{ETF} \neq 0$$

Given the results for Tracking Error 1-3, we accept H_0 . There was no statistical evidence that mean Tracking Errors of ETFs and MIFs differ from each other. This is in accordance with previous research by Rompotis (2005), Svetina and Wahal (2008) and Agapova (2011) performed on the U.S. and cross national markets.

5.3.3. Annual Comparison of Tracking Errors

Hypothesis 3 told us that over a longer period TE difference becomes insignificant. We now want to find out if this result also holds for a shorter investment period. To develop further knowledge about this relationship, we compare Tracking Errors of MIF and ETF on a yearly basis to see whether the tracking performance is constant for both funds over time. At first, we would like to present an overview of daily TEs by years and then compare their pattern to. *Figure 17* shows the average TE, calculated according to method 2, for ETFs and MIFs.

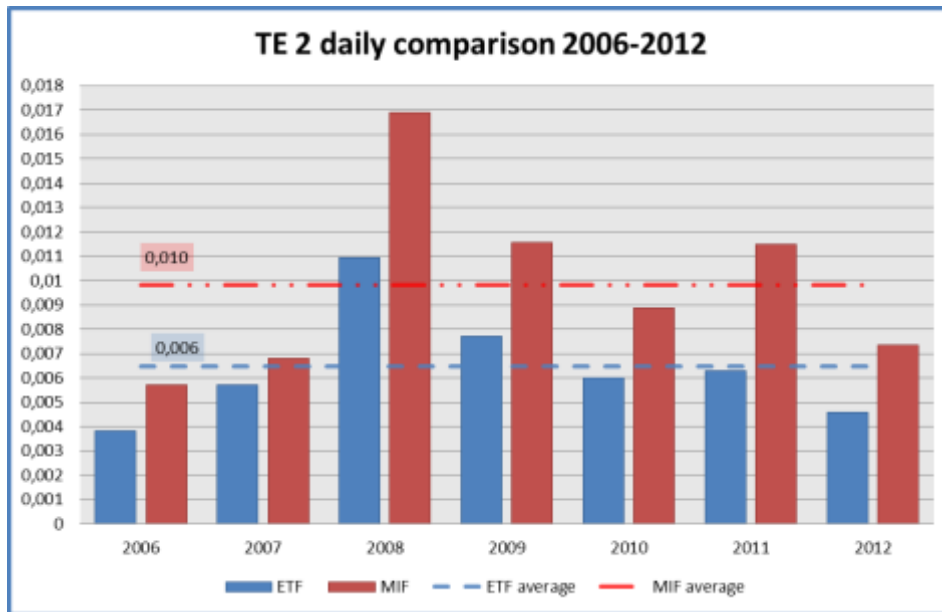


Figure 17: Tracking Error Comparison, ETFs (blue), MIFs (red), no outliers. Source: own design.

It can be seen from the *figure 17* that TE_2 increased during 2008 for both, ETFs and MIFs. The increase for ETFs was 44 and 13 bps from the average, during 2008 and 2009, respectively and 60 and 15 basis points for MIFs.⁵ Another, even though weaker breaking point for both fund types can be observed during 2010. The bottoms and peaks in 2008 and 2010 are likely to be attributed to high turbulence caused by the U.S. mortgage crisis of 2008 and by the European debt crisis triggered in 2010. Displaying the annual Tracking Error as done in *figure 18* below, draws an even clearer picture of the events.

The annual Tracking Errors are in line with the daily ones, as can be seen by comparing *figure 17* above and *figure 18* below. Both graphs indicate that ETFs tend to have slightly smaller TEs than MIFs.

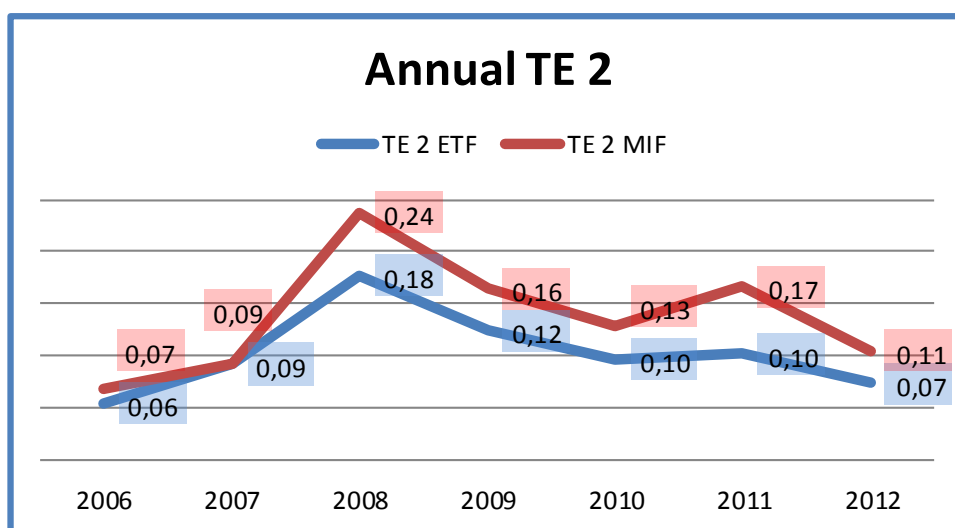


Figure 18: Annual Tracking Errors 2006 – 2013; Source: Own design

⁵ TE_3 draws a similar picture and will therefore not be discussed in detail.

In order to test the impressions from the graphs above, we applied t-tests for the mean tracking error on the annual basis. *Table 6* shows the results based on TE method 2.

Year	2006	2007	2008	2009	2010	2011	2012
Coefficients	TE (2)	TE (2)	TE (2)	TE (2)	TE (2)	TE (2)	TE (2)
ETF mean	0,055	0,092	0,177	0,124	0,097	0,102	0,074
MIF mean	0,069	0,093	0,237	0,164	0,129	0,166	0,105
t Stat	-1,08	-0,04	-1,58	-1,37	-1,50	-2,57	-1,96
P one-tail	0,14	0,49	0,06	0,09	0,07	0,01	0,03
t Crit one-tail	1,69	1,68	1,69	1,68	1,68	1,69	1,69
P two-tail	0,29	0,97	0,12	0,18	0,14	0,01	0,06
t Crit two-tail	2,03	2,02	2,02	2,02	2,02	2,03	2,03
Significant at	No	No	No	No	No	5%	10%

Table 6: Annual TE₂ t tests (no outliers); Source: own design

Against the impression from *figure 18*, we found no significant differences between MIFs and ETFs from 2006 to 2010. Years 2011 until the end of 2012 signal that there were difference and ETFs performed better than MIFs based on TE₂ using both annual and daily rate. In 2011 the difference was 40 bps (5% significance level) in favor of ETFs and 20 bps (10%) in 2012. Significant results obtained only for the last two years of the studied period can't signal that ETFs perform better than MIFs in terms of tracking, thus we would conclude that both ETFs and MIFs have on average same TEs on a yearly basis.

Summary

We compared TEs calculated by three different methods across ETFs and MIFs, including and excluding outliers as mentioned in the previous chapter. First TEs analysis with outliers resulted in significant difference among ETFs and MIFs in terms of TEs for the whole period and each year. Second analysis, excluding outliers revealed no significant difference. *Table 7* presents the results of our comparison:

Check	Betas	TE 1(SSE)	TE 2(stdv)	TE 3(MAD)
<i>with outliers</i>				
Long-term difference?	yes	yes	yes	yes
Different per year?	n/a	n/a	yes	Evidence for 2008 and 2011(10%)
<i>excluding 4 outliers</i>				
Long-term difference?	no	no	no	no
Different per year?	no	no	Evidence for 2011-2012	no

Table 7: Results of Tracking Error comparison; Source: own design.

We checked whether ETFs perform better tracking in comparison to MIFs using two sample t-tests for unequal variance. “Long-term difference” represents the comparison using comprising results for the whole span of 2006 – 2013, “different per year”

indicates whether there were differences for the chosen variables among each year separately.

In a nutshell, we show that tracking errors in the long, as well as in the short run are moving around the same mean for both investment tools with a slight indicator for lower TEs of Exchange Traded Funds throughout the last two years. The yearly investigation of TE further suggests that they might be influenced by certain events that effected the economy in the past. This relationship will be analyzed in detail throughout *chapter 5.3.4. Market State and Tracking Error*.

Excursus: Discussion of Outliers

In the following, we discuss outliers which we dismissed from the main comparison and tests when comparing TEs.

Index	Name	Intercept	t-ratio*	Slope	t-ratio	R ²	SE(TE1)	Comment
AEX	BNPPARIBAS	0,000	-0,359	0,031	1,306(10%)	0,001	0,0153	<i>original</i>
AEX	BNPPARIBAS	0,000	1,440	0,984	240,3(1%)	0,971	0,0003	<i>MA100 model</i>
CAC 40	ING.DRCT.	0,000	-0,354	-0,030	-1,331(10%)	0,001	0,0157	<i>original</i>
CAC 40	ING.DRCT.	0,000	-20,982	0,987	210,1(1%)	0,962	0,0003	<i>MA100 model</i>
STOXX 50	ETOILE GESTION	0,000	-0,157	0,394	16,414(5%)	0,129	0,0164	<i>original</i>
STOXX 50	ETOILE GESTION	0,000	0,695	0,975	202,4(1%)	0,963	0,0004	<i>MA100 model</i>
TECDAX	LUX EURO STOCK	0,000	0,106	0,076	3,61(10%)	0,007	0,0157	<i>original</i>
TECDAX	LUX EURO STOCK	0,000	-12,468	0,905	200,7(1%)	0,959	0,0004	<i>MA100 model</i>

**all intercepts t-ratios are statistically*

Table 8: Regression of outliers with their benchmarks; Source: Own design.

insignificant, thus intercepts are not different from zero

Table 8 above presents original results of regression and results after using a Moving Average model of span 100 on 1825 observations. We used MA model in order to smooth high frequency data (daily returns for 7 years) and obtain comprehensible picture of fund's performance. In addition, MA models could give better results in case of high autocorrelation of returns. All outcomes of MA model are significant and prove that chosen indices track their benchmark, however perform their job poorly on a daily basis. These results are consistent with Frino and Gallagher (2001) and Chu (2011), they reported that TEs calculated using daily returns are usually high in comparison to those TEs, which are calculated using monthly data. For example, Frino and Gallagher studying ETFs index tracking performance relative to S&P500 using monthly returns obtained betas not lower than 0,99 and accordingly quite low TEs. In contrast, Chu (2011) using daily returns obtained betas varying between 0,99 and -0,0009, his research was aimed on ETFs tracking main Chinese indices. Moreover, it is worth to note that Chu studied funds replication using a span of one year in most of the cases and Frino and Gallagher's studied span was five years.

These are analysis of outliers and reasoning behind bad performance of funds selected as outliers (*in total 4 funds all are MIFs*):

- ING Direct tracking CAC 40 has too low Betas and high TEs. First, its objective is to obtain annual TE less than 1% or to keep it below 5% of CAC 40's volatility. We found that it is ranked with the lowest mark according to

quantanalyst.com and boursorama.com (all are representative independent fund analysis providers). In addition, ING Direct had hard times tracking CAC 40 after March of 2009 due to high turbulences on the market caused by the U.S. financial crisis in US and the beginning of debt crisis in EU. One can observe from the *Figure 19* below, that quality of tracking was appropriate before 2009 and decreased after 2009 during upward moves in CAC 40. This is consistent with the studies of Blitz et al. (2012) and Chiang (1998), stating that funds obtain higher TE during upward trends of the index and track well during its decline.



Figure 19: ING Direct and CAC 40 2006-2013 Source: Own design

- AEX's BNPParibas had low tracking performance, because its main objective was to track Euronext All Share (it is a more comprehensive index including Euronext AEX index). Although AEX and AEX all share are similar on average using monthly data, we exclude it from our analysis of TEs as we use daily data. For details, please see the *Figure 20* below.



Figure 20: AAX (AEX all share) and AEX index, 2007 – 2013; Source: Own design

- Etoile Gestion Mutual Fund, changed his objective to seek the maximum performance using stock picking, thus becoming actively managed. Euro Stoxx index was used for him only as a benchmark to evaluate performance of the mangers. We exclude this index due as it is actively managed. (Etoile, 2013, p.1)
- Lux Euro Stock Mutual Fund tracking TecDax, performed badly, due to the same reason as ING Direct tracking CAC40 – it was hard to keep up with the growing index after 2009. The problem started after 2007 and increased significantly after 2009 due to US financial crisis, which increased volatility of markets. Please see the *Figure 21* below.



Figure 21: Lux Euro (black) and TecDax index (blue), 2007 – 2013; Source: Own design

To sum up, based on our analysis of TE_1 (using standard errors of residuals) and betas as an estimation of tracking performance of ETFs and MIFs, we can conclude that there was **no significant difference** in TE_1 between ETFs and MIFs during 2006 and 2013.

Our findings for European index trackers are similar with Rompotis (2005) and Agapova (2011).

5.3.4. Market State and Tracking Error

We have divided the overall time frame of 7 years into four sub-periods (please see 4.1.1 Time Horizon) according to the different market states. The sub-periods capture several different moods of the European economy as measured by the MSCI Europe. The Figures 20 and 21 below show the development of the MSCI Europe and tracking errors respectively over the whole time horizon 2006-2013. We used yearly averages of TE_2 and TE_3 for ETFs and MIFs⁶.

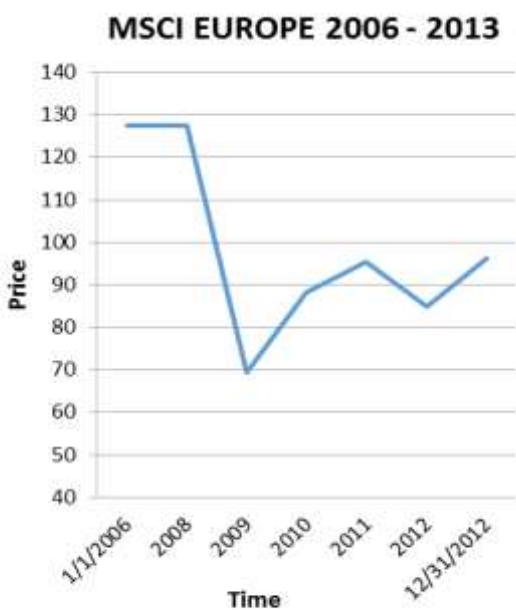


Figure 23: MSCI Europe yearly average (2006-2013). Data

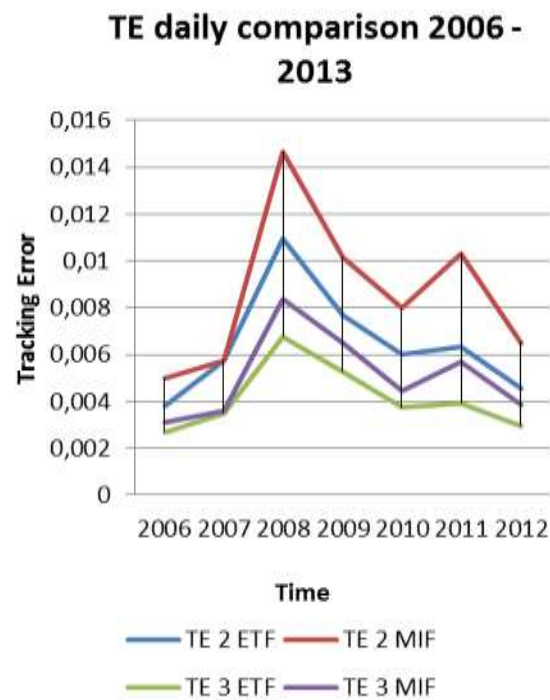


Figure 22: Average TEs (2006-2013).

⁶ The reason why we exclude TE_1 from this test is that it is based on the standard error of regression. To obtain TE-values for the years 2006-2007 we would need to run regressions for 47 funds for 7 years, which means $47 \cdot 7 = 329$ additional regressions and therefore would exceed our schedule.

Comparing both graphs (22 and 23) gives the impression of opposing movement between the European market and fund tracking error in a way that if the market descends, the tracking error starts to increase in the same time. Together with the fact that tracking error decreases while the market seems to recover, we already assume that tracking error is negatively correlated with the index movement and thus tracking quality increases during booms while it seems to decrease during recessions.

To gain evidence about the relationship between market return and TE, we regressed TE_2 and TE_3 against MSCI Europe index returns. Doing so, the results for both methods turned out to be significant. The strongest relationship however evolved from

<i>Name</i>	<i>ETF TE and MSCI</i>	<i>MIF TE and MSCI</i>
Multiple R	0,78	0,80
R ²	0,60	0,63
SE	0,02	0,02
Intercept	0,06	0,05
t ratio	2,69(5%)	2,87(5%)
TE (2) Ann.	-0,52	-0,37
t ratio	2,74(5%)	2,94(5%)

the regression using TE_2 .

Table 9 illustrates the outcome of this regression analysis for ETF and MIF respectively. In both cases alpha coefficients are positive (around 5%) and significant within the 5% level. Beta-coefficients are $-0,52$ and $-0,33$ for ETFs and MIF respectively and also significant at the 5% level. R^2 are 60% and 63,4% respectively. Those values indicate a clear negative relationship between the tested variables, while it seems to be slightly stronger for MIFs.

Sub-Periods

Table 9: Regression of TE and MSCI Source: Own calculation

Figure 24 and 25

illustrate the respective Tracking Error in relation to the MSCI Europe return during the different periods between 2006 and 2013. The red line shows rolling annual average of TE_2 and the blue line the average returns of MSCI Europe. The lines clearly indicate a reverse movement between both variables. Using the evidence from the regression in combination with *Figure 24* and *25* we can investigate the behavior of index tracking during the different sub-periods.

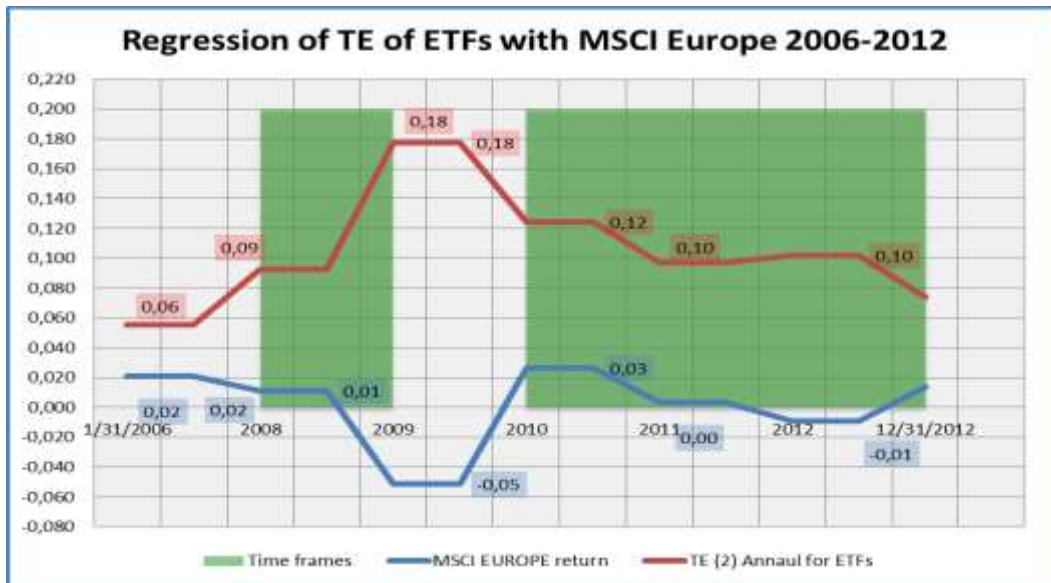


Figure 24: Regression TE and MSCI Europe for ETF Source: Own design

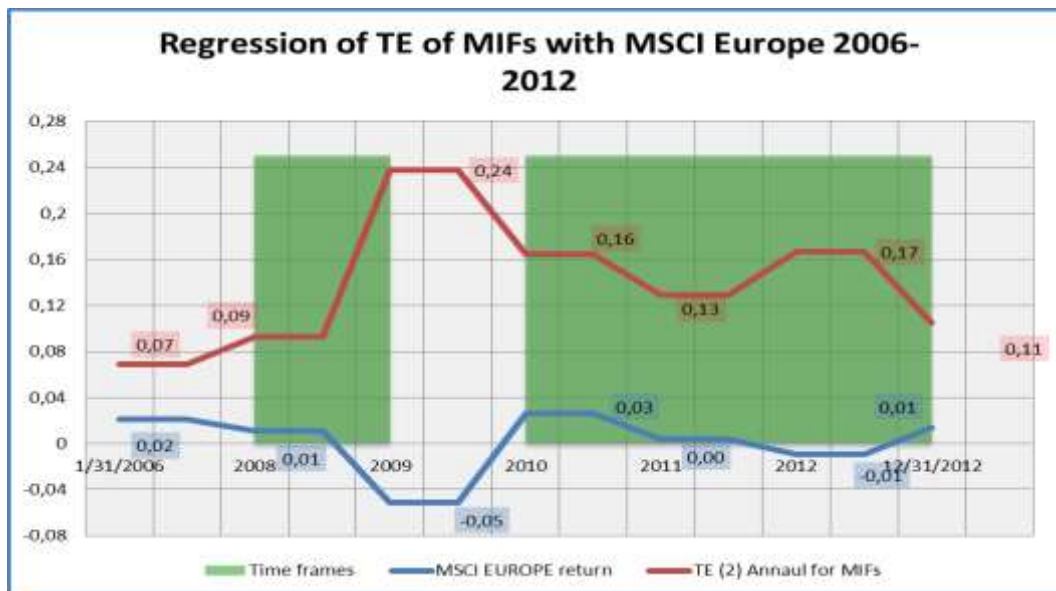


Figure 25: Regression TE and MSCI Europe for MIF Source: Own design

Period 1: Dec. 2006- Dec. 2007 Declining returns after boom

Period 2: Jan. 2008-Feb. 2009 Strong recession (subprime mortgage crisis) *marked green*

Period 3: Mar. 2009-2010: Ascending trend (recovering phase)

Period 4: Jan. 2010-Dec. 2012: Stagnation (European sovereign debt crisis) *marked green*

Period 1: The first sections in the graphs show the mean change of yearly TE and index returns from end 2006 to beginning 2008. The blue line reflects the decrease in average

returns during the year 2007 even though the overall upwards trend was not broken until 2008, there was already a decline in 2007. With the ups and downs during the year, Tracking Errors slightly increase for both instruments by the same amount.

Period 2: The actual recession started in the beginning of 2008 as a result of the financial crisis and lasted until the beginning of 2009. For the index this is shown by a strong decrease in returns during this time. Simultaneous the slope of TEs strongly increases. We see, that the Mutual Index Fund TE increases by 100% compared to 145% for Exchange Traded Fund TE.

Period 3: From March 2009 the market started to recover and so did Tracking Errors for both investment instruments. Even though index returns reached pre-crisis levels again, TEs don't recover to the base date level. While ETF Tracking Error even out at 4% above base date level, MIF Tracking Error recovers to 6% above base date.

Period 4: Recovery in 2010 is slowed down and changed into stagnation due to the European sovereign debt crisis. For the upcoming years, the European market showed several smaller ups and downs which might indicate the uncertainty of the future development. On average, the level remains fairly constant over time. At first the drop in Tracking Errors slows down. Next, between 2011 and 2013 they vary antithetic to market returns. While Tracking Error for ETFs average out at 10%, once again MIF react strong to the market decline in mid-2011.

Hypothesis 4

- For ETFs: There is no correlation between mean Tracking Error and the European economy.

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROPE}^{TE} \neq 0$$

Hypothesis 5

- For MIFs: There is no correlation between mean Tracking Error and the European economy.

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROPE}^{TE} \neq 0$$

What is visualized by the *Figure 24* and *25* is verified by the regression results in *Table 9*; therefore, we can state that changes in Tracking Errors of European Index Trackers are clearly correlated to the movement of European markets. We see that Index Funds in the form of ETFs and MIFs, which track European indices do a better job during booming or recovering development and deliver a poorer tracking quality for recessions. We further demonstrate that Mutual Index Funds tend to be stronger affected by this relationship than corresponding ETFs.

The results are in accordance with previous research on ETF Tracking Error, as conducted by Blitz and Huij (2012), Rompotis (2006, 2011), Aber et al. (2009) and others who show that ETF Tracking Error is positively correlated with market volatility. We extended the previous results by showing a significant increase in Tracking Error

during crises periods, not only for European ETFs but also for Mutual Index Funds on European indices.

5.4. Total Expense Ratio

5.4.1. ETF vs. MIF

As the descriptive statistics at the beginning of this chapter show, there are no significant differences in returns between index tracker and benchmark index. The two fund models therefore have a substitutive character (cf. Agapova, 2011) and thus, if replicating the same index, can be seen as direct competitors, who amongst others have to compete via their price, which is reflected by fund fees. Given similar return characteristics, we now want to know whether either ETFs or MIFs are able to operate more cost efficient than the other. As previously discussed we use Total Expense Ratio to represent fund fees as passed on to the investor.

Name	ETF	MIF
AEX	0,003	0,006
CaC40	0,003	0,015
DAX 30	0,002	0,007
EURO STOXX 50	0,002	0,012
FTSE 100	0,004	0,006
FTSE DEVELOPED EUROPE	0,001	
IBEX 35	0,003	
MSCI EUROPE	0,003	0,009
S&P EURO	0,004	
SMI	0,004	0,004
TECDAX (XETRA)	0,005	0,018
Average of TER	0,003	0,011

Table 10: Average of TER by index. Source: Own calculation

Table 10 shows the average values for ETFs and MIFs expense ratios⁷. We can see that the average TER for Mutual Index Funds (1,11%) exceeds the average expenses of ETFs (0,3%) by a notably 0,8%. Respective t-tests (*Appendix 7*) show that the differences are significant within the 1% level. *Figure 26* shows Expense Ratios of both fund types grouped up by indices.

⁷ Please note that for the calculation of average TER we removed 2 outlier Mutual Index Funds: ING Direct CAC 40 and Morgan Stanley Liberty Spanish. We excluded those two values as they break away for nearly 1% from the rest of the sample. Therefore, we find this funds rather distorting than representative for the whole sample. The exclusion reduces the average TER for MIFs by 7 bps.

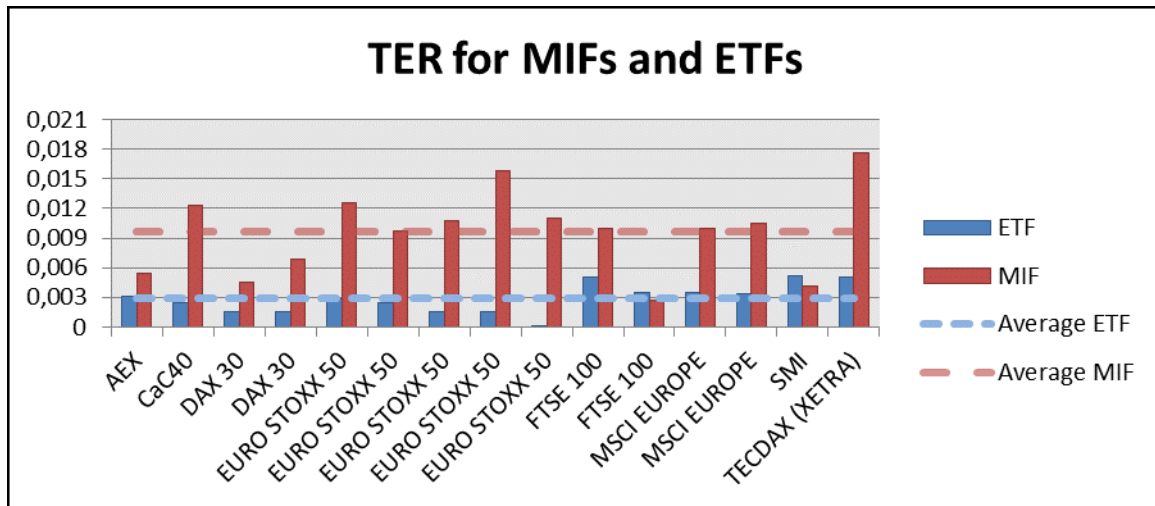


Figure 26: TER for ETFs and MIF grouped for Index. Source: Own design

We can see that MIF expenses are frequently higher than those of ETFs with two exceptions; Credit Suisse produces lower fees when tracking the Swiss Market Index (SMI) than iShares and the FTSE 100 tracker of HBSC has lower costs than the respective ETF of UBS. In both cases we talk about a difference of 10 bps.

Hypothesis 6:

- The difference of mean TER for Exchange Traded Funds and Mutual Index Funds is equal to zero

$$H_0: TER_{MF} - TER_{ETF} = 0$$

$$H_A: TER_{MF} - TER_{ETF} \neq 0$$

Since the difference in Total Expense Ratio between ETF and MIF is significantly different from zero, we have to reject H_0 .

Our findings about TER generally confirm most previous literature also for European index trackers, i.e. that ETFs have on average lower expense ratios than MIFs. Blitz et al. (2010, p. 655) state TERs for ETFs between 0,35% and 0,75% and for MIFs between 0,38% and 1,22% for different international benchmarks. Rompotis (2005, p. 13) calculated an average of 0,228% for ETFs and 0,423% for MIFs and Agapova (2011, p. 328) states average expense ratios of 0,18 for ETFs and 0,75% for MIFs. We observe only two examples, where MIF beat ETF expense ratios. Here it appears that the company that operates in the country the benchmark is related to, can act more cost efficient than the respective ETF provided by a foreign investment company.

5.4.2. Total Expense Ratio and Tracking Error

We saw that for the most funds, Mutual Index Funds charge higher fees to the investor than Exchange Traded Funds. Since our final quality criteria for index fund performance is Tracking Error, we want to know if there is a relationship between fees and tracking quality. *Hypothesis 7* and *8* will give an idea about the impact magnitude of TER on TE that an investor should consider when making the choice for either one of the investment instruments. *Table 11* contains the results of the regressions with Tracking Error as dependent and Total Expense Ratio as explanatory variable. The

regression was run for TE_1 to TE_3 separately and for both fund types combined as well as individually. Section A shows the regression including the pool of all funds, section B only including ETFs and section C MIFs.

Coefficient	A: Regression of all investment vehicles			B. Regression of ETFs			C. Regression of MIFs		
	TE (1)	TE (2)	TE (3)	TE (1)	TE (2)	TE (3)	TE (1)	TE (2)	TE (3)
Alpha	0,007	0,007	0,005	0,006	0,006	0,003	0,010	0,010	0,008
t stat	7,76*	7,71*	6,41*	2,84**	2,74**	2,04***	4,87*	4,88*	4,7*
TER	0,038	0,042	-0,087	0,344	0,410	0,415	-0,119	-0,173	-0,283
t stat	0,39	0,39	1,09	0,55	0,62	0,94	0,79	1	2,19**
R ²	0,004	0,004	0,028	0,016	0,020	0,045	0,030	0,050	0,190
SSE	0,004	0,004	0,003	0,004	0,004	0,003	0,004	0,004	0,003

Table 11: Regression TE with TER. Source: Own design.

The constant for all regressions are slightly positive and significant between the 1 or 10% level. Coefficients for TER are positive for section B, negative for section C and varying for different Tacking Errors in section A. A look at the t-values however shows that only the coefficient for TE_3 in section C is significant at the 5% level. Yet, the graph in *Appendix 8* shows that the results are not normally distributed and therefore cannot be taken as valid.

Based on the data from *Table 11* we answer *hypothesis 7-8*:

Hypothesis 7

- There is no correlation between Total Expense Ratio and Mutual Index Fund Tracking Error.

$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

Hypothesis 8

- There is no correlation between Total Expense Ratio and Exchange Traded Fund Tracking Error.

$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

In contrast to Meinhardt et al. (2012), we cannot use expense ratios to explain ETFs Tracking Error. The same applies for the regression result using MIFs. Due to the lack of significance we accept H_0 for both, *hypothesis 7* and *hypothesis 8* and state that we cannot observe an effect of TERs on neither ETFs nor MIFs Tracking Error and therefore TER has no influence on tracking quality of neither of them. This might be likely due to the small amount of observations we get when splitting up the fund categories, which also enjoins us to generalize the findings about the relationship between TE and TER. It is therefore recommended to repeat the regression with a bigger sample for both fund categories.

5.5. Executive Summary (preliminary)

<i>Hypothesis #</i>	<i>Formulation</i>	<i>Accept Null Hypothesis?</i>
Hypothesis 1	$H_0: \mu_{MF} - \mu_{Index} = 0$ $H_A: \mu_{MF} - \mu_{Index} \neq 0$	✓
Hypothesis 2	$H_0: \mu_{ETF} - \mu_{Index} = 0$ $H_A: \mu_{ETF} - \mu_{Index} \neq 0$	✓
Hypothesis 3	$H_0: TE_{MF} - TE_{ETF} = 0$ $H_A: TE_{MF} - TE_{ETF} \neq 0$	✓
Hypothesis 4	For ETFs: $\begin{cases} H_0: \beta_{EUROPE}^{TE} = 0 \\ H_A: \beta_{EUROPE}^{TE} \neq 0 \end{cases}$	✗
Hypothesis 5	For MIFs: $\begin{cases} H_0: \beta_{EUROPE}^{TE} = 0 \\ H_A: \beta_{EUROPE}^{TE} \neq 0 \end{cases}$	✗
Hypothesis 6	$H_0: TER_{MF} - TER_{ETF} = 0$ $H_A: TER_{MF} - TER_{ETF} = 0$	✗
Hypothesis 7	For MIFs: $\begin{cases} H_0: \beta_{TE}^{TER} = 0 \\ H_A: \beta_{TE}^{TER} \neq 0 \end{cases}$	✓
Hypothesis 8	For ETFs: $\begin{cases} H_0: \beta_{TE}^{TER} = 0 \\ H_A: \beta_{TE}^{TER} \neq 0 \end{cases}$	✓

Table 12: Overview of Hypothesis outcomes. Source: Own design.

6. Conclusion

In this chapter we restate and answer our research question from chapter 1. We base the answer on the findings as discussed throughout chapter 5 and draw a conclusion about how the research purpose was fulfilled and what are the main contributions of this paper. We end with some interesting recommendations that connect to our research and would pick up on our delimitations.

The purpose of this paper was to identify and estimate measures for tracking quality within the passive Fund industry and compare them within the two investment instruments Mutual Index Funds and Exchange Traded Funds. We extended existing knowledge on the matter by appreciating exclusively index funds with European benchmarks and provide a basis for a more extensive research within the field. As a basis for the study we formulated the research question.

RQ: Do Exchange Traded Funds replicate the Performance of European Indices better than Mutual Index Funds?

To gain sufficient knowledge that allow us to answer this questions and the related hypotheses we accomplished a number of test procedures that led us to the inference that

- *neither Exchange Traded Funds nor Mutual Index Funds show tracking quality advantage when compared to each other.*

We therefore answer the main research question with “no”.

Over the period from 2006 to the end of 2012, on average both instruments achieved their objective, i.e. to deliver the same return as the benchmark index. This was shown due to the insignificance of return differences between the fund types, as well as between funds and indices. The main evidence about tracking quality however was found by comparing the tracking errors of both instruments. Yet again, for the timeframe in question we found no significant difference which tells us that the overall tracking quality is the same for both. This doesn't change when we switch from the long term to a yearly perspective. TE_2 was the only estimate that slightly indicated an advantage of ETFs for the last two years. Though, we don't make any inference from this, it can be interesting to continue following the trend in the next years.

We further took the recent turmoils on global and European markets as opportunity to see how tracking error behaves during different market states. Therefore the first sub question asked

- *SQ 1: Is tracking quality correlated with the states in European financial markets?*

Our answer here is “yes”. We show a clear negative relationship between market movement and tracking error which means index tracking risk increases during recession and vice versa. We found this to be true for both instruments with slightly stronger evidence for Mutual Index Funds.

Investigating similar products with substitutional features, we wanted to know if there is a price difference in the form of unequal expense ratios.

- *SQ 2: Is there a difference in fund costs?*

We show that MIFs have frequently higher expense ratios than ETFs (on average 80 bps) which is in accordance with most research on other markets. However, in our case the investigation of impacts of fees on Tracking Error doesn't allow for any statistical inference.

Overall, our results lead us to the conclusion, that index investment instruments, namely Exchange Traded Funds and Mutual Index Funds on European indices, on average provide a satisfying tracking quality without showing significant quality differences in achieving their goal in the long term. The yearly comparison with to the European market further indicates that both instruments show deficits in tracking accuracy during down markets, while this phenomenon is stronger for Mutual Index Funds. Furthermore, even though we found that on average MIFs show higher fees, we cannot prove any related impact on tracking performance.

Based on our results, we agree that Mutual Index Funds and Exchange Traded Funds with the objective to track European indices are good, however not perfect, substitutes when tracking the same benchmark (cf. Agapova, 2011; Svetina & Wahal, 2008). While both deliver approximately the same tracking performance, it is mainly depending on the investor and his objectives to decide whether to invest in ETF or MIF.

6.1. Theoretical and Practical Contribution

The number of studies directly comparing Mutual Index Funds and Exchange traded funds is still limited, mainly due to the emerging state of Exchange Traded Funds which made it difficult in the past to obtain a necessary amount of observations. Our study ties in on previous research and contributes to the subject by allowing for generalization of knowledge to European index trackers. We not only provide new evidence about the development on the so far neglected European market but also give an update on the field by using most recent data available. By analyzing tracking performance, fee distribution and market correlation, we give a new and comprehensive insight into Index Funds in the form of Exchange Traded Funds and Mutual Index Funds. We provide feasible results for each investment instrument separately, as well as in a comparative manner which can be applied as a basis for further theoretical and practical purposes.

From a practical perspective, our results can be considered not only by current and future investors, having or considering investments in the European market, but also by both sides of investment companies.

Firstly, investors who struggle with the understanding of the difference of these two very similar investment instrument can enhance their understanding and based on their preferences consider our findings for decision making. I.e. while a long-term investor might be rather indifferent between ETFs and MIFs, apart from tradability, our findings suggest a preference for ETFs for short-term investors due to lower fees and the lower sensitivity towards short term changes in the European market.

Secondly, our results indicate a highly substitutional relationship between ETFs and MIFs. Investment companies therefore might consider our outcomes for strength and weaknesses investigation in order to pursue their competitiveness. We show that both, ETFs and MIFs show inferior tracking during down markets which should give incentive for improvement. Further, ETFs tend to beat passive mutual funds in cost efficiency, which has important implications for fund managers as fees are a frequent decision criteria for passive investors.

6.2. Further Research Suggestion

We see reason to continually update the knowledge of our research subject. This is mainly due to the ongoing growth of the ETF market and the implied increasing amount of data availability which will allow for higher research flexibility in the future. It will stay interesting to monitor the coexistence of MIFs and ETFs, and follow current trends. The questions for the future could be, if ETFs keep gaining market shares and whether there will be further improvements (e.g. we found weak evidence for short term tracking improvement of ETFs when compared to MIFs). We motivate researchers not only to renew previous findings and to explore further markets, but also to take our results as a basis for a cross-sectional investigation, e.g. to expose possible differences between the well investigated U.S. fund market and Europe trackers.

We further recommend an in-depth analysis of more factors that affect tracking quality of index funds on European markets. This might be done by using logistic regression as we introduced it throughout this work. Including more factors such as, expense ratios, fund volume, fund age and others that have a potential impact on tracking in combination with a higher amount of observations would further contribute to the understanding of differences between ETFs and MIFs on the European Market.

Such a casual study could also have an exclusive focus on Exchange Traded Funds. As we have seen throughout *chapter 3*, ETFs make use of different methods to replicate indices (namely *physical* and *synthetical* replication). Since the replication method is at the heart of index tracking, there is a substantial ongoing debate on which of the methods is superior. It would therefore be valuable to continue this discussion within our population of European index trackers.

Another direction for further research would be to focus on the more specialized sector funds, which are also available to investors in the form of MIFs as well as ETFs. These more “exotic” tracker funds provide a variety of additional investment possibilities and became of increasing importance throughout the recent years. Due to the extensive diversification of those instruments across market sectors, they provide a lot of food for thought.

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Appendix 1: List of Fund pairs with matching Indices

Index	Pair(ETF 1st)
DAX	Lyxor and Pioneer
STOXX	Lyxor and Gesbanki
MSCI EU	Lyxor and Vangd
STOXX	SPDR and DBV
STOXX	SPDR and Swisscanto
SMI	UBS and CS
FTSE	UBS and HSBC
STOXX	UBS and Vital Gestion
CAC40	Amundi and Strategie
IBEX	BBVA and MS
STOXX	DBX and Union
FTSE	Ishares and Halifax
DAX	Ishares and Oppenheim
STOXX	Ishares and Inversaf
CAC 40	Lyxor and MAM

Appendix 2: T-tests for mean return difference

T-tests for the mean return difference, daily based on 2006 - 2013 Source: Own calculation

Index	Name of a Fund	Type	Mean of	Mean of index	t stat	Significant?	Obs.
AEX	BNP	MIF	-0,0001	-0,0001	0,009	no	1825
AEX	SPDR	ETF	-0,0001	-0,0001	0,000	no	1825
AEX	IHARES	ETF	-0,0001	-0,0001	0,002	no	1825
CAC40	Lyxor	ETF	-0,0001	0,0000	-0,273	no	1825
CAC40	Amundi	ETF	-0,0001	0,0000	-0,095	no	1825
CAC40	ING.DRCT.	MIF	-0,0001	0,0000	-0,234	no	1825
CAC40	NATIXIS	MIF	-0,0001	0,0000	-0,268	no	1825
CAC40	MAM FRANCE	MIF	-0,0001	0,0000	-0,136	no	1825
CAC40	STRATEGIE	MIF	-0,0001	0,0000	-0,264	no	1825
CAC40	GESTION VALOR	MIF	-0,0001	0,0000	-0,124	no	1825
DAX30	ISHARES	ETF	0,0002	0,0002	-0,245	no	1680
DAX30	LYXOR	ETF	0,0002	0,0002	-0,089	no	1680
DAX30	OPPENHEIM	MIF	0,0001	0,0002	-0,117	no	1680
DAX30	DT.POSTBANK	MIF	0,0001	0,0002	-0,098	no	1680
DAX30	PIONEER	MIF	0,0002	0,0002	-0,062	no	1680
EURO STOXX 50	INVERSAFEI BOLSA	MIF	-0,0001	-0,0002	0,576	no	1825
EURO STOXX 50	VITALGESTION	MIF	-0,0001	-0,0002	0,583	no	1825
EURO STOXX 50	GESBANKINTER	MIF	-0,0001	-0,0002	0,790	no	1825
EURO STOXX 50	DBV WINTERTH.FD.MAN.CO.	MIF	-0,0001	-0,0002	0,387	no	1825
EURO STOXX 50	MS ING DIRECT NARANJA	MIF	-0,0001	-0,0002	0,180	no	1825
EURO STOXX 50	MORGAN STANLEY LBRTY.	MIF	-0,0001	-0,0002	0,059	no	1825
EURO STOXX 50	UNION INVESTMENT LX	MIF	-0,0001	-0,0002	0,332	no	1825
EURO STOXX 50	ETOILE EURO	MIF	-0,0001	-0,0002	0,657	no	1825
EURO STOXX 50	KBC INDEX	MIF	-0,0001	-0,0002	0,648	no	1825
EURO STOXX 50	ISHARES	ETF	-0,0002	-0,0002	0,992	no	1825
EURO STOXX 50	UBS	ETF	-0,0002	-0,0002	0,576	no	1825
EURO STOXX 50	Lyxor	ETF	-0,0002	-0,0002	0,974	no	1825
EURO STOXX 50	SPDR	ETF	-0,0001	-0,0002	0,712	no	1825
EURO STOXX 50	DBX UCITS ETF	ETF	-0,0003	-0,0002	0,001	no	1825
FTSE 100	HALIFAX	MIF	0,0001	0,0000	0,485	no	1762
FTSE 100	HSBC	MIF	0,0000	0,0000	0,531	no	1762
FTSE 100	ISHARES	ETF	-0,0001	0,0000	0,997	no	1762
FTSE 100	ISHARES	ETF	0,0000	0,0000	0,333	no	1762
FTSE 100	UBS	ETF	-0,0003	0,0000	0,483	no	1762
IBEX 35	BBVA ACCION	ETF	-0,0003	-0,0003	0,192	no	1597
IBEX 35	MORGAN STANLEY LIBERTY	MIF	-0,0002	-0,0003	0,309	no	1597
MSCI EUROPE	VANGD	MIF	-0,0001	-0,0001	0,715	no	1689
MSCI EUROPE	AMUNDI	MIF	0,0000	-0,0001	0,837	no	1689
MSCI EUROPE	SWISSCANTO CH	MIF	-0,0001	-0,0001	0,928	no	1689
MSCI EUROPE	LYXOR	ETF	-0,0001	-0,0001	0,130	no	1689
MSCI EUROPE	SPDR	ETF	0,0000	-0,0001	0,624	no	1689
SMI	CREDIT SUISSE CSA	MIF	0,0000	-0,0001	0,337	no	1689
SMI	ISHARES	ETF	0,0001	-0,0001	0,001	no	1689
SMI	UBS	ETF	-0,0001	-0,0001	0,431	no	1689
SMI	Credit Suisse	ETF	0,0000	-0,0001	0,371	no	1689
TECDAX	LUX EURO	MIF	0,0001	0,0002	0,440	no	1825
TECDAX	ISHARES	ETF	0,0002	0,0002	0,827	no	1825

Appendix 3: Two-sample t-test for ETF and MIF

t-Test: Two-Sample Assuming Unequal Variances for ETF and MIF over or underperformance between each other

Index	CAC 40	CAC 40	Dax	Dax	Stoxx	Stoxx	Stoxx	Stoxx	FTSE 100	FTSE 100	IBEX	MSCI EU	MSCI EU	SMI
Name	Lyxor and Mam France	Amundi and Strategie	Ishares and Oppenheim	Lyxor and Pioneer	Ishares and Iversafei	Lyxor and Vital Gestion	SPDR and Gesbanki	Dbx and DBV	Ishares DE and Halifax	Ishares and HSBC	BBVA and MS	Lyxor and Vanguard	SPDR and Amundi	Ishares and CS
Mean ETF	-0,038	-0,014	0,043	0,049	-0,044	-0,044	-0,023	-0,071	-0,030	-0,006	-0,087	-0,029	0,006	0,021
Mean MIF	-0,019	-0,037	0,041	0,047	-0,017	-0,020	-0,015	-0,049	0,022	-0,004	-0,060	-0,033	0,005	0,008
Observati	1825	1825	1680	1680	1825	1825	1825	1562	1762	1762	1597	1689	1689	1825
df	3557	3648	3356	3355	3637	3624	3587	3122	3433	3517	3184	3211	3376	3614
t Stat	-0,13	0,17	0,02	0,01	0,21	0,19	-0,05	-0,15	-0,37	-0,01	-0,18	0,03	0,00	0,13
P one-tail	0,45	0,43	0,49	0,50	0,42	0,42	0,48	0,44	0,36	0,49	0,43	0,49	0,50	0,45
t Crit. one	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65
P two-tail	0,90	0,86	0,99	0,99	0,84	0,85	0,96	0,88	0,71	0,99	0,86	0,98	1,00	0,90
t Crit. two	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96
Significant	no	no	no	no	no	no	no	no	no	no	no	no	no	no

Appendix 4: Results of logistic regression (15 pairs)

1) Significant at 10% values are in bold.

Index	IBEX	CAC 40	STOXX	FTSE
Test	BBVA and MS	Lyxor and MAM	Lyxor and Gesbanki	UBS and HSBC
Hos. and Lem. Test	0,39	0,60	0,08	0,48
Correct prediction, %	70,83	61,11	54,17	62,50
Coefficient for single const	-0,88	-0,45	-0,16	0,51
Sig.	0,00	0,06	0,48	0,04
Unconditional OR for ETFs	0,41	0,64	0,84	1,67
Nagelkerke R Square	0,27	0,14	0,07	0,06
Coefficient (Return)	-20,27	13,04	-7	-10,96
Sig.	0,00	0,01	0,15	0,08
OR	0,00	5,20	0,93	0,00
95% CI lower	0,00	20,33	0,74	0,00
95% CI upper	0,00	57,00	1,02	4,50
Coefficient (Stdev)	-84,50	-52	-69,41	-44

Sig.	0,06	0,43	0,08	0,26
OR	0,00	0,00	0,00	0
95% CI lower	0,00	0,00	0,00	0
95% CI upper	8,31	7,23	14,00	0
Coefficient (Constant)	0,064	-0,44	0,41	1,09
Sig.	0,92	0,08	0,68	0,06
OR	1,06	0,64	1,51	2,97

2) All results from logistic regression

	Index	CAC40	IBEX	STOX X	FTSE	DAX	STOXX	CAC 40
	Name	<i>Amundi and Strategie</i>	<i>BBVA and MS</i>	<i>DBX and Union</i>	<i>Ishares and Halifax</i>	<i>Ishares and Oppenheim</i>	<i>Ishares and Inverse</i>	<i>Lyxor and MAM</i>
<i>Constant Single</i>	<i>B</i>	-0,38	-0,88	-0,36	1,42	1,34	-0,22	-0,45
	<i>Sig.</i>	0,10	0,00	0,10	0,00	0,00	0,35	0,06
	<i>Exp(B)</i>	0,67	0,41	0,67	4,14	3,80	0,80	0,64
<i>Goodness of Fit</i>	<i>Percentage Correct</i>	59,72	70,83	59,72	80,56	79,17	55,56	61,11
	<i>-2 Log likelihood</i>	93,89	71,98	96,08	70,48	72,81	98,53	88,52
	<i>Cox & Snell R Square</i>	0,04	0,19	0,01	0,01	0,01	0,01	0,10
	<i>Nagelkerke R Square</i>	0,06	0,27	0,02	0,01	0,02	0,01	0,14
	<i>Hosmer and Lemeshow Test</i>	0,79	0,39	0,95	0,07	0,64	0,50	0,60
<i>Return</i>	<i>B</i>	7,54	-20,27	1,42	-2,73	-0,35	1,19	13,04
	<i>S.E.</i>	5,18	6,26	4,62	7,28	5,51	4,52	5,11

	<i>Wald</i>	2,12	10,4 9	0,09	0,14	0,00	0,07	6,50
	<i>df</i>	1,00	1,00	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,15	0,00	0,76	0,71	0,95	0,79	0,01
	<i>Exp(B)</i>	1,80	0,00	4,15	0,07	0,70	3,29	5,20
	<i>95% C.I.for EXP(B)</i>	0,07	0,00	0,00	0,00	0,00	0,00	20,33
	<i>Upper</i>	47,96	0,00	3,58	10,14	3,44	2,32	103,3 4
<i>Stdev</i>	<i>B</i>	-4,97	- 84,5 0	-26,02	-30,55	39,59	-13,50	
	<i>S.E.</i>	39,13	44,1 9	37,37	44,49	51,21	35,40	
	<i>Wald</i>	0,02	3,66	0,48	0,47	0,60	0,15	
	<i>df</i>	1,00	1,00	1,00	1,00	1,00	1,00	
	<i>Sig.</i>	0,90	0,06	0,49	0,49	0,44	0,70	0,44
	<i>Exp(B)</i>	0,01	0,00	0,00	0,00	15,60	0,00	
	<i>95% C.I.for EXP(B)</i>	0,00	0,00	0,00	0,00	0,00	0,00	
	<i>Upper</i>	139,20	7,23	32,20	39,50	25,00	0,00	
<i>Constant</i>	<i>B</i>	-0,30	0,06	0,00	1,82	0,80	-0,01	-0,44
	<i>S.E.</i>	0,62	0,68	0,59	0,67	0,74	0,57	0,26
	<i>Wald</i>	0,23	0,01	0,00	7,48	1,15	0,00	2,99
	<i>df</i>	1,00	1,00	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,63	0,92	1,00	0,01	0,28	0,98	0,08
	<i>Exp(B)</i>	0,74	1,07	1,00	6,17	2,22	0,99	0,64

Index	DAX	STOXX	MSCI EU	STOXX	STOXX
<i>Name</i>	<i>Lyxor and Pioneer</i>	<i>Lyxor and Gesbanki</i>	<i>Lyxor and Vangd</i>	<i>SPDR and DBV</i>	<i>SPDR and Swisscanto</i>

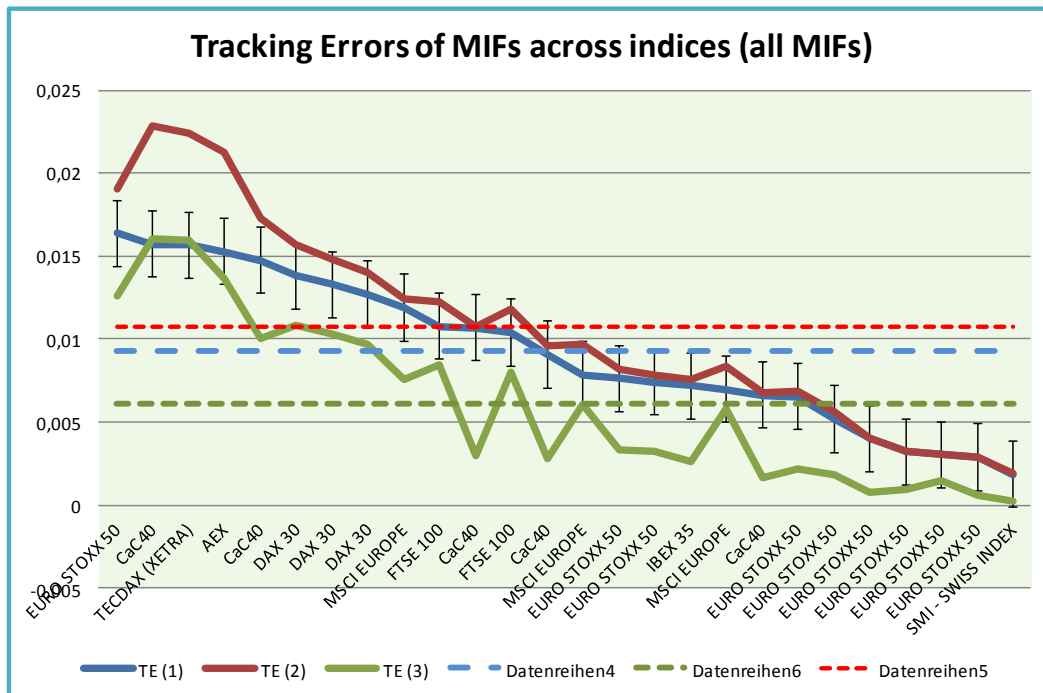
<i>Constant Single</i>	<i>B</i>	0,63	-0,17	1,95	-2,08	0,63
	<i>Sig.</i>	0,01	0,48	0,00	0,00	0,01
	<i>Exp(B)</i>	1,88	0,85	7,00	0,13	1,88
<i>Goodness of Fit</i>	<i>Percentage Correct</i>	65,28	54,17	87,50	88,89	65,28
	<i>-2 Log likelihood</i>	92,42	95,38	50,52	48,66	90,68
	<i>Cox & Snell R Square</i>	0,01	0,05	0,05	0,02	0,03
	<i>Nagelkerke R Square</i>	0,01	0,07	0,10	0,04	0,04
	<i>Hosmer and Lemeshow Test</i>	0,66	0,08	0,01	0,83	0,51
<i>Return</i>	<i>B</i>	-2,52	-6,98	11,41	-3,66	5,36
	<i>S.E.</i>	4,49	4,90	7,46	7,93	3,59
	<i>Wald</i>	0,31	2,03	2,34	0,21	2,23
	<i>df</i>	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,58	0,15	0,13	0,64	0,14
	<i>Exp(B)</i>	0,08	0,00	90,24	0,03	212,72
	<i>95% C.I. for EXP(B)</i>	0,00	0,00	0,04	0,00	0,19
	<i>Upper</i>	-4,37	-4,02	18,15	-3,85	47,17
<i>Stdev</i>	<i>B</i>	7,35	-69,41	113,24	-86,77	n/a
	<i>S.E.</i>	37,79	39,64	74,60	78,76	n/a
	<i>Wald</i>	0,04	3,07	2,30	1,21	n/a
	<i>df</i>	1,00	1,00	1,00	1,00	n/a
	<i>Sig.</i>	0,85	0,08	0,13	0,27	0,87
	<i>Exp(B)</i>	15,48	0,00	15,10	0,00	n/a
	<i>95% C.I. for EXP(B)</i>	0,00	0,00	0,00	0,00	n/a

	<i>Upper</i>	22,70	14,00	21,30	0,00	n/a
<i>Constant</i>	<i>B</i>	0,54	0,82	0,41	-0,90	0,67
	<i>S.E.</i>	0,59	0,61	1,03	1,06	0,25
	<i>Wald</i>	0,82	1,80	0,16	0,73	6,96
	<i>df</i>	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,36	0,18	0,69	0,39	0,01
	<i>Exp(B)</i>	1,71	2,28	1,51	0,41	1,96

	Index	SMI	FTSE	STOXX
	<i>Name</i>	<i>UBS and CS</i>	<i>UBS and HSBC</i>	<i>UBS and Vital Gestion</i>
<i>Constant Single</i>	<i>B</i>	-0,51	0,51	-0,82
	<i>Sig.</i>	0,04	0,04	0,00
	<i>Exp(B)</i>	0,60	1,67	0,44
<i>Goodness of Fit</i>	<i>Percentage Correct</i>	62,50	62,50	69,44
	<i>-2 Log likelihood</i>	n/a	92,05	87,78
	<i>Cox & Snell R Square</i>	n/a	0,04	0,01
	<i>Nagelkerke R Square</i>	n/a	0,06	0,02
	<i>Hosmer and Lemeshow Test</i>	n/a	0,48	0,75
<i>Return</i>	<i>B</i>	n/a	-10,96	-1,26
	<i>S.E.</i>	n/a	6,36	4,81
	<i>Wald</i>	n/a	2,97	0,07
	<i>df</i>	n/a	1,00	1,00
	<i>Sig.</i>	0,76	0,08	0,79
	<i>Exp(B)</i>	n/a	0,00	0,28

	<i>95% C.I. for EXP(B)</i>	n/a	0,00	0,00
	<i>Upper</i>	63,06	-4,50	-3,95
<i>Stdev</i>	<i>B</i>	n/a	-44,36	23,94
	<i>S.E.</i>	n/a	39,90	36,36
	<i>Wald</i>	n/a	1,24	0,43
	<i>df</i>	n/a	1,00	1,00
	<i>Sig.</i>	0,98	0,27	0,51
	<i>Exp(B)</i>	n/a	0,00	24,00
	<i>95% C.I. for EXP(B)</i>	n/a	0,00	0,00
	<i>Upper</i>	n/a	0,00	0,00
	<i>Constant</i>	<i>B</i>	-0,51	1,09
<i>S.E.</i>		0,24	0,57	0,61
<i>Wald</i>		4,40	3,61	3,90
<i>df</i>		1,00	1,00	1,00
<i>Sig.</i>		0,04	0,06	0,05
<i>Exp(B)</i>		0,60	2,97	0,30

Appendix 5: Tracking Errors of MIF



Appendix 6: Tracing Error (1), (2) and (3) for all Funds

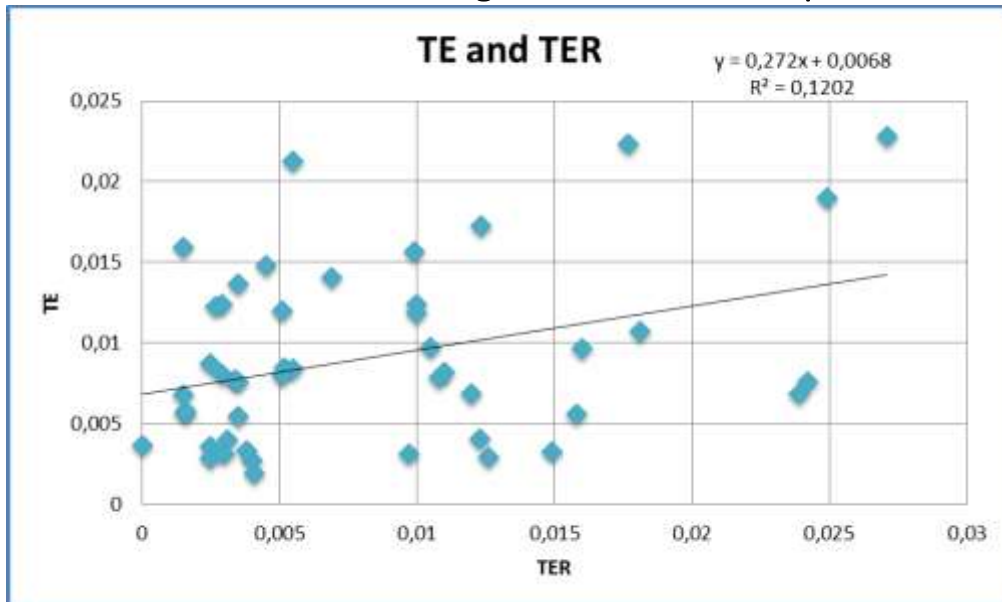
Name	Index	Type	TE (1) daily	TE (2) daily	TE (3) daily	TE (1) annual	TE (2) annual	Observations
SPDR	AEX	ETF	0,004	0,004	0,002	0,0691	0,069	1825
ISHARES	AEX	ETF	0,003	0,003	0,002	0,0538	0,054	1825
BNP PARIBAS	AEX	MIF	0,015	0,021	0,014	0,2663	0,371	1825
LYXOR	CaC40	ETF	0,003	0,003	0,001	0,0495	0,050	1825
AMUNDI	CaC40	ETF	0,004	0,004	0,002	0,0615	0,062	1825
ING.DRCT. LYXOR INTERNATIONAL	CaC40	MIF	0,016	0,023	0,016	0,2743	0,398	1825
NATIXIS ASSET MANAGEMENT	CaC40	MIF	0,015	0,017	0,010	0,2574	0,302	1825
MAM MEESCHAERT FCP	CaC40	MIF	0,011	0,011	0,003	0,1866	0,187	1825
STRATEGIE	CaC40	MIF	0,007	0,007	0,002	0,1158	0,119	1825
GESTION VALOR	CaC40	MIF	0,009	0,010	0,003	0,1584	0,168	1825
ISHARES	DAX 30	ETF	0,006	0,006	0,004	0,0927	0,094	1680
LYXOR	DAX 30	ETF	0,007	0,007	0,004	0,1103	0,114	1680
OPPENHEIM KPL.DAX WERTE	DAX 30	MIF	0,013	0,015	0,010	0,2220	0,258	1680
DT.POSTBANK ASTMGMT.DYM.	DAX 30	MIF	0,014	0,016	0,011	0,2310	0,274	1680
PIONEER INVESTMENTS AKTIEN	DAX 30	MIF	0,013	0,014	0,010	0,2125	0,245	1680
ISHARES	EURO STOXX 50	ETF	0,006	0,006	0,004	0,1002	0,101	1825
UBS	EURO STOXX 50	ETF	0,015	0,016	0,009	0,2558	0,278	1825
LYXOR	EURO STOXX 50	ETF	0,008	0,009	0,005	0,1459	0,152	1825
SPDR	EURO STOXX 50	ETF	0,012	0,012	0,009	0,2105	0,216	1825
DB X-tracker	EURO STOXX 50	ETF	0,004	0,004	0,001	0,0582	0,058	1562
INVERSAFEI BOLSA EURO	EURO STOXX 50	MIF	0,007	0,008	0,003	0,1296	0,137	1825
VITALGESTION	EURO STOXX 50	MIF	0,005	0,006	0,002	0,0902	0,098	1825
GESBANKINTER	EURO STOXX 50	MIF	0,003	0,003	0,001	0,0530	0,054	1825
DBV WINTERTH.FD.MAN.CO.	EURO STOXX 50	MIF	0,003	0,003	0,001	0,0505	0,051	1825
ING DIRECT	EURO STOXX 50	MIF	0,008	0,008	0,003	0,1329	0,142	1825
MORGAN STANLEY LBRTY.	EURO STOXX 50	MIF	0,007	0,007	0,002	0,1138	0,119	1825
UNION INVESTMENT LX	EURO STOXX 50	MIF	0,003	0,003	0,001	0,0560	0,057	1825
ETOILE GESTION OPPORTUNITES	EURO STOXX 50	MIF	0,016	0,019	0,013	0,2856	0,332	1825
KBC INDEX	EURO STOXX 50	MIF	0,004	0,004	0,001	0,0696	0,070	1825
UBS	FTSE 100	ETF	0,013	0,014	0,010	0,2291	0,234	1762
ISHARES DE	FTSE 100	ETF	0,011	0,012	0,007	0,1968	0,205	1762
ISHARES	FTSE 100	ETF	0,003	0,003	0,001	0,0461	0,046	1762
HSBC	FTSE 100	MIF	0,011	0,012	0,008	0,1845	0,214	1762
HALIFAX UK	FTSE 100	MIF	0,010	0,012	0,008	0,1782	0,207	1762
BBVA	IBEX 35	ETF	0,008	0,008	0,003	0,1280	0,131	1597
MORGAN STANLEY LIBERTY	IBEX 35	MIF	0,007	0,008	0,003	0,1171	0,132	1597
LYXOR	MSCI EUROPE	ETF	0,006	0,008	0,005	0,1048	0,127	1689
SPDR	MSCI EUROPE	ETF	0,006	0,008	0,006	0,1008	0,129	1689
VANGD. ADMIRAL SHS.	MSCI EUROPE	MIF	0,012	0,012	0,008	0,1995	0,216	1689
AMUNDI	MSCI EUROPE	MIF	0,008	0,010	0,006	0,1312	0,169	1689
SWISSCANTO CH	MSCI EUROPE	MIF	0,007	0,008	0,006	0,1168	0,146	1689
ISHARES	SMI - SWISS INDEX	ETF	0,007	0,008	0,005	0,1294	0,147	1825
UBS	SMI - SWISS INDEX	ETF	0,005	0,005	0,003	0,0935	0,095	1825
Credit Suisse	SMI - SWISS INDEX	ETF	0,003	0,003	0,002	0,0567	0,057	1825
CREDIT SUISSE CSA	SMI - SWISS INDEX	MIF	0,002	0,002	0,000	0,0325	0,033	1825
ISHARES	TECDAX (XETRA)	ETF	0,008	0,008	0,005	0,1386	0,139	1825
LUX EURO STOCK	TECDAX (XETRA)	MIF	0,016	0,022	0,016	0,2733	0,390	1825
Average ETF			0,007	0,007	0,004	0,116	0,122	
Average MIF			0,009	0,011	0,006	0,159	0,188	

Appendix 7: Total Expense Ratio t-test

Total Expense Ratio t-Test: Two-Sample Assuming Unequal Variances

	<i>MIF</i>	<i>ETF</i>
Mean	0,01058	0,0029
Variance	1,9E-05	2E-06
Observations	22	23
Hypothesized Mean Difference	0	
df	25	
t Stat	7,86414	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,70814	
P(T<=t) two-tail	0,0000	
t Critical two-tail	2,05954	

Appendix 8: Correlation Tracking Error and Total Expense Ratio



Addendum E

Text B, edited version

Summary

In recent years, the financial service industry demonstrated substantial growth of Exchange Traded Funds (ETFs). Apart from offering access to new and more specific investment opportunities, many ETFs enter ~~the~~ direct competition with conventional, already existing Mutual Index Funds. With 22,1% growth of assets over the past 5 years, ~~by now~~, the European market *by now* accounts for 19% of the global ETF market, while *in* the same time we observe a decline of cash flows to Mutual Index Funds.

Given the recent development, index investors are likely to face a choice between ETFs and Mutual Index Funds offering the same service. The purpose of this study is to analyze ~~these~~ two similar investment instruments towards the quality of achieving their objective, which is to deliver a performance as closely ~~as possible~~ to the respective benchmarks *as possible*. The analysis will be performed for the European market, i.e. *we include* only Index Funds that track European indices.

This study is guided by objectivism and positivism as ontological and epistemological positions. We *conduct* a deductive ~~research-study~~ by reviewing and testing previous findings through the *formulation* of hypotheses that serve our purpose. For our analysis we gather quantitative data in the form of daily prices for 21 ETFs and 22 Mutual Index Funds, tracking 9 European indices. We further use a time frame of 7 years (2006-2012), which we analyze as a whole as well as divided into sub-periods *as determined by different states of the European market*. As a basis for the analysis we calculate return differences and different measures of tracking risk.

Our results show that, *on average*, ETFs as well as Mutual Index Funds sufficiently replicate index performance with approximately the same level of tracking risk for both instruments. Furthermore, we see no significant impact of expected returns or index volatility on return difference. However, *looking at fees and tracking errors during recent economic turmoils*, we show that ETFs *first*, bear lower directly attributed costs and second are less affected by down markets than *Mutual Funds*.

Keywords:

Mutual index funds, exchange traded funds, tracking error, index replication, European index funds.

Kommentar [AB1]: Please note that two different ways of punctuating decimal numbers exist in English. Particularly in American English it is more common to use a full stop before a decimal place. However, I am not an expert with numbers and mathematics and your subject area may follow its own rules. If your literature uses commas, you are on the safe side using commas as well. Please just check again and should you make a change here, remember to do so with all decimal numbers throughout your entire document.

Kommentar [AB2]: It is not fully clear (at least to a layperson) what you mean here. Do you mean: now that the European market accounts for 19%, the cash flow is declining as well? Then it is supposed to be "at the same time".

If you mean that over the past five years, a decline in cash flow occurred while assets grew, the preposition "in" is in principle correct. However, in order to avoid obscuring the meaning of your sentence, you might just use an alternative and less ambiguous formulation such as "while a decline of cash flows to Mutual Index ...

Kommentar [AB3]: Development of what? Please specify.

Kommentar [AB4]: The apostrophe is only right if it refers to the performance of several benchmarks. In that case you might write "respective benchmarks' performance", just to help your readers. If you are only referring to several ...

Kommentar [AB5]: Referring to yourself in the first person could be criticized as slightly unscientific. You can circumvent such criticism using the passive form instead. However, you might want to check with your supervisor whether the ...

Kommentar [AB6]: Please see my comment "use of tenses" in your working document!

Kommentar [AB7]: Are you only going to formulate hypotheses, or are you also going to test them?

Kommentar [AB8]: In fact, the European market does not determine the sub-periods. Rather you determine them by dividing up the seven-year time span into sub-period "in a way such that different states of the European market are ...

Kommentar [AB9]: Slightly colloquial. Suggestion: "by examination of".

Kommentar [AB10]: "MF" exists in your list of abbreviations. If "MFs" is also a common way of abbreviating Mutual Funds, please consider introducing the abbreviation here in brackets after the term in order to be consistent. You have done ...

Kommentar [AB11]: Please check the orthography of these terms regarding capitalization of the first letters. In your text, for instance, you are constantly using a capitalized form for Exchange Traded Funds. If any of these terms are establish ...

Acknowledgment

Our deep gratitude goes to our supervisor who guided us through the entire research process by sharing with us her extensive experience and knowledge about academic writing in general and about the requirements of our university in particular. Her preparative advice at the beginning of this work, as well as ~~numerous~~ invaluable feedbacks throughout the different development stages were material to keep this thesis on track and provided us with constructive guideposts.

Kommentar [AB12]: Could be removed since in principle "preparative" already contains the notion of "beginning".

Kommentar [AB13]: Feedback is non-countable.

Kommentar [AB14]: Which statistics department?

We further ~~want-wish~~ to express our gratitude to P. from the statistics department, who spared a considerable amount of time ~~to-givinge~~ us technical advice for our analysis, and ~~due to~~with his expertise, helped us to enhance our statistical understanding.

Last but not least we thank our families, companions and friends for their motivating support and sympathy throughout this sometimes rather exhausting period. You helped us clear our minds and ~~to~~-restock energy to continue.

Kommentar [AB15]: That sounds a little melodramatic...

Thank ~~Y~~you!

May 24, 2013

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Kommentar [AB16]: You are using an inconsistent combination of capitalization and lower-case spelling of your headings. Please refer to my comment "Capitalisation of headings" in your working document.

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Kommentar [AB17]: We have the same problem here as in your headings / the table of contents: a mix of capital and lower-case first words (as for instance in your title for table 12 where you capitalize “overview” and “hypothesis”, but not “outcomes”. Please see also my comment “Capitalisation of headings” in your working document.

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Kommentar [AB18]: Please see my comment “Capitalisation of headings” in your working document.

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Kommentar [AB19]: Please see my comment "Capitalisation of headings" in your working document.

Table of Abbreviations

ABDC	Australian Business Dean Council
AP	Authorized Participant
ARD	Absolute Return Difference
CU	Creation Unit
cf.	confer
e.g.	Exempli gratia
et al.	et alii
etc.	et cetera

ETF	Exchange Traded Fund
i.e.	id est
IPO	Initial Public Offering
IWF	Investible Weight Factor
Logit	Logistic Regression
LPM	Linear Probability Model
MA	Moving Average
MF	Mutual Fund
MIF	Mutual Index Fund
MSCI	Morgan Stanley Capital International
MW	Market Weighted
OLS	Ordinary Least Squares
OR	Odds Ratio
OTC	Over the Counter
NAV	Net Asset Value
PACF	Partial Autocorrelation Function
REIT	Real Estate Investment Trust
S&P	Standard & Poor's
SEC	Security and Exchange Commission
SPDR	Standard & Poor's Depository Receipt
TE	Tracking Error
TER	Total Expense Ratio
UCITS	Undertakings for Collective Investments in Transferable Securities
UIT	Unit Investment Trust
USB	Umeå School of Business

1. Introduction

Throughout this chapter we will give a general introduction to the subject and problem driving this thesis. We formulate our research question which serves as the basis for our research and clarify its purpose and contribution. We further identify a target community of interest and set limits to the scope of this study. After a graphical replication of the research model which provides an at-a-glance overview of the chosen approach, we conclude with definitions of the most important terms we used in this study.

1.1. Problem Background

In recent years the development of exchange traded funds (ETFs) increased substantially, and the trend continues despite financial troubles caused by a subprime mortgage crisis in the U.S. and by the recent economic instability in the European Union. The reasons for this growth are mostly frequently identified to be the low cost of investing and significant diversification effects which appear available by means of gaining exposure to a broad variety of markets, which in many cases were difficult to access in the past. Furthermore, the growing importance of transparency triggered by the financial crisis benefits ETFs the development of ETFs; since ETFs are publicly traded, disclosures are rather strictly regulated and in most cases easily accessible for everyone. There are now more than 3000 different ETFs all over the world, offering exposure to traditional asset classes such as large-cap U.S. stocks, U.S. Treasury bonds, real estate investment trusts (REITs) and international equities. With an invested asset level amounting up to more than \$1.4 trillion by January 2013, the U.S. represents the biggest largest market for exchange traded products, while Europe follows with \$387.5 billion of assets (BlackRock, 2013, p. 6). When it comes to Regarding the number of listed products, Europe led with 2.132 before the U.S with 1.446 listings (BlackRock, 2013, p. 6). Comparing the compound annual growth rate for both regions, last October's BlackRocks' report shows that over the previous past five5 years, Europe ETF assets grew by 22,1% (compared to 16,3% in the U.S), which makes Europe account for 19% of the global ETF market (BlackRock, 2013, pp. 16, 21).

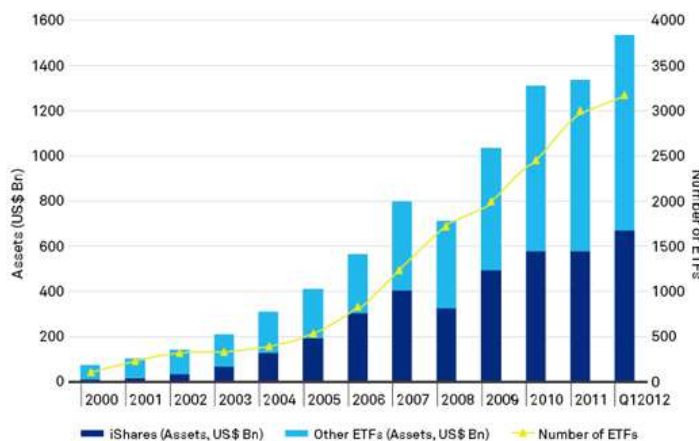


Figure 1: Growth in ETF-s over time worldwide. (Source: iShares, 2012)

As mentioned above, ETFs offer unique investment opportunities to private investors, not only due to their unique tradability, but also in a way that they provide access to very specific market products, which are otherwise difficult to obtain. This is achieved through low fees,

Kommentar [AB20]: If the subject and the problem are two different things, please define which subject you mean. Perhaps the subject area of finance?

If subject and problem are the same thing it is enough and less confusing if you just write "to the problem".

Kommentar [AB21]: Contribution to what? Please specify.

Kommentar [AB22]: This is possible, however a little clumsy. If you use this construction, however, you need to hyphenate it since it works as an adjective. Alternative suggestion: "a compact overview".

Kommentar [AB23]: Clumsy sentence, very difficult to follow with the two "which" constructions. I made a smaller correction to simplify your formulation, but it is still not clear whether the first "which" in your sentence refers to both reasons of growth or only to diversification effects. Apart from that, I cannot understand what you mean with "appear available by means of gaining exposure". What exactly is exposed to a broad variety of markets? Unfortunately I cannot solve the problem for you because I lack the necessary subject knowledge. Please try to divide the information up into two or three sentences and clarify what relates to what. It also often helps to just use a less complex formulation as I have done with my correction in the first part of your sentence.

Kommentar [AB24]: Has that changed again? If Europe is still the leader, please use present tense!

Kommentar [AB25]: Please revise your punctuation with regard to decimal places. You are using points here and commas two lines below. I urgently recommend you to stick to one way of punctuating numbers in order to avoid confusion. Please also see my comment AB1.

Kommentar [AB26]: Please do not forget to make the same correction in your table of figures.

For a general comment on captions of figures and tables, please see my comment "Captions and sources to figures" in your working document.

high transparency and the exchange traded component. Thus, exchange traded funds highly contribute to the popularity of index investment among private investors. As a subclass of index funds, the main objective of ETFs is ~~via accurate replication~~, to achieve the same performance as an underlying index (SEC, 2010a) through accurate replication. Therefore ETFs coexist with the more conventional mutual index funds, as both follow the same objective by using a different approach.

The Security and Exchange Commission (SEC) includes both fund classes in ~~their-its~~ description of index funds. Even though Mutual Funds (MFs) are usually actively managed, when classified as index funds, the SEC describes the management as more “passive” than ~~that of~~ non-index funds, as the tracked portfolio of securities is rather fixed for index funds (SEC, 2007). ~~MF-~~The peak development of MFs was during the 1990sth, when the growth rate of this investment vehicle was around 22 percent in the U.S. as well as in many other countries around the world. The growth in MFs appeared simultaneously with the high growth in stock markets, increasing capitalization and the expanding presence of large multinational financial groups. (Klapper, 2004, pp. 1-2)

Mutual funds offer investors the advantages of portfolio diversification and professional management at low cost. One of the distinguishing features of mutual funds is a high level of operational transparency relative to other financial institutions, such as banks, thrifts, insurance companies and pension funds that also cater to the needs of households. For simplicity's sake, ~~throughout this paper~~ when ever referring to mentioning mutual funds throughout this paper, we relate are referring to the class of mutual index funds (MIFs) if not else-indicated otherwise.

Although conventional MFs represent an important financial instrument, ~~nowadays~~ the trend is nowadays changing towards ETFs, as they start to dominate over MFs in number and usage (Sharifzadeh & Hojat, 2012). The trend is well illustrated by the \$206 billion redemption of MFs flows in 2012, while ETFs had inflows of \$262,7 billion (BlackRock, 2012, p. 4). *Figure 2* shows the development of ETFs and MFs on developed markets for the year 2012. This dynamic represents an interesting phenomenon as both, index-based mutual funds and ETFs which also aim for index replication represent the same family of investment instruments.

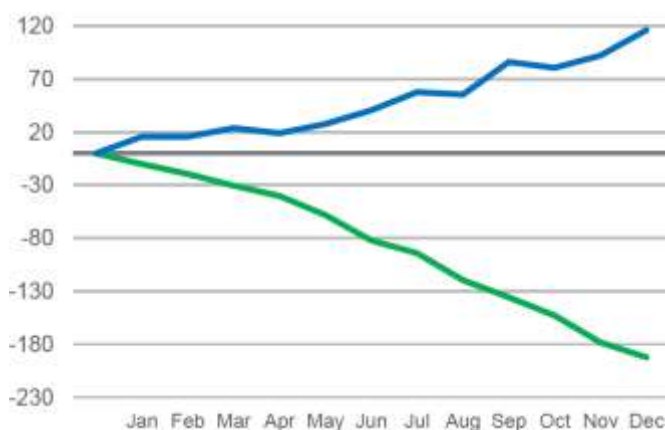


Figure 2: ETFs (blue) and MFs (green) cash flows for developed market equity
Source: (BlackRock, 2012, p. 8)

Kommentar [AB27]: Please note: there is an inconsistency in your entire thesis with regard to the punctuation around sources which are given at the end of paragraphs. Please see my comment about punctuation around sources in your working document.

Kommentar [AB28]: Please check the spelling of this term. You alternate capitalised first letters with lower-case spelling, i.e. Mutual Funds versus mutual funds. This is unnecessarily confusing. I suggest that you opt for whichever form is more commonly used and use that form consistently in your thesis. Please do the same for EFTs and for all other subject-specific terms. In order to make a change throughout your whole document, remember that the “search & replace” function is very helpful.

Kommentar [AB29]: If this refers to EFTs only, a comma must be placed after “EFTs” and after “replication”. If this refers to EFTs as well as index based mutual funds, no commas are necessary.

As mentioned above, ETFs and MFs are similar in nature; however, the growing demand for ETFs indicates that the usage of mutual funds might continue to decline. Explaining this trend has recently raised a lot of attention. A frequently asked question ~~therefore is therefore~~, whether ETFs “outperform” mutual funds in index tracking and ~~therefore thus~~ keep earning market shares. If ~~this is the case~~, one ~~might~~~~could~~ wonder how the coexistence between both models is justified.

Kommentar [AB30]: Has the phenomenon been fully explained yet? Otherwise you could write “Attempts to explain this trend have...”

Given that both mutual index funds and exchange traded funds are index trackers, following a passive strategy, they should always have an advantage over actively managed funds regarding costs of operation. And yet, considering fee adjusted returns, the tracking error between underlying index and index fund deviates across the index fund landscape. Frino and Gallagher see the ~~main cause~~ in the different assumptions that underlie an index and those underlying an index fund. While the index is a theoretical construct that can adopt changes in the portfolio due to market frictions without costs, the index fund is holding a physical portfolio which leads to the occurrence of transaction costs when the benchmark’s constituents change (Frino & Gallagher, 2001, pp. 3-4). Chiang (1998, p. 308-309) states the same problem and further names dividend treatment, uninvested fund cash and the volatility of the stock market as factors that increase the magnitude of the tracking problem. Given such discrepancies, Chiang ~~explains~~~~describes~~ the goal of exactly matching the benchmark index’s performance ~~as~~ “elusive and probably unattainable” (1989, p. 309).

Kommentar [AB31]: A certain difference in style compared to the sentences before. Please double-check whether you have used the words of a source here but forgotten to reference the source.

Kommentar [AB32]: The main cause for what? For the fund deviations? Please specify.

Therefore, the main objective of index fund management should be ~~to~~ ~~achieving~~ the same performance in terms of returns and volatility compared to the index and minimization of the evolving tracking error while minimizing transactions costs in the same time in order to track the target index as ~~close~~~~ly~~ as possible and thus stay competitive (Agapova, 2011, p. 329).

Kommentar [AB33]: Critically long sentence. Try to split.

1.2. Research Question

Based on the problem background above we define our research question as the foundation for the following research:

Do Exchange Traded Funds replicate the Performance of European Indices better than Mutual Index Funds?

Kommentar [AB34]: Is that a proper name? Otherwise only “European” would be capitalised.

Sub-questions:

1. *Is tracking quality correlated with the states of the European financial markets?*
2. *Is there a difference in fund costs?*

In order to answer the research question, we compare benchmark performance to fund performance by analyzing returns and a number of common quality indicators as well as the strength of their impact on the tracking quality of our sample. Therefore we formulate hypotheses which will be answered using ~~fitting~~~~appropriate~~ statistical tests.

1.3. Research Purpose

The purpose of this paper is to seek an understanding for the coexistence of the two very similar investment instruments, Exchange Traded Funds and Mutual Index Funds. Our goal is, by the end of our research, to be able to present evidence on whether there is a difference in **tracking** performance between the two investment fund models over a given time period. If there is no significant difference, ~~we want to find out~~ which factors distinguish both types from one another. Therefore, we focus on index funds whose single objective lies in reflecting

Kommentar [AB35]: Colloquial. Alternative suggestion: “we intend to determine”.

the performance of a specific European index. It is important for the reader to note that we are not comparing the actual performance of both fund types and the benchmarks, but the level of accuracy they achieve in reflecting the index performance at any given point in time.

A ~~C~~omparison of the respective index fund with its underlying index using different tracking quality measures and a time frame over the ~~l~~past 7 years (2006 to the end of 2012) will provide us with the necessary evidence ~~in order~~ to draw a conclusion on ~~first~~, whether the respective tracking strategy is sufficient to provide investors with the index's performance, and ~~second~~ if, due to tracking differences, one of the strategies is superior to the other. Since both fund models represent very similar products, we investigate possible differences in fee distribution to ~~find work~~ out if either ~~one~~ of them has a cost advantage.

Kommentar [AB36]: Perhaps rather: "provide investors with information about the index's performance"?

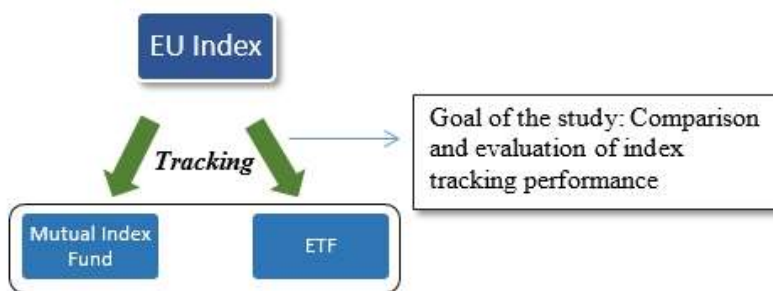


Figure 3: Theoretical Framework (Source: own design)

We further divide the time period under investigation in several sub-periods to account for different market conditions and their effects on the respective index. ~~Doing so~~. In that way we focus on major events during the past ~~7~~seven years ~~such as~~ the financial crisis in 2008 and, since we have an exclusive focus on the European market, the recent European crisis.

Kommentar [AB37]: Please note: usually numbers up to ten are written out.

The results will be discussed against the background of already existing knowledge from previous studies, which mainly focused on the U.S. market or on ~~separate~~ analyses of the two investment companies ~~separately~~.

Kommentar [AB38]: Which two investment companies?

1.4. Research Gap and Contribution

There are numerous scientific articles and working papers examining the characteristics of different index fund strategies. ~~The C~~omparison of structural differences with a focus on different markets resulted in an extensive amount of knowledge about index tracking as investment alternative. ~~A particular emphasis~~ In recent years, ~~particular emphasis~~ has been put on ~~the a~~ rather new investment instrument — exchange traded fund. Nevertheless, around a decade after the rapid growth of ~~the~~ ETF industry ~~has~~ started, there are still many open questions regarding their coexistence ~~of~~ ETFs with mutual funds.

Kommentar [AB39]: Capitalise?

Our review of previous literature on the topic ~~showed~~ that there has been comparative research between ETFs and mutual funds with distinct focus on structural differences, management fees and trading characteristics. Surprisingly little research was found, ~~dealing with~~ about the actual tracking performance differences of a matched sample of mutual index funds and ETFs. ~~An often argued~~ recurrent problem in ~~previous existing~~ literature is the lack of data for the relatively new investment vehicle ETF, which ~~makes it hard to find a~~ sufficient set of observed returns to compare to mutual index funds returns, ~~which that~~ track the same index. Matching mutual index funds with ETFs in order to compare their performance relative

Kommentar [AB40]: Perhaps rather "confirmed" or "demonstrated"?

Kommentar [AB41]: A little colloquial. Alternative suggestion: "which complicates the search for".

Kommentar [AB42]: Sufficient in what sense? Sufficiently large? Or sufficient regarding reliability?

to the benchmark index from 2001 to the end of 2002, Rompotis ~~ended up with~~ 16 index-pairs tracking several U.S indices (Rompotis, 2005). A similar ~~study research done~~ by Agapova, ~~has~~ investigated the substitutability of conventional index funds and ETFs between 2000 and 2004, by comparing their performance relative to the index. Focusing on U.S. emitters and U.S indices, she gathered 11 index fund pairs, which tracked the same index (Agapova, 2011). Research using a higher quantity of data and a longer time period (2002-2010) was performed by Sharifzadeh and Hojat. ~~Longing-Striving~~ for high generalizability and facing a shortage of matching ETFs with sufficiently long inception dates, they decided to match the index funds according to their investment styles. Yet again, the focus was on the U.S market (Sharifzadeh & Hojat, 2012). A decade after the ETF boom in the beginning of the 21st century, we see the demand and opportunity to tie in with, and extend previous research by using the recent state of data availability.

Kommentar [AB43]: Colloquial. Perhaps "extracted"?

Throughout this thesis we investigate performance behavior of conventional index funds and ETFs matched by the same underlying indices. We distinguish our work from previous research by exclusively accounting for European indices and therefore create new implications for index investments within the European markets. Furthermore, we use a sufficient time frame of 7 years to be able to build sub-periods which will help to investigate performance behavior during different economic conditions.

Kommentar [AB44]: Perhaps rather "conditions of the economy" or "conditions of the market"?

The outcome of this research will provide new implications for private investors who haveing or considering investment in European indices by making use of index trackers. After considering individual preferences and investment goals, our findings add important knowledge to the field to help informed to make a decision-making between two rather substitutional investment vehicles. Looking at different time periods furthers the understanding of how the two fund classes are affected by different market conditions. As contribution to the "mutual index funds vs. exchange traded funds" debate, investors as well as emitters gain new knowledge about the two coexisting fund classes and their right to exist side by side. Emitters might also use our findings as a point of departure for further investigation of the tracking performance of the respective instrument on which to base future launches of index funds on.

Kommentar [AB45]: A little colloquial. Alternative suggestion: "An analysis of".

Kommentar [AB46]: I think quotation marks without italics would be enough.

Finally, researchers may use our findings to incorporate them in future research on the subject. Further research suggestions given at the end of this paper should serve as an impulsion-impetus and food for thought providing different ideas on how to extend the scientific knowledge on of the field.

Kommentar [AB47]: This part of the sentence is clumsy and it is unclear what "on which" relates to. Technically, it could refer to "findings", "point of departure", "investigation" or "instrument". Please try to reformulate and clarify the relationship of this clause with the rest of your sentence.

1.5. Delimitations

Our analysis compares the performance of index tracker funds with the performance of their underlying index. ~~In doing so we~~ Our focus lies on open-end fund strategies in the form of mutual index funds and exchange traded funds. We intentionally exclude other investment objectives than index tracking and other fund types such as closed-end funds, as we particularly ~~want-intend~~ to examine the relationship between these two ~~those-much-closely~~ related investment instruments and the implications of their coexistence.

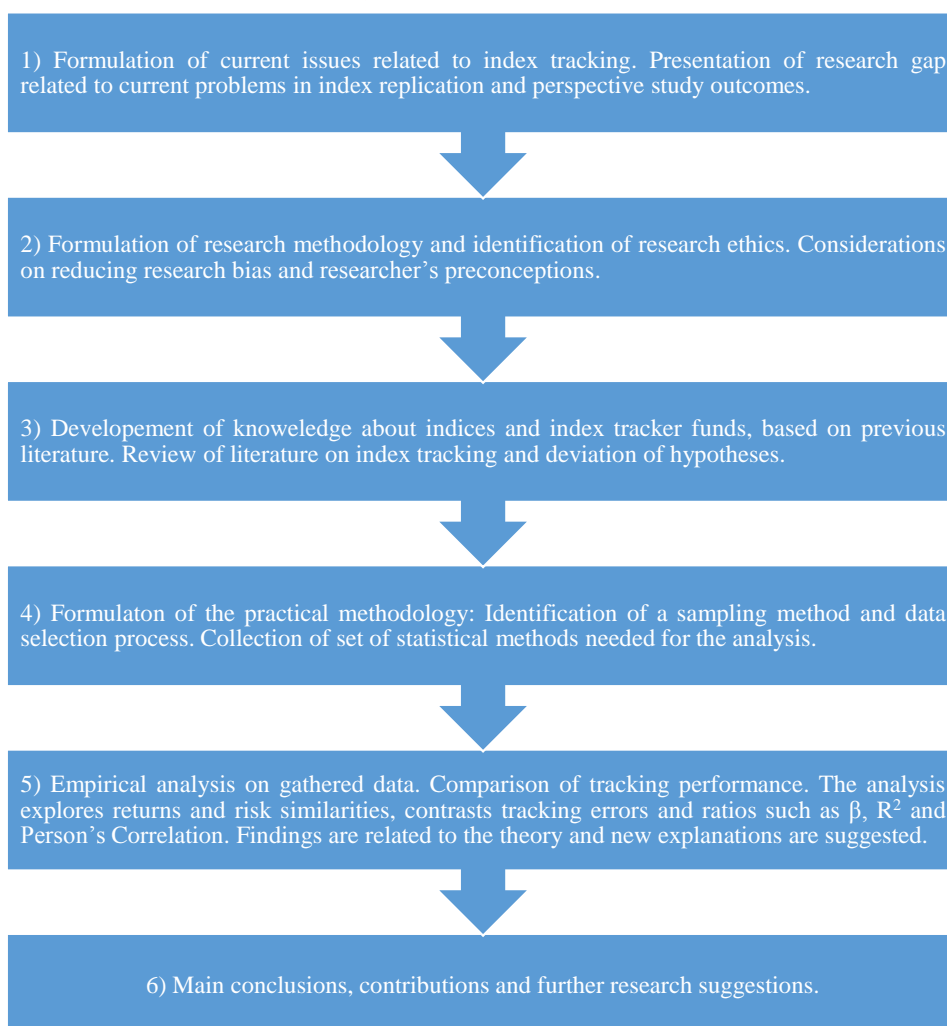
It is once again important to notice, that we are not trying to find better performance in terms of higher returns given minimum volatility between mutual index funds and ETFs, but that we are trying to measure the quality of index tracking, which is achieving similar returns and volatility in comparison to the benchmark index.

To be able to accurately compare fund performance to index performance, we do not include actively managed or institutional funds but only use returns of passively managed retail funds, which are available to private investors and whose main objective is to minimize the tracking error and not to outperform the index.

Other than most of the ETF related researches which is focusing on the U.S. market, we only look at focus on European index trackers. Due to data availability constraints, we limit our time frame from 2006 to the end of 2012. However, we believe that this time frame is sufficient to achieve representative statistical results.

We will make use of findings from previous literature to discuss our results and possible causes for the relationship found in our study. It is, however, not within the scope of this thesis to empirically investigate the magnitude of all possible factors that have an impact on the tracking quality of our sample, but we focus on a selection of previously found variables that we consider to be most interesting to investigate.

1.6. Structure of the Research



Kommentar [AB48]: "Interesting" has a subjective undertone. It is not wrong as such, but a critical reader might like to know which variables these are and why you chose them as most interesting variables. If you elaborate on this later on in your thesis you might include a reference to that section here. If this choice is not further explained later on, please consider including a paragraph or two in which you clarify your particular interest in your selection of variables.

Kommentar [AB49]: Corrections for your figure:
 2) correct placement of the apostrophe: researchers' preconceptions
 3) no comma after "funds". Please also change "development" to "development" and "knowledge" to "knowledge".
 5) What means "person's correlation"? I suppose you are not talking about one person only. So it would rather be people. However, I am not sure what you are trying to say here. Please clarify.
 6) Contributions to what?

Figure 4: The research model. (Source: own design)

The figure 4 above summarizes the structure of our research. First, we will introduce the background of the research, present current research gaps and develop the goals of the study. Second, methodological stances and ethical views will be established. Third, literature will be reviewed and necessary-vital theories will be gathered on which we build our hypotheses. Fourth, necessary data will be identified and collected in order to test the hypotheses. Next, we shall study the gathered data in order to obtain comprehensive characteristics. The results will be examined, and observed patterns will be discussed in connection to previous research. Finally, the main results and contributions will be summarized, and ideas for further research are going to be presented.

Kommentar [AB50]: A slightly more formal term would be "objectives".

1.7. Important Definitions

Mutual Fund (MF) is an investment company that is made up of a pool of funds collected from many investors for the purpose of investing in securities such as stocks, bonds, money market instruments and similar assets. Mutual funds are operated by money managers, who invest the fund's capital and attempt to produce capital gains and income for the fund's investors. A mutual fund's portfolio is structured and maintained to match the investment objectives stated in its prospectus. MFs can be described on the basis of by common features like: such as

- When investors deal directly with the mutual fund or through the broker for the fund. It is not possible to purchase the shares from secondary markets (i.e. from stock exchanges). The price of the share is based on the net asset value (NAV) per share and the fees a fund may charge at purchase (e.g. "front load").
- MF shares are redeemable, thus they could be sold back to a fund or a fund's broker, at a price of NAV minus fees such as "back load".
- There are many varieties of MF including index funds, stock funds, bond funds, etc.
- MF could be actively and passively managed. Actively managed funds usually try to beat a chosen market benchmark. The goal of passively managed is to stick to a chosen portfolio over a period of time. (Elton et al., 2010, p. 35; SEC, 2010b)

Kommentar [AB51]: If you start the list with "such as", you should try to build your bullet sentences in a way in which they connect to this introductory part in such a way that every of the bullet sentences forms a full sentence together with the introductory clause. Alternatively, you could write "MFs can be described on the basis of common features some of which are given in the following bullet list." If you have a full sentence leading to your list of features, you can leave the list as is, apart from the small changes suggested in the following comments.

Kommentar [AB52]: This is not a complete sentence. Try to reformulate.

Kommentar [AB53]: I would use the same form as above with the brackets just for the sake of consistency and ease of reading.

Kommentar [AB54]: Is there any particular reason why you are using italics?

Kommentar [AB55]: The hyphen is wrong here since you are not hyphenating two words. I think you meant to use a dash, which is, however, not necessary since you have a full sentence here. The same applies to the two subsequent definitions.

Active management (*also active investing*) is a strategy of portfolio management which aims to beat the benchmark through effective operational activity. (Elton et al., 2010, p. 699)

Passive management (*also passive investing, passive indexing*) - is the opposite of active investing, where managers have to make as few decisions as possible to minimize transaction costs. Usually, such a strategy is chosen for tracking indices (Fuller et al., 2010, p. 35).

Index Fund (IF) (*also Mutual Index Fund (MIF), conventional index fund*) - is a sub-classification of mutual funds. Its main goal is to deliver returns as closely as possible to the returns of a selected index, e.g. CAC 40 (an index tracking the 40 largest and most liquid companies traded on the Paris stock exchange). Mutual index funds usually adopt a passive management style, because managers of such funds only need to mimic the chosen index performance and not to outperform it. Such funds are commonly used by investors to gain high exposure to a specific market with low costs. (Abner, 2010, pp. 26; Anderson & Born, 2010, p. 75; Elton et al., 2010, pp. 701, 697)

Exchange-Traded Fund (ETF) is a newer type of Investment Company. ~~Although, Even though~~ there are many different types of ETFs, most ETFs seek to achieve the same return as a particular index. This is accomplished with a passive way of management (cf. index funds and passive management). ETFs are legally classified as either Unit Investment Trusts or open-end companies (same class as mutual funds), but they differ from conventional MFs in the following ~~are~~ aspects:

- Investors usually sell and buy ETF shares on the secondary market (i.e. stock exchange).
- ETFs generally redeem shares by giving investors the securities ~~that~~ which comprise the portfolio instead of cash. Thus, an ETF invested in the stocks contained in the Nikkei 225 index would return the actual securities included in Nikkei 225 instead of cash. Because of the limited redeemability of ETF shares, ETFs are not considered to be and may not call themselves mutual funds. (Abner, 2010, pp. 6–10; SEC, 2010a).

Leveraged ETFs (also *Enhanced Index Fund (EIF), Active Index Fund*) ~~—differ from traditional IF as they are actively managed.~~ This approach causes relatively higher fees. Active ETFs expect to gain extra returns by making use of leverage, short selling and derivatives. However one should consider the high level of risks associated with such kind of investing. (Abner, 2010, pp. 26; Leveraged ETFs, 2009)

1.8. Disposition

Chapter 1: Introduction

Throughout this chapter we gave a general introduction to the problem driving this thesis. We formulated our research question ~~which serves as the basis for this research~~ and clarified its purpose and contribution. We further identified a community of interest and set limits to the scope of this study. After a graphical replication of the research model, ~~which provides an at a glance overview~~ a compact overview of the chosen approach, we concluded with the definition of the most important terms used throughout this study.

Chapter 2: Theoretical Methodology

We start the second chapter with introducing the reader to the educational and cultural backgrounds of the authors, and proceed with a reproduction of our theoretical methodological choices. ~~I.e. We~~ We motivate the chosen research philosophy, research approach, method of inquiry and research strategy. After a critical evaluation of our sources, we conclude with addressing important ethical considerations.

Chapter 3: Literature Review

Throughout the third chapter we give an insight into the characteristics of the two different types of investment companies we aim to compare with one another. Furthermore, we introduce important terms and definitions that we make use of throughout this paper. Among other aspects, we discuss the calculation of return differences, tracking error and indices, ~~as it was covered in previous literature~~. We conclude our literature review with a selection of relevant findings published by other researchers that ~~are we find to be~~ connected to our research purpose and form an appropriate base for our hypotheses ~~on~~.

Chapter 4: Practical Methods

In Chapter 4 we motivate ~~the our~~ choice for of a sampling method and reproduce our data collection. We further explain how we split our time frame (2006-2013) into smaller sub-periods for more detailed, timely investigation. After a statistical restatement of our

Kommentar [AB56]: Here a dash (but no hyphen!) would work because you have no full sentence here. The verb “is”, which you used in the three other definitions above, can be replaced by a dash here. You should see that you use the same form for all four definitions, i.e. either you use a full sentence without a dash, or a dash in all four definitions, but then leave out the verb after the dash. The decision is yours but you should use either option consistently. This also accounts for the definition of Leveraged ETFs below.

Kommentar [AB57]: Is this jargon? Otherwise, ETFs cannot expect something; only people or perhaps animals can expect things. Perhaps rather “are expected to gain” or “can be expected to gain”?

Kommentar [AB58]: Is there any particular reason why this section is written in italics? I find it rather disturbing than helpful since it gives the impression that these paragraphs are not really part of your study. In fact, they are part of your paper just as well as any other paragraph.

Kommentar [AB59]: Actually, you still give that introduction; the chapter is still existent. Please refer to my comment “use of tenses” in your working document.

Kommentar [AB60]: This is clear. The research question always forms the basis of a research project.

Kommentar [AB61]: Previous to what? Previous to your research? If we wanted to be grammatically correct, we would have to write “literature that was written previously” or “previously written literature”. That sounds, however, a little clumsy. I would rather suggest you to write “previous research”. “Previous literature” occurs a number of times in your thesis. Please consider revising all occurrences throughout your paper!

Kommentar [AB62]: Please be careful with your time frame. Further above you state your testing period as ranging from 2006 to 2012. Please just make sure you do not confuse the reader!

~~h~~Hypotheses, we develop the basis for our empirical analysis by introducing all relevant statistical methods and tests we ~~made use of~~applied. ~~and~~ We conclude with a discussion on how we assure measurement quality.

Chapter 5: Empirical Results

Throughout chapter 5 we will first present and describe our sample data using descriptive statistics. Calculating descriptive statistics provides us with the necessary data to answer the first two hypotheses. We then report the results of our analysis regarding Tracking Errors and Expense Ratios and, based on the results, answer the remaining hypotheses and discuss them respectively in relation with ~~previous~~the literature ~~as~~ reviewed in ~~C~~chapter 3. We conclude the chapter with a brief summary of our hypothesis outcomes.

Chapter 6: Conclusion

In the last chapter we restate and answer our research question from ~~e~~Chapter 1. We base the answer of the question on the findings ~~as~~discussed throughout ~~e~~Chapter 5 and draw a conclusion about how the research purpose was fulfilled and what ~~are~~the main contributions of this paper ~~are~~. We end with ~~some~~a number of interesting recommendations for further studies ~~that~~which connect to our research and would pick up on ~~the~~our delimitations of our study.

Kommentar [AB63]: Contributions to what?

2. Theoretical methodology

We start the second chapter with introducing the reader to the educational and cultural backgrounds of the authors, and proceed with a reproduction of our theoretical methodological choices. ~~I.e.~~ ~~we~~ motivate the chosen research philosophy, research approach, method of inquiry and research strategy. After a critical evaluation of our sources, we conclude with addressing important ethical considerations.

Kommentar [AB64]: Not the topic as such may be influenced, but rather your decision-making in your research process. Please revise.

Kommentar [AB65]: You will rather make decisions in terms of your approach to the topic, but not about the topic as such.

2.1. Pre-understanding

Our research topic ~~could~~might be influenced by our own background, experience and knowledge, which can result in particular decision making regarding the ~~topic~~, methodology, selection of theories, data analysis methods and choice of literature for review (Bryman & Bell, 2007, p. 429). ~~In order to evaluate any business research it is important~~A business research project such as our thesis is, however, only veritable and evaluable if the danger of subjective influence is under control. ~~that~~One way of minimizing such influences is an explicit description of the ~~its~~ methodology is well described of the projected study (Bryman & Bell, 2011, p. 7).

Kommentar [AB66]: I reformulated this sentence so that the focus lies on the idea that a possible way to minimise the problem of subjectivism is a proper description of the methodology. What you wrote here is not wrong, it only might not become clear for the reader that the second sentence is actually the solution to the problem in the first sentence. This is only a suggestion for a better information flow.

Kommentar [AB67]: Possible influences or your preconceptions? Please clarify and consider that preconceptions may be of a certain rigidity and not easily changeable. I suppose you are rather talking about reducing subjective influences on your study...?

Preconceptions

We are aware of possible influences on the research caused by our preconceptions; ~~thus~~ we aim to reduce ~~them~~ as much as possible by identifying them and discussing our background in relation ~~with~~to our research methodology. Regarding our research topic we take a neutral position as none of us has any ~~historically~~ affective relation to the subject of matter. Our main goal therefore is, to conduct a true and unaltered research resulting in findings that can be used by the target audience ~~within the defined borders~~, and thus ~~to~~ contribute to research in a productive manner.

Kommentar [AB68]: And perhaps also by describing your methodology well, as suggested by Bryman & Bell?

Kommentar [AB69]: Sounds a little awkward. Perhaps "none of us is personally affected by the subject matter in any way besides this research project"?

Kommentar [AB70]: Which borders and where are they defined? Perhaps clarify, or even leave this out.

Researchers' background

Kommentar [AB71]: Suggestion: "Background of the Researchers".

We, the authors of this thesis, come from different countries – Germany and Ukraine. We ~~are~~ both ~~study-enrolled in~~ the two-year Master’s program in Finance at ~~the~~ Umeå University. Our interest towards ETFs developed ~~throughout-over~~ time ~~as~~since we both see them as a financial vehicle with growing demand. We both aim to advance our understanding ~~for-of~~ this very important and popular investment instrument. ~~In-particular-w~~We are ~~particularly~~ interested in the co-existence of two ~~so-similar~~ financial instruments ~~of such great similarity~~ as Exchange Traded Funds and Mutual Index Funds. Similarly, we both strive for international experience and thus pursue our graduate studies in a foreign country. This thesis offers us the opportunity to extend our ~~knowledge in~~ financial studies as well as to improve our ~~ability-to~~skills in conducting quality research in English. We do not see our different cultural and experiential backgrounds as a drawback, but ~~much-morerather~~ as an opportunity to diversify our perspective on the subject matter and to raise ~~an-even-more~~ multilateral discussion throughout ~~the-work-in-our~~ working progress as well as about our results.

2.2. Research Philosophy

One of the main dominants of a proper study is the determination of philosophical stances related to the ~~flow~~ of the research. ~~The understanding of them~~, while performing the research is ~~an advantageously~~ for us, ~~the-as~~ researchers, as it will help us to develop knowledge around the chosen phenomenon, highlight limitations and produce an adequate scheme for the research (Saunders et al., 2009, p. 108). ~~In-addition~~, Huff (2009, pp. 100-110) refers to ~~the~~ research philosophy as ~~a~~ beneficial tool, which ~~would-can~~ enhance argumentation, trustworthiness and quality of the research framework. Further, Grix (2002, p. 175) identifies ~~research aesthetic~~ as “building blocks” which help students to structure research and ~~to~~ conduct a thorough study in accordance with the scientific practices pertaining to the methods chosen and ~~to~~ presenting the results in accordance with the ontological and epistemological foundations of the theoretical perspectives employed.

In addition, research philosophy could provide in-depth information for a reader, who is familiar with ~~the research philosophy~~, as it provides ~~argumentation of research flow~~ and will help other researchers ~~into~~ the direction of similar studies (Huff 2009, pp. 100-110).

2.2.1. Ontology

Ontological assumptions will evaluate our positions towards ~~the being of knowledge~~. Huff (2009, p. 108) states that ontology describes the ~~existing~~ nature of ~~surrounding~~ phenomena. In addition, ontology is usually presented as the starting point of a research, because it structures the understanding of the world’s functionality (Grix, 2002, p. 177).

There are two main approaches in ontology: *objectivism* and *subjectivism* (Saunders et al., 2009, p. 110). The main ~~reasoning-behind~~idea of *objectivism* is that social entities exist independent of social actors. ~~Such a~~ view from the financial studies perspective, implies that investment products follow ~~an~~ organized “hierarchy”. Moreover, financial organizations operate in an organized way too, and people perceive them with common routine (Saunders et al., 2009, p. 110). The opposite of objectivism is *subjectivism*, or also called *social constructionism*. ~~It~~ implies that a social phenomenon is created via perceptions and actions of social actors (e.g. managers), which is a continuous process and thus existing knowledge is revised constantly. The ~~subjectivist~~ position is usually ~~followed by~~ the interpretivist position of epistemology, because both stances see ~~the~~ reality from the perspective of individual social actors. This idea entails that ~~the~~ researched dilemma ~~cannot~~ be adequately measured using

Kommentar [AB72]: Rather “procedure”?

Kommentar [AB73]: Perhaps rather the identification with than the understanding of a particular perspective?

Kommentar [AB74]: Switches rather abruptly to another topic. What is the difference/relation between research philosophy and aesthetic? Are they synonyms or two different concepts? Not clear in your text!

Kommentar [AB75]: Very long sentence and difficult to read. Please try to split or shorten.

Kommentar [AB76]: What do you mean here? This sentence is not entirely clear. Please try to clarify.

Kommentar [AB77]: Not clear. Do you mean your position with regard to existing knowledge?

Kommentar [AB78]: Do you mean “the nature of existing phenomena”?

Kommentar [AB79]: Surrounding what? Do you mean “phenomena surrounding us”?

Kommentar [AB80]: Are you quoting a source here? If you do, please cite the source. If you are not quoting, omit the quotation marks.

Kommentar [AB81]: The implication of this concept to the financial studies perspective does not become clear to me. I am not familiar with finance, so if you are certain that an expert in the field will understand what you are saying, okay. Otherwise, this might need a little more explanation.

Kommentar [AB82]: Perhaps rather “combined with” or “linked to”?

Kommentar [AB83]: Contractions are too informal for scientific writing on this level and are not popular among examiners. Please make sure that you always use the full form rather than a contracted form.

just objective analysis (e.g. quantitative) but instead needs to be described in detail from the point of view of involved characters (Saunders et al., 2007, p. 108).

One could argue that it can be hard to adhere ~~only~~ to only one chosen ontological format. ~~T~~therefore, pragmatism as a combination of objectivism and subjectivism was developed. The pragmatist approach focuses on the research question, and based on that, ~~one~~ the researcher chooses the particular ontological position. If there is no clear tendency towards one position, ~~then~~ a researcher might choose a pragmatist track. It implies that both, qualitative and quantitative methods are possible. (Tashakkori and Teddlie, 1998, p. 21).

Kommentar [AB84]: Please compare with the date in your reference list and correct the error!!

Given the ~~above discussed~~ ontological choices presented above, we decided to take an objectivist position. We assert that index tracking funds and all processes of mutual funds organization already have determined rules according to which they work. These rules present a hierarchy – a step by step process, which is guided by regulations of a government and of securities commissions. We ~~will not don't~~ test these rules but take them for granted, since the purpose of our study is to understand tracking differences among two different, already existing types of index fund strategies. To measure tracking performance, we introduce a number of estimates whose calculations are based on fund return differences. To calculate return difference, we use predetermined and unaltered numbers in the form of prices, which are created by the financial markets and thus beyond our influence. Since such data gives no room for alteration due to interpretation, we see a pure objectiviste stance as best fit most appropriate for our purpose.

2.2.2. Epistemology

Epistemology dictates acceptable knowledge of the study, describes how to gain it and how it will be interpreted (Grix, 2002, p.177; Saunders et al., 2007, p. 102). There are three epistemological positions one ~~can~~ adopt in epistemology:

Kommentar [AB85]: Unclear. What do you mean? Does epistemology dictate which kind or form of knowledge is important for a particular study? Or which sources of knowledge are accepted? Please clarify.

- *Positivism* is closely related to ~~a~~ research performed in natural sciences. ~~One would~~ A positivist researcher works with data obtained from observations and ~~tries~~ tries to generalize the data ~~into~~ universal law-like arguments. Moreover, such research ~~shouldn't~~ be performed in a value-free way, ~~thus a in which the~~ researcher is independent from the subject of research (Remenyi et al. 1998, pp. 73-76).

- *Realism* relates to an understanding of reality, ~~which is not as~~ unbiased by human senses. Similarly to positivism, ~~this~~ epistemological stance ~~similarly to positivism~~ follows a scientific approach; however, it implies that a human mind ~~can~~ can't adequately influence reality. ~~Thus~~ scientists should treat observations without any preconceptions and pay attention to the ~~studied~~ object of study itself (Dobson, 2002, p. 2).

Kommentar [AB86]: Adequate for what?

- *Interpretivism* embodies the opposite of positivism. It dictates that our world is too complex to be discussed in theories. Complex unique parameters of the world would get lost if one ~~would~~ tried to summarize them. The idea behind this stance is that a researcher should understand ~~the~~ reality from the viewpoint of social actors, who create this reality; one should be “empathetic” in order to understand the researched phenomenon (Saunders et al., 2007, p. 107).

Given the nature of our research, we position ourselves as *positivists*. The main reason for this choice is that positivism makes no distinction between natural sciences and social sciences in the conduct of research (Bryman & Bell, 2011, p. 15). Our study is performed with ~~in~~ the methods of financial science which we do ~~non~~ not see as epistemologically different

when compared to a natural sciences approach. Furthermore, our way of conduct covers four of the five main features underlying positivism:

- The first feature is known as the principle of *phenomenalism*. It tells us to see existing Index Funds as concepts or theories which are determined by sense. This requirement is true for our approach as we take the fund companies as given phenomena which act according to determined rules.
- The principle of *deductivism* dictates the second feature. It states that existing theory is assessed by-through the generation of hypotheses. In ~~the same sense, for this~~ our thesis, we also review previous research on, or close to, the subject and use it as directive to formulate hypothesis on which to base our analysis ~~on~~. Therefore, we highlight existing theories about index tracking in the literature review throughout ~~e~~Chapter 3: ~~Theoretical Framework~~. After evaluating previous findings we tie in our analysis by constructing hypotheses that will test former theory ~~on~~ from our research field. (Bryman & Bell, 2011, pp. 15-17).
- The third feature states that knowledge is dearived through the gathering of facts, which are summarized in laws (principle of *inductivism*). As mentioned above and further discussed in ~~2.3. Research Approach~~, we adhere to a deductive approach and therefore do not adopt inductive principles.
- The fourth feature of positivism is the idea that science should be objective (cf. *objectivism*). We appreciate this feature by taking the respective ontological position as motivated throughout ~~2.2.1-Ontology~~.
- The last feature of positivism we adhere to implies a focus on scientific statements. In order to cover this aspect, we ~~do-will~~ not bias our research with generally accepted statements about the research topic. As we will discuss in more detail in ~~chapter 2.5. Choice of Literature and Critical Assessment~~ we strive towards exclusive consideration of unbiased, high-quality scientific articles and academic books to base our hypotheses on. We further do not base drawn conclusions on our own or on external general beliefs, but instead on what we are allowed to infer, within scientific reason, from our or other researchers's findings. (Bryman & Bell, 2011, pp. 15-17).

Kommentar [AB87]: The section number should be enough. Please see my comment "Reference to sections or chapters" in your working document. I also think italic font is not necessary here. Please also note my comment regarding italic font in your working document!

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Our conduct of research therefore agrees with four of the five features of positivism. However, due to ourthe inclination towards *deductivism*, we do not adopt the feature of *inductivism*.

2.2.3. Paradigm

A paradigm is a cluster of beliefs, which tells scientists what should be studied, how research should be performed and how results should be interpreted (Bryman & Bell, 2011, p. 24). During our research we face interactions between ontological and epistemological considerations, which could be explained with help of a paradigm system. There are mainly two beliefs in each of in the ontological and epistemological positions, which lead to four possible paradigms: functionalist, interpretative, radical humanist and radical structuralist.

Kommentar [AB88]: What are those two beliefs?

The functionalist paradigm is the main schema for studying organizations, based on problem-solving and rational explanations. It could be identified as ~~if one would a combination of the standpoints of~~ positivism and objectivism ~~standpoints~~ in a research. The interpretative paradigm is ~~—~~designed to understand an organization based on the perception of the personnel- working in the organization~~who works in it~~.

~~The Radical humanist paradigm~~ identifies an organization as a social institution. In order to study it, ~~one the researcher~~ should isolate individual's perceptions about it and focus on changes within the organization.

~~The Radical structuralist paradigm~~ examines an organization ~~as a result of~~with regard to the power-structural relationship between its employees.

Out of these four paradigms, we ~~identify our study to choose use~~ a functionalist approach for our study, which follows our choice of the combination of positivism and objectivism. We aim to study index tracking based on the idea that there is an existing problem, which we will identify and analyze using empirical data. Further, there are two key assumptions in the functionalist paradigm: objectivity and "regulatory" (Burrell & Morgan, 1992, pp. 5-30). Firstly, as described throughout 2.2.1. ~~Ontology~~, we see our ~~researched~~ field of research objectively, which implies that tracking performance ~~could can~~ be observed externally from an investment company, which performs index tracking and can be adequately measured. Secondly, the regulatory assumption describes our intention to describe index tracking in Europe but not to ~~passmake~~ any judgment ~~on of about~~ this process.

2.3. Research Approach

A research approach can be either deductive or inductive. Robson (2002, pp. 17-22) gives a coherent representation of these approaches.



Figure 5: Logics of deduction. Source: (Robson, 2002, pp. 17-22)



Figure 6: Logics of induction. Source: (Robson 2002, pp. 17-22)

~~As one can see from~~ Figure 5 shows that, a researcher working with ~~the~~ deductive approach, which is mostly used in natural sciences, first ~~checks questions~~ theory by stating hypotheses and then tests ~~the hypotheses~~ on gathered data. The hypotheses are either accepted or rejected, and ~~the~~ theory is revised. There are several characteristics, which comply with ~~the a~~ deductive approach. They are:

1) search for casual relationships between variables, 2) ~~the search should be controlled of the search~~ in a way in which ~~isolates~~ unrelated variables ~~are isolated~~, 3) independence of researcher from observed phenomena, 4) operationalization, which requires objective measurement of observed changes, 5) generalization, as a final goal; in deduction ~~one the researcher~~ should ~~come up with~~ revised theories or agree ~~with~~ existing ~~ones~~ theories. (Gill & Johnson, 2010, pp. 46-52).

An ~~i~~nductive approach, as ~~seen from demonstrated in~~ Figure 6, is the opposite of deduction. It endeavors to develop theory from gathered data. The idea is to ~~look on examine~~ surrounding phenomena, gather data and try to explain observed patterns by creating new theories. Such

Kommentar [AB89]: This does not work here. "Regulatory" is an adjective. An adjective describes a noun, but it cannot stand alone. You need a noun to make your sentence a complete sentence. Please revise! Another option might be to use "regulation" instead of "regulatory" if this works with regard to your subject and the terminology used in the field.

Kommentar [AB90]: A short explanation or definition of what these two assumptions mean might be helpful here.

Kommentar [AB91]: Grammatically, this refers to the company. Do you really mean that the company is being measured, or does the measuring refer to tracking performance? If the latter is the case, please rewrite the sentence or split it and clarify the relations.

Kommentar [AB92]: Repetition. Two times "describe" in one sentence. Suggestion: "underlies".

Kommentar [AB93]: For easier reading, I recommend you to show this numeration in list form, i.e. the five characteristics below each other as you have done in other sections above as well.

Kommentar [AB94]: What are surrounding phenomena? Do you mean phenomena surrounding us?

an approach is usually regarded as highly scientific. ~~It~~ is time-consuming but outcomes are distinct and look deeply into the observed subject in order to ~~come up with~~ find potent explanations (Easterby-Smith et al., 2012, pp. 39-45).

Our research is *deductive*. We state hypotheses based on existing theories and test ~~our~~ hypotheses using empirical data from Datastream obtained for a period of 10 years. By comparing the data of two indices tracking funds we can assess theories found about index fund tracking. By carrying out a statistical analysis using differences in tracking efficiency as a basis, we will be able to analyze and evaluate our hypotheses about index tracking of European indices and draw a conclusion about possible relationships between the two investment instruments. ~~Due-By means of~~ carefully established data selection criteria (as ~~discussed-presented~~ in 4.1.4. *Selection Criteria*) we seek to keep the results free of uncontrolled influences. We further discuss our results ~~on-against~~ the background of previous theory and either agree or disagree with existing theory. In the ~~laetter~~ case (and if our results are generalizable), we present a revised perspective for European Index trackers.

Kommentar [AB95]: You said that you analysed data over a period of seven years earlier in your text on page 4, from 2006 to the end of 2012. Please check if the ten-year period here is correct!

In a nutshell, our study is *deductive*, has a *positivist* position and, according to ontological assumptions, ~~takes an-regarded-as-being~~ objectivistic approach. We see these standpoints as typical for quantitative research; however, any change ~~in-them~~ of any of these standpoints could be regarded as an opportunity for further studies ~~opportunity~~.

2.4. Research Method

Adams et al. point out the importance of the difference between research methodology and research method. While methodology is the science and philosophy behind all research, the research method describes the way of conducting and implementing the research (Adams et al., 2007, p. 25). ~~Given-Depending on~~ the research question, the ~~research used~~ techniques and procedures have to ~~fit~~ match the purpose of the study and be aligned with methodological choices in a way that best serves the ~~goal~~ objective. After having taken our methodological stance, we shall now ~~would like to~~ motivate our choice of research method for this work.

There are two common domains of research methods which can be used separately or in a ~~mix~~ combined approach. One of the methods is the qualitative method of data collection and analysis. It is often used to describe ~~the~~ reality as experienced by individuals and ~~prevails-is~~ rather used in connection with verbal or written (non-numeric) data than with numerical data (Adams et al., 2007, p. 26). The flexibility during the inquiry of such data leaves room for subjectivism throughout the interpretation but at the same time limits the generalizability of the results from an individual sample to a population ~~in the same time~~. Generating or using numerical data, by contrast, ~~on the other hand~~ is ~~referred to~~ known as quantitative research. Most statistical analysis is based on quantitative data as it can be measured numerically (Adams et al., 2007, p. 85).

Kommentar [AB96]: Flexibility in what respect?

Kommentar [AB97]: "On the other hand" can only be used if "on the one hand" precedes! Alternatively you can write "by contrast" or "in contrast to".

Kommentar [AB98]: What can be measured numerically? Please specify. "It" in this case is wrong if you are referring to "data" since "data" is a plural form.

Kommentar [AB99]: Best word? Perhaps "a function of" or "caused by" rather than "justified by"?

Even though by the end of the 20th century ~~2s~~ research was dominated by quantitative methods, ~~during-in~~ the recent past, the qualitative method became of increasing importance. This development is, among other aspects, justified by a shift towards a more subjective and culture-bound approach ~~of-to~~ research in order to conduct more socially and culturally sensitive research. The most recently used and third method ~~movement is the mixed methods~~ is an approach which combines quantitative and qualitative methods by using both, quantitative and qualitative data as well as respective-suitable analysis techniques. Tashakkori and Teddlie explain the existence of the mixed method ~~due to~~ as a result of the possibility that

Kommentar [AB100]: Is that a subject-specific term or your formulation? In the latter case I would rather use "combined method" for a slightly more formal sound.

a single research project can contain two paradigms or two worldviews— (Tashakkori & Teddlie, 2002, p. 5-11).

While many researchers nowadays make use of a combination of both methods (mixed method), we see our research purpose best served using a *quantitative* research method. ~~This fits our needs the best, since~~ we make use of numerical secondary data in the form of historical fund returns and index returns which will be the basis for statistical tests and tracking error estimates. These returns are predetermined by the market and will, due to our strongly objectivistic ontology, be accepted without any subjective interpretation or modification steered by our own conception.

Kommentar [AB101]: “Combined method”?

Apart from choosing the quantitative method, we classify our research as a *longitudinal study*. Longitudinal studies cover long periods of time and follow the sample ~~a repeated number of several~~ times. ~~A longitudinal study~~ It not only provides us with the desired knowledge about the behavior of two different fund models over the chosen period but also with the ability to answer questions about causes and consequences which helps us to break down our series into different periods of interest and analyze them separately (cf. Adams et al., 2007, p. 27). In our case the choice ~~for the of a~~ longitudinal study is ~~rather~~ implied, as we aim for evidence about the tracking capability of Index Funds over time and thus have to consider a longer time frame instead of a “snapshot” time horizon as described by Saunders et al. (2009, p. 155). The latter method is referred to as cross-sectional study and is used to observe a particular phenomenon at a particular time, i.e. how a trigger event affects one or more objects under investigation.

Kommentar [AB102]: Perhaps “analyze”?

Kommentar [AB103]: Causes and consequences of what?

Kommentar [AB104]: Rather long sentence. Please try to split.

2.5. Choice of Literature and Critical Assessment

The use of electronic media ~~like such as~~ the ~~i~~Internet increases ~~the~~ accessibility of data ~~extensively significantly~~. Search engines and a huge variety of databases open doors to an extensive amount of information, ~~which and therefore~~ can ~~bring have~~ many benefits for researchers in conducting data collection. Besides the obvious advantages this kind of data holds, like every source, electronic media ~~has~~ to be evaluated carefully especially ~~given in view of~~ the extensive amount of data and ~~their~~ simple accessibility by everyone. Thus, filtering for relevance and reliability is ~~yet more increasingly~~ important and difficult. Therefore, we have to find ways to structure our inquiry in a way that narrows the bulk of material down to the most useful and reliable selection.

Why a Literature Review?

Throughout this paper we analyze tracking performance of mutual index funds and ETFs ~~due to the by means of a~~ deductive research approach. ~~I.e. In other words,~~ we do not ~~intend to~~ develop new theory but base our hypotheses on previous findings. This approach justifies the need of a literature review, ~~which is essential in any research~~. ~~It~~ A literature study is needed in order to find answers to questions ~~like such as~~ what has been done ~~in previous research~~, what ~~are~~ the main theoretical perspectives in the ~~topic subject~~ area ~~are~~ and what ~~are~~ the common ~~research~~ methods ~~of used for~~ investigation ~~are~~. Reviewing previous literature further gives us information ~~about on who are the~~ experts in the field ~~as well as and what are the about~~ commonly accepted findings and controversies: (Adams et al., 2007, p. 49).

Kommentar [AB105]: Tautology? If a literature review is essential in any research, there is no need to justify your literature review.

~~Working our way through~~ The review of a large amount of articles gives us a clear ~~picture on account of~~ the current stage of research, ~~and induces~~ It further generates a selection of papers which are closely related to our research question and thus can be used to base our hypotheses on and ~~to~~ connect our discussion of results to.

Kommentar [AB106]: Alternative: “can be used as basis for our hypotheses and as point of connection for our discussion of results”.

2.5.1. Choice of Sources

Saunders et al. categorize literature sources according to the flow of information from the original source (primary literature) to secondary and tertiary sources, where the level of detail increases from the latter to the first stage. As the different stages build on each other, the level of accessibility increases if literature is published at a later point in information flow.



Figure 7: Flow of Information. Source: Own design motivated by Saunders et al. (2009, p. 69.)

(Saunders et al., 2009, p. 64).

It ~~can be hard to find complete~~ ~~may be unrealistic for us to conduct our study with~~ primary literature only, which in our case is especially limited due to time and cost restrictions. The majority of our chosen literature is therefore of secondary nature which, if carefully selected, does not lead to pivotal quality constraints. Where possible we make use of primary sources such as governmental publications, which nowadays are often made accessible via the internet.

Kommentar [AB107]: I assume this source belongs to the paragraph before the figure. Please move your source next to your paragraph, otherwise your readers may think this is the source if your figure and wonder why the page numbers of your source here and in the caption to your figure differ.

In order to structure our literature research, we focus on articles published in well-established peer reviewed journals (e.g. *Journal of Portfolio Management*, *Journal of Financial Markets* etc.) and further track back crucial information by searching for the respective articles ~~stat~~included in the reference lists. Our choice is further dominated by more recent articles (mainly 2000—2012) due to the fact that Exchange Traded Funds reached their main adoption in the beginning of the 21st century. Due to low reliability we widely avoid internet publications and commissioned articles. If we decide to make use of such sources we treat them with the necessary caution ~~in~~with respect to possible ~~alleged~~ bias.

Kommentar [AB108]: Italics are usually used for journal titles.

Kommentar [AB109]: I am not sure what you mean with adoption. Please try to rephrase.

Several electronic libraries mainly made available by the Umeå University Library provide us with access to a broad amount of scientific papers. ~~Besides During our research, among~~ sources, the most frequently consulted databases for articles in the course of our research were Business Source Premier, hosted by EBSCO Publishing Inc. (EBSCO, 2013), and LIBRIS, a Swedish national search service providing a joint catalogue of the Swedish academic and research libraries (LIBRIS, 2013). Some of the most frequent keywords for our requests included “Mutual Index Funds”, “Exchange Traded Funds”, “Tracking Error”, “Index Replication” and “European Index Funds”.

To gather information about included funds and indices we retrieved general input from well-known financial market platforms ~~like such as~~ Bloomberg, Morningstar, Yahoo Finance and more detailed information from the respective fund company’s website. The daily data for fund returns was solely obtained via Thomson Reuters Datastream, which ~~again~~ is also made available to us via the Umeå University Library. Datastream is widely viewed as one of the largest global databases of economic data, covering up to forty years of historical financial information (Umeå Universitetsbibliotek, 2013). A more detailed description of the used financial data used will follow in the course of this study throughout the Practical Method chapter.

Kommentar [AB110]: Does an English name exist for this library? If yes, I recommend you to use the English name instead.

Kommentar [AB111]: I suppose you are referring to chapter 4. For the sake of consistency with earlier references to your chapters, I would rather just write “chapter 4” instead.

Quantitative methods in our study are based on statistical analysis. We used t-tests for a mean, paired two samples t-tests, regression analysis, descriptive statistics and analysis of variance methods. The description of methods in detail is provided in Chapter 4, but in terms of sources to describe the statistical tools used, we refer mainly to books/sources from our University library. Frequently used books were “The Practice of Statistics for Business and Economic” (Moore et al., 2011), David Ruppert’s “Statistics and Data Analysis for Financial Engineering” (2010) and “Statistics and Finance” (Ruppert, 2004). These books provided us with the main necessary knowledge for statistical analysis.

Kommentar [AB112]: Are you sure this is correct?

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Kommentar [AB113]: Not in your list of references. You only have a Moore (1996) reference.

Kommentar [AB114]: Please compare with the year in your reference list.

Kommentar [AB115]: Not in your list of references.

Kommentar [AB116]: Harvard style usually only requires author and date to be mentioned in your running text. Book titles are only given in the bibliography.

2.5.2. Data Type

During our study, The main results of our study will be based on secondary data. Returns and net asset values of index funds and hedge funds shall be obtained from Datastream. The choice regarding for secondary data has such advantages such as:

- Fewer resources are needed. According to Ghauri and Gronhaug (2005, p. 95) it is less expensive to use secondary data than to collect data yourself.
- Less time is needed. Cowton (1998, p. 430) demonstrates that the researcher won't need a lot of comparatively little time to collect needed secondary data.
- Such data suits longitudinal studies (Dale et al., 1988, pp. 50-60) as since such type of data they may contain information for a period of years. This feature is of utmost importance to us, as we would like to implement a longitudinal comparison of tracking index funds.
- Conformity is given to comparative tasks of researchers (Saunders et al., 2007, p. 259). Secondary data is suitable for comparison in order to assess generality of findings.
- Guarantees permanence is guaranteed. Unlike other types of data, secondary data are permanent and easily available for others, thus the data is more open to public scrutiny (Denscombe, 1998, p. 180).

There are also disadvantages of secondary data also have disadvantages. According to Denscombe (1998, p. 182) and Saunders et al. (2007, p. 260), data may not fit the purpose of the study or regarded with less quality. As our main source is the Thomson Reuters Datastream intellectual network (Datastream), we trust in the quality of our data, which is due to high reliability and validity of data provided by Datastream (Datastream, 2008, pp. 1-2).

Kommentar [AB117]: This sounds a little odd. Perhaps “may be lower in quality”?

Kommentar [AB118]: Sounds a little clumsy. Perhaps “since Datastream has the reputation of high reliability and validity of the data it provides”?

2.5.3. Quality Assessment of Sources

Literature The review of literature and in particular the selection using of secondary literature is a critical part, as we rely on third party information. There are several aspects regarding relevance, quality and accessibility that should be scrutinized.

The freedom of information brought by inherent in electronic media comes with benefits of accessibility and simplified distribution possibilities on the one hand, but on the other hand, with a higher risk of an insufficient level of quality on the other. Therefore, we maintain follow a number of principles in order to ensure the quality of our study.

First, we make use of our own judgment; once we select an article for review we look at several indicators, i.e. who is responsible for the work, who published the work, when was it published, what is the overall impression of the style and the flow of arguments that lead to the presented evidence and which other works does it refer to (Adams et al., 2007, p. 61).

Excluding fundamental works, we focus on recent articles rather than older ones, which might be outdated. Even though this does not always constitute a sufficient measure of quality, personal judgment gives a first impression on which literature to further focus on and which literature should be treated with caution.

Kommentar [AB119]: Rather “apart from”? “Excluding” used in this way sounds as if you were not planning to use fundamental works in your study. Only leave it as is if you are indeed not going to use any fundamental work (which might, however, have implications regarding your methodology and would need well-founded justification).

Second, as mentioned before, we search for articles published by well-known scientific journals. Yet, as we are facing an enormous number of different journals only in the field of business administration and economics, we make use of a journal rating provided by the Australian Business Deans Council (ABDC). The ABDC established a Journal Quality List, which considers the relative standing in other recognized lists (such as the Association of Business Schools), Citation metrics, International standing of the editorial Board, the quality of the peer-review process and others (ABDC, 2013). The lists contains only recognized journals and ranks them from A* over A, B and to the lowest rating C. During our literature review we avoid unlisted journals and prefer highly ranked ones.

Kommentar [AB120]: The relative standing of what?
Kommentar [AB121]: Is that a list?
Kommentar [AB122]: Other what?
Kommentar [AB123]: The sentence is difficult to understand. Please try to clarify your sentence.

2.6. Ethical Considerations

Ethics is about drawing the line between right and wrong. It emphasizes the “do”s and “don’t”s in society. Ethical expectations exist in higher education as well as in society as a whole. Ethical behavior is underscored by numerous written and unwritten laws and regulations. However, new issues continuously emerge as societies become more complex.” (Errikson and Kovalainen, 2008)

Kommentar [AB124]: Two problems:
 1) The paragraph ends with quotation marks, however, it is not clear where the quotation begins. Please check, compare with your source text, and add the missing quotation marks. Please also note that if the entire paragraph is a quotation, the double quotation marks embracing “do’s” and “don’ts” should be changed to single quotation marks, as is usually the rule for a quotation within a quotation.

Ethics in research deals with sets of expedient behavior in relation to the studied subject of study. Cooper and Schindler (2008, p. 34) identify research ethics as standards of behavior in relation to others. In business studies there are two streams with regard to research ethics: ethical considerations: deontology and teleology. The former states that no matter of what the research results are and how significant the research is, it should be ethical. The latter, in contrast, agrees that one could research might go unethical ways in order to achieve for “higher results”.

2) I suppose that the author did not write “do’s” and “don’t’s” in the way you did here. A certain variation in the spelling of this expression exists, but the probably most common form is do’s and don’ts. If you want use quotation marks, you would write “do’s” and “don’ts”. If you are citing a source here and this is really how it is written in your source text, you might indicate with a [sic] that this spelling is very odd.

For our preliminary search we use the Internet. Not a long time ago Cooper and Schindler (2008, p. 36) highlighted a concept of netiquette. It refers to an ethical behavior while using the Internet in relation to contacts with possible participants or privacy limitations.

Kommentar [AB125]: Who? Other researchers, or other people in general, or...? Please specify.

The authors of this thesis take ethical considerations not only for granted but also as a very important and serious element throughout the whole research process. We therefore comply with the deontology concept and believe that research can only be done only in an ethical way. In order to reach a high ethical standard we adhere to the ethical guidelines of Umeå Business School in particular, which are (made available to USBE students via Cambro (Cambro, 2013)), and to ethical codes in of society in general. Both authors undertook and passed the obligatory “mini-exam” about academic ethics at Umeå Business School.

Kommentar [AB126]: What are “higher results”? You might add a sentence or two with a brief explanation.

Our research project does not have include any third party participants. And thus, parts of ethics aspects of ethical consideration related to participants such as: contacting participants, privacy invasion, consent issues and appropriate information of participantsing them are not related insignificant to our research. Third, we can justify that in our study, data gathering and analysis are performed objectively, — accurately and fully (Saunders et al., 2009, p. 194).

Kommentar [AB127]: This is unclear. Participants for what? And what is meant by privacy limitations? Please clarify.

Kommentar [AB128]: Please consider giving the reader an idea of what these ethical codes look like in two or three sentences.

Kommentar [AB129]: Such as...??

Kommentar [AB130]: Where are “first” and “second”?

We will discuss and analyze returns of index tracking funds, ~~which~~ These were obtained from Datastream, which, as already motivated, has the reputation of a highly reliable data source. Further, all information, which we use ~~are is~~ freely available to market participants and thus ~~cannot~~ be harmful if ~~it would be were~~ disclosed. The findings from our study embrace different factors which may affect others' decisions in case they will use ~~them our~~ findings in further research (Khang et al. 2012, p. 280); ~~T~~thus we are concerned to remove any bias or false conclusion ~~driving from our study and the~~ reporting ~~from about the study's~~ results, and ~~we~~ endeavor to ~~come up with~~ achieve the aim of our study ~~an objective,~~ ~~underpinned~~ by use of reliable data conclusions. We further indicate and properly reference all stated ideas and intellectual property of third parties and ~~give~~ provide the respective bibliographic information to give other researchers the possibility to verify this work.

Kommentar [AB131]: What is the "it" referring to? Please clarify.

Kommentar [AB132]: This is unclear. What do you mean with "if it were disclosed"? Please try to clarify.

2.7. Summary of Methodological Choices

During the appraisal of our project’s methodological assumptions, we decided to implement a positivist stance with objectivist concerns by performing quantitative research in a deductive way over a defined time horizon (10 years). The visual summary is provided below in the Figure 8.

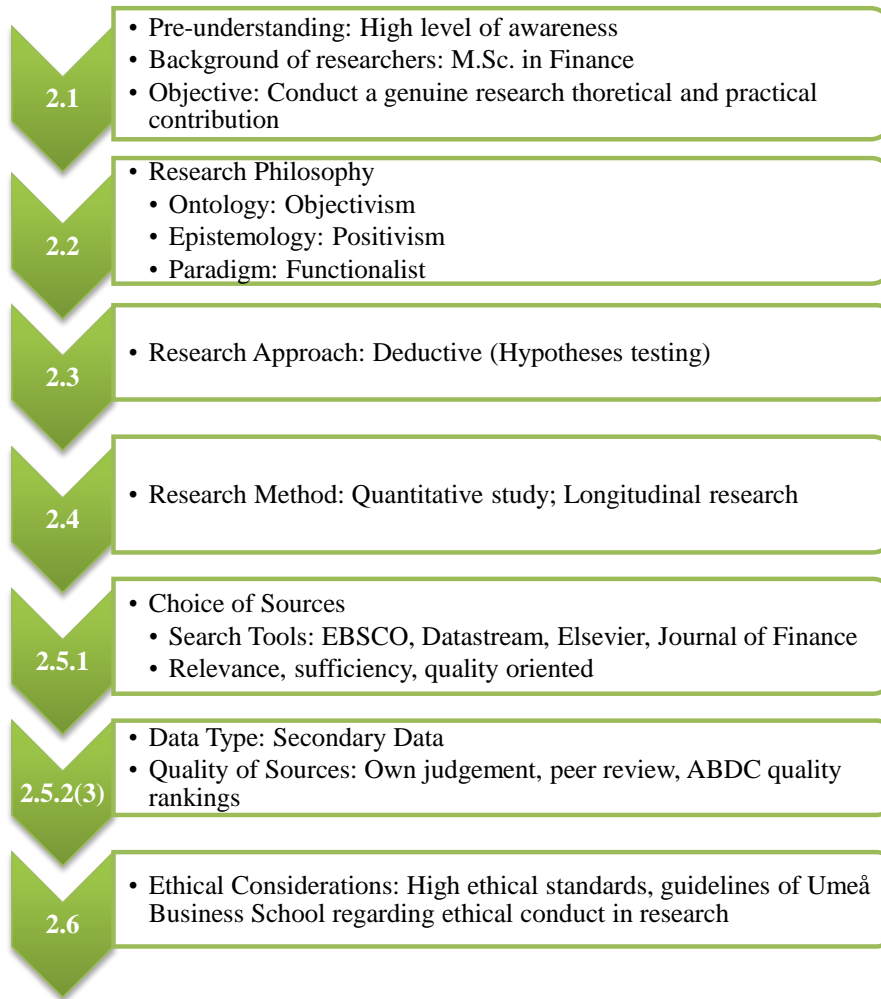


Figure 8: Methodological summary, Source: own design.

Kommentar [AB133]: You are also talking about a time span of 7 years in other paragraphs of your paper. This is confusing for your reader since he or she cannot tell whether you are talking about two different time spans. Please either explain if you are using two time spans, or if it is only one, clarify whether it comprises seven or ten years.

Kommentar [AB134]: I strongly recommend you to not refer to a table or a figure as being situated “below” or “above” for the simple reason that something might change in the formatting of your document at a later stage and a table or figure might suddenly not be found above its description anymore, but have been shifted to a different place in your document below the description, or vice versa. To be on the safe side and to not produce unnecessary work for yourself and potential sources of error, I recommend you to only refer to tables, figures and equations with the respective number, i.e. “Table 4 presents...”. This is enough information for your reader, who can even go back to your list of figures and tables to find the relevant page number. If you make any change in this regard, please do so consistently throughout your paper for all tables, figures and equations.

Kommentar [AB135]: Feedback for Figure 8:
2.1 conduct genuine research with theoretical and practical contribution (to what??)

3. Theoretical Framework

Throughout this chapter we give an insight into the characteristics of the two different types of investment companies we aim to compare with one another. Furthermore, we introduce important terms and definitions that we make use of throughout this paper. Among other aspects, we discuss the calculation of return differences, tracking error and indices, as it was covered in previous literature. We conclude our literature review with a selection of relevant findings published by other researchers that are we find to be connected to our research purpose and form an appropriate to-basis for base-our hypotheses-on.

3.1. Index

3.1.1. Definition and Use of an Index

Financial indices are frequently used to capture information about regional, industrial or sectional markets of economic interest and their development. Thus, ~~an index's~~ the purpose of an index might be, for instance, to represent a geographical or political region (e.g. Asia, South America, Europe, continental Europe or the EU), a country's economic development (e.g. France, Germany, Spain, ...), an industry (health care, entertainment, food) or a sector (e.g. emerging markets). Further, indices can be specialized in specific themes or strategies like such as sustainability, dividends, sports etc. Today, a huge variety of fields in all respects is covered by indices, which makes it possible to include them in enables their inclusion into investment strategies or market research (cf. inter alia Jordan & Miller, 2009, pp. 152–158).

Kommentar [AB136]: Your heading announces two elements, namely first a definition and second the use of an index. Your section elaborates on the use of indices, but you have not really given a definition of what an index is. Perhaps just add a paragraph at the beginning of your section in which you define an index.

Kommentar [AB137]: The indices or the fields? Please specify.

One of the most-followed stock index is the *Dow Jones Industrial Average*TM (or Dow[©]), which comprises large and well known U.S. companies (McGlone, 2011), followed by the Standard and Poor's 500 index containing 500 of the largest companies of the U.S. (Standard and Poor's, 2012). As for Europe (and for the relevance of this thesis), the most common stock market indices are CAC40, FTSE 100, IBEX 35 and the DAX 30, tracking the largest French, UK, Spanish and German stocks, respectively. On a European level, common indices are the EURO STOXX 50 (50 stocks from 12 Eurozone countries) and the MSCI Europe (consisting of 16 developed market country indices) (MSCI, 2013; STOXX, 2013).

Indices like such as the above listed can draw project a good thorough picture about of the underlying markets. Accuracy in reflecting the true values and development is, however, limited due to index staleness. Index staleness occurs when an index includes stocks which are not traded on a daily basis and therefore compromise the indices monitoring accuracy. Therefore, such stocks might be not be represented by the index, even if playing an otherwise influential role. By not including every single stock that determines the represented market but rather a portion of it, indices cannot mirror this markets 1:1 (Jordan & Miller, 2009, p. 152).

Kommentar [AB138]: Of what? Of the markets?

Kommentar [AB139]: A slight change in style is noticeable here. Please check whether you have perhaps used the words of a source which you forgot to reference.

Kommentar [AB140]: Please check in your literature whether this expression is hyphenated, i.e. "weight-included". If it is, make sure that you change this throughout your whole paper.

Kommentar [AB141]: What does "it" refer to? The index, or the constituent? Rather name the subject of reference again to help your reader. Please also consider to split your sentence. Two shorter sentences instead of one long sentence will also help to clarify what you mean here.

Kommentar [AB142]: I suppose this is a financial term. However, please check in your literature whether there is indeed no hyphen used (as in contrast to the foregoing compound adjectives). The same accounts for the compound adjective "attribute weighted".

You might also run a web search to check whether hyphens are used in particular terms, but rather trust your literature.

Please make sure that you generally hyphenate compound adjectives (adjectives which consist of more than one word) throughout your entire thesis. If you have any questions or problems with adjectives and compound adjectives, please feel free to ask me.

Armstrong names further problems of indices that investors might have to be aware of. Firstly, many indices (e.g. the S&P 500) are weight included securities by market capitalization. With increasing value of a constituent, this stock becomes more influential to the index in the same time and thus makes it more vulnerable to concentration, i.e. that a few stocks tend to be taken as representatives for the underlying market. Secondly, many investors use indices as basis for diversification strategies. Growth in particular sectors are-is being passed on via a respective emphasize-emphasis in the index and thus can dilute expected diversification. The same applies for investment style, if-should one style starts to dominate (e.g. growth vs. value stocks) (Armstrong, 2011).

3.1.2. Index Calculation

Financial indices may be calculated in different ways. In general, the procedure is called *weighting*. There are capitalization-weighted, equal-weighted, modified market capitalization weighted, price-weighted and attribute weighted indices. While FTSE, MSCI, S&P and Dow Jones use-mainly use capitalization weighting for index calculation, the Dow Jones Industrial Average is an example for a price-weighted index (S&P 500, 2012, p. 4).

Devisor of an index

In order to understand weighting, it is important to introduce ~~such the~~ term as “index divisor” first. It is used to present an index in a suitable way. To ~~get~~calculate an index price, one should, for each stock in the index, obtain their market capitalization (*price of the stock x No. of shares outstanding*) and sum all the results. ~~F~~for the S&P 500, for example, it would be around \$12 trillion nowadays. For convenience, a divisor is used to divide the index price by and thus to get lower numbers to work with. In the case of the S&P 500, in the beginning the divisor was determined by market capitalization in the base year 1943. It ~~then~~ was then adjusted, if any changes occurred in stocks, which changes the market value of the index but leave-left stock prices unaffected. Thus, in case of stock splits, issues of additional shares, changes in index composition, etc. the divisor is tuned to keep the index on the same level. The general formula for the divisor is:

$$D = D_{t-1} \times \frac{MV_t}{MV_{t-1}}$$

Equation 1: Index Divisor

In *Equation 1*, D is a new divisor and MV is a market value of an index. The divisor is always adjusted to cancel out any changes of the index price at $t-1$, if they are not related to constituent stock prices. ~~For example, if we suppose that~~ S&P 500 closes at 1250 and one company performs a share repurchase, in order for S&P 500 to open at 1250 on the next day, the shares repurchase is canceled out via divisor adjustment. (S&P 500, 2012, p. 5).

Market weighted index

For Market weighting (also capitalization weightinged or value weightinged), the index is calculated as a sum of the market capitalization of all shares belonging to the particular index. The formula is:

$$\text{Index Price} = \frac{\sum_i P_i \times Q_i}{\text{divisor}}$$

Equation 2: General MW index calculation

with P as the stock price and Q as the number of shares outstanding. Market weighting (MW) is commonly used and most of the S&P indices, Dow Jones indices as well as FTSE, MSCI, AEX and others EU indices are capitalization weighted. (S&P 500, 2012, p. 6). Nowadays, most indices are modified, e.g. by using free-float adjustment or other methods which we will briefly discuss.

Market weighted index: Capped factor

A capped weighted index constrains constituents to a specified weight, and the excess weight is spread among the remaining index constituents. Thus, it limits the weight on a stock, which has “too² high” market capitalization. As stock prices changes, the weights will shift and the adapted weights will change. Similar to an equal-weighted index and a modified market cap index, a capped market weighted index must be rebalanced from time to time to re-establish the correct weighting. The procedure is alike-similar to market cap weighted indices. The main difference between the methods concerns adjustments of corporate actions between rebalancing periods. For modified market cap weighted indices most corporate actions which affect the market capitalization of a given stock are counterbalanced by a corresponding change in the adjustment factor assigned to the stock in that index, thus resulting in no weight change to the stock and no index divisor change. ~~On the other hand, f~~For capped indices, by contrast, no adjustment factor change is made due to corporate actions between rebalancing.

Kommentar [AB143]: Does this refer to the index or the stock? Please clarify.

Kommentar [AB144]: The sum? Or the market capitalization? Please clarify. “It” is often not clear enough.

Kommentar [AB145]: Hyphen? Please also check the hyphen matter in your table of abbreviations!

Kommentar [AB146]: Please check the capitalization of this term and as well for all other subject-specific terms used in your paper. Are you sure that “Market” is capitalized while “weighting” is not and the abbreviated form given a few lines below consists of two capital letters (MW)? Please check all the subject-specific terms in your paper for capitalization and if you correct something, remember to do so throughout your entire text.

Kommentar [AB147]: This abbreviated form should appear further above where you are using the term for the first time in your running text.

Kommentar [AB148]: When? In which section? Please reference!

Kommentar [AB149]: Hyphen? Please check if a hyphen is used in your literature and, if applicable, change throughout your entire document! I am not going to mark every instance of the hyphen question in your document. If you are going to change something in the spelling of any of these terms, a safe way to make the change consistently throughout your document is the “search & replace” function of MS word!

Kommentar [AB150]: Hyphen?

Kommentar [AB151]: What exactly? The capped-weighted index? Please specify.

Kommentar [AB152]: Hyphen?

Kommentar [AB153]: Something is missing here. If you use “between”, you need two things between which something takes place. Do you perhaps mean corporate actions between phases in which the index is rebalanced? Please revise!

and thus, the weights of stocks in the index as well as the index divisor will change due to corporate actions. (S&P 500, 2012, p. 19).

Market weighted index: Floating factor

A method when the number of shares outstanding is reduced, in order to represent shares which are available to investors by excluding closely held shares (e.g. some stocks are closely held by the government, long term investors, or the company itself). Thus, such adjustment allows only freely traded shares to be considered for index calculation. The adjustment requires having an Investible Weight Factor (IWF), a percentage of shares outstanding and freely available for trading. Thus, in case of free float adjustment, the number of shares is adjusted by the formula: $Q_i = IWF_i \times Total\ Shares_i$. Afterwards Q is used in Equation 2 above for index price calculation. (S&P 500, 2012, p. 7).

Kommentar [AB154]: This sentence is incomplete. I cannot complete it for you since I am not familiar enough with the subject. But you would have to add something in the range of "A floating factor is a method of doing xxx when the number of shares outstanding is reduced..." My suggestion is still not be very sophisticated since a factor is not really a method, but I am sure you can solve the problem with your subject knowledge.

Market weighted index: other adjustments

In addition to already mentioned modifications, it is possible that an index could be specially modified. A modified market cap weighted index has a "user-defined" weight in the index. It is used to constrain constituents to specific maximum weights. A Modified market cap weighted index must also be rebalanced through over time to have a "proper" weighting. (S&P 500, 2012, p. 15).

Kommentar [AB155]: Is this a definition of the IWF? In that case your sentence should read "which is a percentage of shares...", or if the marked clause is not a definition of the IWF but an additional requirement, your sentence should read "and a percentage of shares...". Please revise!

Market weighted index: AEX example

The AEX index (weighted as free float adjusted market capitalization index) is calculated as:

$$I_t = \frac{\sum_{i=1}^N Q_i F_i f_i C_i X_i}{D_t}$$

Equation 3: General MW index calculation

Where Q is the number of shares of equity i on the day t ; F is a free float factor of equity i ; f is the capping factor (currently 15% for AEX index) which is used to limit the weights of the stock if they exceed a certain percentage of equity i ; C is the price of equity I on day t ; X is the current exchange rate on t and D is the divisor (as described above in Equation 1) on day t (as of on the 10 May 2013 it was 748415614,163642 for AEX). (AEX, 2013).

Kommentar [AB157]: What does "it" refer to? Please specify.

Market weighted index: critique/criticism

Recently, market weighted indices calculation methods were subjected to scrutiny and criticism. Recent studies argued that MW is no optimal method to create an index portfolio, as it provides inefficient risk-return tradeoff (inter alia Amenc et al., 2011; Arnott et al., 2005). Thus, using market capitalization will not provide fair value, as since index constituents quoted prices are biased with preconceptions of current traders (e.g. overweighed, overpriced, etc.). Therefore, Arnott et al. proposed and patented index weighting using fundamental values of a company. They argue that market capitalization leads investors to buy as prices rise and sell as prices fall, which is in contrast contrary to the "buy low, sell high"-strategy. (Arnott et al., 2005).

Kommentar [AB158]: Pages?

Kommentar [AB159]: Page?

In addition, one should not forget that, although an index represents the market state, it also embodies capital flow and bargaining power of participants. Thus, an index price might entail share float, share price and constituent companies influencing the market in their own way. (Ghorawat, 2013).

Effectively, market indices are a compound factor of three variable components:

- 1) the quantity of ~~S~~share (whether Free Float or Total issued).
- 2) the prices of the Equity Shares and
- 3) the constituent companies of the Market Index.

Each of these components influences the determination of the state of the capital market (and hence the marked index) in its own manner. (Ghorawat, 2013).

Equal-weighted index

In this type of an index, each stock has the same weight. and a portfolio that tracks the index will invest an equal dollar amount in each security. As stock prices move, the weights will shift and exact equality will be lost. Thus, such index would need to be adjusted accordingly. (S&P 500, 2012, p. 12).

Fundamentally weighted index

Using fundamental weighting requires measuring index based on stock fundamental values, which are represented by book value, P/E, P/B, dividends, revenue and gross sales. Fundamental indexation was first introduced by Arnott et al. and is based on the idea that prices are not good representatives of the current value of a stock. Thus, market capitalization should be avoided due to bias in prices. The article using back testing gives significant returns in comparison with index; however, as main opponents argue, such returns were achieved without incurrance of transaction costs, which would substantially eat all the profits due to a need of frequent rebalancing. (Arnott et al., 2005).

Index weighting comparison

The Figure 9 below provides insights into three approaches. It is observed that MW indices would be more tax efficient and would have lower expenses. In contrast, Fundamentally Weighted indices would have higher turnover and show specific valuation, which is not biased by market conditions but rather grounded on companies' balance sheets.

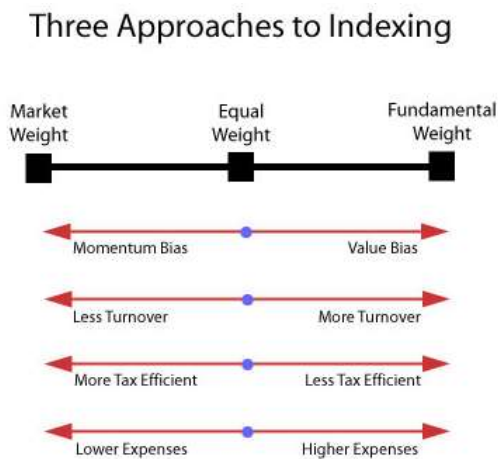


Figure 9: Index weighting comparison. Source: Shaw (2008)

Price-weighted

Kommentar [AB160]: Is this a firm concept and really supposed to be capitalized?

Kommentar [AB161]: Please revise your capitalization. In the line below, the same term is not capitalized. Please decide for one version and use that consistently.

Kommentar [AB162]: The change in layout is a suggestion to facilitate reading.

Kommentar [AB163]: "Good" is often a little vague as an adjective. Perhaps "reliable" here?

Kommentar [AB164]: Is this Arnott et al.'s expression? If it is, I would write it in quotation marks. If it is your own formulation, I would rather use a slightly more formal term such as "consume" or "destroy".

Kommentar [AB165]: Why "would"? If these indices exist on the real market and what you are describing here is fact, then please do not use a conditional form but the normal present tense!

Kommentar [AB166]: Is there any particular reason for which the name of this type of index is written out, while "MW" is given in abbreviated form one line above? If an abbreviation for "fundamentally weighted indices" exists in the same way as for other indices, I suggest that you include the abbreviation in your list of abbreviations. Furthermore I suggest that if abbreviations exist for both terms, you introduce the abbreviation in brackets after the term where it is first used in your text, and from there on you can either just use the abbreviation or write it out. But I recommend you to avoid using the abbreviation of one term and write out the full name of another term in the following sentence, simply because it disturbs the reading flow.

Kommentar [AB167]: Price-weighted what? Here a noun is missing. Perhaps "Price-weighted Calculation"?

Price-weighted calculation of an index uses prices of stocks as weights for index price calculation. This type of weighting was criticized a lot as it ~~won't does not show mirror~~ the ~~correct~~ "real" situation on the market. This weighting ~~would~~ gives high weights to stocks with high values, and ~~won't consider~~ many small value stocks ~~are not considered~~. ~~For example, A~~ \$100 stock, ~~for instance~~, would have more weight than a \$5 stock, disregarding their ~~respective~~ capitalization and company characteristics. In addition, stock prices usually do not show fair value and could be influenced by stock splits or other corporate actions. Finally, such indices should be constantly rebalanced to reveal changes in stock prices. The most popular price-weighted indices are the DJIA and Nikkei 225. (S&P 500, 2012, p. 23).

Kommentar [AB168]: No conditional for "real" facts.

Other weighting techniques

Recently, some new methods of weighting have appeared. We shall list them and only give a brief description; such types of index weighting are ~~more rather~~ exotic and not used by the major indices ~~such~~, as ~~those we~~ included ~~them~~ in this paper.

Kommentar [AB169]: "Appeared" sounds as if they just popped up out of nowhere. Perhaps "have been developed"?

In 2005, Pure Style Indices are "attribute weighted", where weights depend on the measures of stock growth or value attributes (S&P 500, 2012, p. 23).

Kommentar [AB170]: A whole clause seems to be missing here. What happened in 2005?

An ~~index also~~ could ~~also~~ be based on low ~~-~~volatility, where one ~~would~~ limit the volatility of the tracking portfolio to ~~get smooth~~ price changes ~~smoothed~~ relatively to a normal index; in order to control the level of volatility. Income ~~-~~focused indices pick stocks with the highest dividends. Dynamic indices try to focus on "attractive" stocks with high momentums. Factor indices track stocks with high beta or momentum. Leveraged indices ~~are~~ designed to generate ~~a~~ multiple of the return, ~~either a~~ positive or negative ~~one~~, which is defined by the index. Further, inverse indices provide investors with opposite performance of the chosen index. Next, there are many fund strategies indices; which are created by funds. Their strategy is usually to ~~bit~~ the given benchmark. Dividend indices would track dividend payments from the constituents of a chosen index.

Kommentar [AB171]: The quotation marks might be omitted. If the sentence is circumscribing the idea of your source, it is enough to cite the source at the end of the idea as long as you are not quoting the exact words. If "attribute weighted" is the only expression that appears in your source text as such, you can omit the quotation marks if the term refers to a universal concept in finance.

The ~~at above~~ is not ~~a~~ complete list of index types. There are other types of indices which ~~broaden make~~ the ~~investing~~ universe ~~of investment broader~~ and provide different solutions for the needs of investors (e.g. risk control indices, currency hedging indices ~~or~~; excess return indices); (S&P 500, 2012, pp. 27--50).

Kommentar [AB172]: What kind of index (since you are talking about specific types of exotic indices here)?

Kommentar [AB173]: Is that your suggestion or is this really done sometimes? If the latter is the case, please use the present tense ("can" instead of "could" etc.)

Kommentar [AB174]: Present tense?

3.1.3. Index ~~S~~pecifics: The ~~E~~xample of the S&P 500

Kommentar [AB175]: Do you mean "to bid on" or "to beat"?

Different indices possess characteristics; which should be considered when one chooses a particular index as a benchmark. S&P is one of the main indices in the U.S. Thus, many portfolios use it as a benchmark, and any change in it also effects prices in stocks, ~~as since~~ many managers will trade ahead on ~~these~~ predicted changes to take advantage of the expected price of an index.

Kommentar [AB176]: Since you are talking about a list, you might consider presenting these different index types in list form, i.e. a bullet list, for instance. This gives your reader an easy overview of the number of different indices and fulfills your announcement of presenting a list.

Before October 1989, changes in the composition of the index were announced at the end of the day when trading was closed. Thus, it ~~ea~~ffected opening prices of an added stock on the next day and vice versa for a deleted stock. After 1989, S&P 500 changed their ~~ir~~ policy and announced additions or deletions as early as possible to ~~create give~~ more opportunities ~~to for~~ people to profit from them. (Chiang, 1989, pp. 310-312).

Kommentar [AB177]: What are you referring to? Please specify.

Kommentar [AB178]: Perhaps specify a little? What kind of people? Investors, traders...?

Furthermore, in terms of dividends in the mid-80s, the index reinvested dividends every quarter, and it was easier to track an index by funds during up markets as ~~they~~ could reinvest dividends earlier. Nowadays, the index is calculated assuming that dividends are reinvested immediately if the stock goes ex-dividend. This has important implications for index funds, as

Kommentar [AB179]: Who?

it ~~makes-complicates~~ tracking ~~harder~~ due to the deferral between actual dividend distribution and the moment ~~when-at which~~ index managers receive them. (Chiang, 1989, p.311).

Kommentar [AB180]: Whom? The index funds? Please specify.

3.2. Return, Risk and Error

3.2.1. Return ~~D~~ifference

Return difference ~~is-a~~ measures ~~of~~ how the return ~~over-a-given-period~~ deviates from its benchmark ~~over-a-given-period~~. ~~and~~ Return difference is calculated ~~according-to-as-shown-in~~ Equation 4 below, where R_i is the return of an index fund and R_b is the return of the tracked benchmark index.

$$\text{Return difference}(R_d) = R_i - R_b$$

Equation 4: Return Difference

When tracking an ~~d~~ index, a certain return difference is expected. This is due to the fact that the tracking index is a “paper only” index and it ~~does-no-t~~ experience any market fees or frictions. It is created solely for benchmark purposes and ~~is-not~~ a subject to tradable securities regulations, ~~such as broker fees and taxes~~ (Frino & Gallagher, 2001). ~~It implies that returns of an index fund should always be smaller than returns of an index. For example, w~~When weights in the index change, due to changes in volume or prices of the securities, ~~for instance,~~ the index adjusts the new portfolio weights automatically and calculates the value. As ~~it happens,~~ a portfolio manager needs to adjust his weights by performing real transactions on the market, which is subject to broker fees and taxation. Therefore, there will ~~be-always~~ ~~be~~ a return difference between an index tracking fund and its benchmarked index. The difference in ~~a~~ perfect market conditions is expected to equal the amount of transaction costs (Frino & Gallagher, 2001).

Kommentar [AB181]: Are these two terms examples of tradable securities calculations? In this case your sentence can stay as is except that the comma after “regulations” should be removed. If, however, broker fees and taxes are subject to tradable securities regulations and mentioned here as comparative elements to tracking indexes, your sentence must read “such as broker fees and taxes are”.

Kommentar [AB182]: Page?

Kommentar [AB183]: What exactly? Please clarify.

Kommentar [AB184]: Colloquial. Alternative suggestion: “As calculation proceeds,”

Kommentar [AB185]: Page?

According to Chiang (1998) the main drivers of return differences are transaction costs, fund cash flows, the treatment of dividends by the index, the volatility of the benchmark and index composition changes. In addition, one could say that there will ~~always~~ ~~be~~ ~~always~~ a trade-off between minimization of return differences and cost minimization. Portfolio managers will decide when they should rebalance the weights and become more efficient in tracking an index, on the one hand. On the other hand, they ~~would~~ prefer to keep weights unchanged in order to avoid transaction fees and stay cost efficient. Therefore, ~~a~~ manager's² decision ~~is~~ always ~~is-a~~ compromise aimed ~~on-at~~ reducing the return difference. (Frino & Gallagher, 2001).

Kommentar [AB186]: If this is actually what managers do, change the conditional “would” to present tense!

3.2.2. Tracking Risk

Tracking error as ~~a~~ measure for tracking risk was first defined by Tobe in 1999 (Tobe, 1999) as a percentage difference. Nowadays it is calculated as a standard deviation of return differences. It measures deviations in index tracking.

$$TE = \sqrt{\frac{\sum(R_d - \bar{R}_d)^2}{n-1}}$$

Equation 5: TE as defined by Tobe (1999)

In Equation 5, \bar{R}_d is the return differences mean and n is the number of observations. In denominator $n - 1$ is used, and not n , because our estimation of tracking error is based on a sample. Thus, according to Bessels's correction (cf. entry for 'variance (data)' in Upton & Cook, 2008), we estimate an unbiased estimator of the variance of population and use $n - 1$ degrees of freedom instead of sample size n .

Kommentar [AB187]: This does not make sense to me. Is it possible that a noun is missing here?

Kommentar [AB188]: Do you really "estimate an estimator", or do you rather "use an unbiased estimator"?

One ~~could~~can see that the TE is simply a standard deviation, which can be defined as

$$TE = \sqrt{\text{var}(R_i - R_b)}$$

Equation 6: Tracking Error Estimate

Equation 6 makes sense, as we use TE to estimate a variance of return differences. If TE is big-vast, we can conclude that tracking is performed poorly and that there are high dispersions between index funds and benchmark index return. (CFA, 2012, p. 473).

TE may be used as a probability measure. ~~For example if, for instance,~~ TE is 3 percent annually (which means that we use annual return differences), under the assumptions of cumulative standard normal distribution, the probability that index fund returns will vary from +3 to -3 percent, is 68%. ~~This In turn it means~~ in turn that the fund may outperform or underperform an index with a probability of 16 percent. Normally, TE had not exceeded 2 percent until 1999 (Lawtome-Brown, 2001, p. 224,226).

TE is often used as a key ratio for fund selection processes; it is also a goal estimator for a fund and a measure of performance of an index fund manager (Chiang 1998, p. 308). The causes of tracking error are tightly connected with return differences. They are costs, replication methods, turnover, management experience and enhancements (Chiang 1998, p. 308).

Kommentar [AB189]: Who are they? The causes? Please clarify.

Several authors claim that due to return distribution characteristics, using standard deviation is unsuitable to measure the risk of deviations of a fund from a benchmark; is inappropriate ~~due to return distribution characteristics~~, however, if we take samples from the market as a whole and use a long time horizon, the standard deviation should be a reasonable estimator of risk. (Louargant et al., 2006, p. 193).

Kommentar [AB190]: You have only referenced one author below.

In academic literature, TE minimization is a problematic process. Roll (1992) tried to solve the asset allocation problem, and, under the constraints of minimal TE , was not able to ~~obtain not~~ a mean-variance efficient portfolio. In addition, Ammann and Zimmermann (2001) showed that while return correlations within a fund falls, TE raises. Furthermore, according to research by Lawtome-Brown (2001, p. 224), tracking error could be easily underestimated due to ~~the fact of~~ volatility clustering, which violates stationarity of volatility.

Kommentar [AB191]: Please compare with spelling of this name in your reference list, where the same name author occurs as "Lawton Browne", and correct accordingly.

~~The above stated~~ Equations 5 and 6 show the most common notation of calculating Tracking Error. Apart from this definition, for our analysis we will make use of two additional estimates which were used by Frino and Gallagher (2001) and will be introduced in eChapter 4 of this work.

3.3. Funds

3.3.1. UITs, Open-end- and Closed-end Funds

Investment companies provide services for investors who are not professionals in finance. Usually they are separated in open-end funds (mutual funds), closed-end funds (CEFs), or unit investment trusts (UITs).

Kommentar [AB192]: The companies? Please specify. Otherwise "they" sounds as if referring to "investors".

Open-end investment companies or mutual funds

In this fund type investors purchase or redeem shares of the fund directly from the company or by contacting a broker. Assets of a fund are reduced when shares are repurchased and vice versa. If ~~one would like an investor intends~~ to buy shares from a fund, ~~according to the security regulations,~~ a prospectus must be disclosed to the potential buyer ~~as stipulated by the security regulations.~~ It has to inform about management fees, other expenses, risks and minimum investments. (Anderson et al., 2010, p. 4).

Kommentar [AB193]: The prospectus?

Mutual funds, which apply a more passive strategy in replicating an index are called mutual index funds (SEC, 2007). This type of funds ~~is we refer~~ considered to in our study, ~~since~~ we ~~want intend~~ to research their tracking performance in comparison to ETFs.

Closed-End Investment Companies

In a closed-end Investment Company, shares are distributed at an initial public offering (IPO) which is preceded by the issuance of a fund prospectus. After the IPO, money obtained by the fund is invested according to the policy statement in the prospectus. The difference to mutual funds is that the closed-end fund issues shares only once and investors ~~can~~ not liquidate shares. Instead, they can exchange shares on the secondary market or over the counter (OTC). ~~One should~~ It should be noted that there are no legal requirements stipulating that the price of the shares should represent the fund's current assets. Thus it is determined by supply and demand on the market. Net assets (Assets – Liabilities) divided by the number of shares outstanding ~~gives~~ produces the net asset value (NAV); it is used as a measure of the relationship between stock price and a fund's assets value.

Kommentar [AB194]: What exactly? The price? Please clarify.

Kommentar [AB195]: The dash is incorrect here. Unfortunately I could not find a safe solution to the problem here by means of an internet search. If these two words form one term, it might be "assets liabilities" or "asset-liabilities". If these are two independent terms it might be "assets and liabilities". Please check in your literature and correct accordingly.

$$D = \frac{NAV - MV}{NAV}$$

Equation 7: Premium or Discount of Funds

In Equation 7, *MV* is a market value of a share, *D* is the percentage difference between *NAV* and *MV*. If *NAV* is bigger than *MV*, it is called a *discount*. If it is less, *D* is called a *premium*. Discounts usually prevail on the market. (Anderson et al., 2010, p. 4)

Kommentar [AB196]: If you use italics for "MV" you should do the same for "NAV" in order to be consistent. Or is there any particular reason for this typographical difference?

Kommentar [AB197]: "smaller"

Unit Investment Trusts

Unit Investment Trusts (UITs) offer unmanaged portfolios. For a specific period of time UITs create a well-diversified portfolio, which is fixed over the whole period. Thus, UITs ~~can~~ not be sold or bought after initiation. Initial sale is usually performed by a broker. The main goal of buying a UIT is to obtain a diversified portfolio for a fixed period for a capital appreciation (stock trust) or a fixed return (bond trust). (Anderson et al., 2010, p. 5)

Excursus: Hedge Funds

Famed hedge fund manager Mario Gabelli wrote in 2002: "Today, if asked to define a hedge fund, I suspect most folks would characterize it as a highly speculative vehicle for unwitting

fat cats and careless financial institutions to lose their shirts" (Gabelli, 2002, p.1). Such statements are considerable since hedge funds are often referred to as highly profitable investment companies, which use advanced strategies to diversify risk. Negative opinions emerged mainly due to large failures of hedge funds in the 1990s, 2000s and -2000s, 1990s. Hedge funds are a limited partnership, which accepts an investor's money and invests it in a pool of securities. They use different enhanced strategies to obtain absolute returns. Such strategies employ arbitrage strategies, event driven strategies, short selling, use of derivatives, and leverage. Thus, hedge funds are popular in bear markets. (Bollen & Pool, 2012)

Kommentar [AB198]: Best word? Perhaps something in the line of "of particular importance"?

Kommentar [AB199]: Who? Hedge funds? Please specify.

One can see that a hedge fund is similar to a mutual fund; however, they differ significantly in terms of return goals. For To give an example, if the market is down 10% and a mutual fund only 7%, it would be a success for a mutual fund. A hedge fund's target absolute returns, by contrast, on the other hand are not correlated with the market, and should always to be substantial (around 6--9% annualized return). In theory, this had to be achieved by using more sophisticated strategies in comparison to mutual funds. Moreover, hedge funds are not obliged to be registered under the SEC, as only financially sophisticated investors are accepted to invest. To sum up, hedge funds should reduce risk as it is professionally managed by using enhanced strategies. In reality, however, hedge funds tend to strive towards higher returns, which eliminates safety and leads to high risks and in many cases to bankruptcy. (Anderson et al., 2010, p. 6)

Kommentar [AB200]: Please note: there is an inconsistency in your entire thesis with regard to the punctuation around sources which are given at the end of paragraphs. Please see my comment about punctuation around sources in your working document.

3.3.2. Exchange Traded Funds

Exchange Traded Funds representare a younger version of and a special case of to traditional index funds. Both fund types aim to provide investors with access to the return of a certain benchmark. Yet, their characteristics differ with respect to tradability, index replication and creation and redemption process.

Even though the SEC legally classifies ETFs as open-end companies or Unit Investment Trusts (SEC, 2010a), Deville calls ETFs a hybrid instruments, which combine the advantage of open-end unit trusts and closed-end funds. This is explained on the one side-hand by the ETFs' tradability, which is comparable to that of closed-end funds, and by the ETFs' creation and redemption process on the other sidehand, which takes the form of that of open-end funds (Deville, 2008, p. 9). In a nutshell, ETFs can be traded on a continuous basis throughout the trading day while having the possibility to create or redeem ETF units according to the current demand.

Kommentar [AB201]: Perhaps insert quotation marks?

Kommentar [AB202]: What exactly? Please clarify.

Kommentar [AB203]: Do indeed EFTs have that possibility or rather traders/investors...?

Tradability

The origin of Exchange Traded Funds and their unique trading characteristics lies in the first Exchange Traded Index Fund to be launched. Released by Standard & Poor's (S&P), the fund was called Standard and & Poors's Depository Receipts (SPDR), or also called "Spiders", and followed the objective of to providing the investment results of the S&P 500 in price and yield performance. Being traded on the American Stock Exchange (like an ordinary stock), one Spider has a price equal to approximately one -tenth of the S&P Index. One of the features that distinguish ETFs from Mutual Index Funds and drives sufficient liquidity is their creation and deletion throughout an in kind transaction. (Elton et al., 2002, pp. 454,466)

Kommentar [AB204]: Commonly called "spiders", or by anybody specific? In the latter case please reference!

Kommentar [AB205]: Of EFTs of Mutual Index Funds?

Creation and Redemption

Creation and Redemption is the process of how rising demand for an ETF is served and vice versa. The ability to create and redeem ETF units on a continuous basis (during while the

markets are open) is unique for ETF companies and essential for their trading characteristics and therefore important to understand for ~~doing~~ researchers regarding investigating this fund type.

Even though ETFs are often linked to closed-end funds in that ETF shares can be purchased and sold on exchange markets, the ability to create or redeem ETFs in-kind silhouettes them from the latter (Meziani, 2006, p. 41). In-kind creation means investors can turn in the share the ETF uses to replicate the index plus an additional cash amount in order to receive an ETF Creation Unit (CU). Likewise, Creation Units can be turned in and the stock basket used for replication is received, i.e. an ETF unit is liquidated (Elton et al., 2002, p. 466). This ongoing process is one of the reasons why ETFs tend to trade within a tight band around their Net Asset Value, as any price difference between ETF and stock basis creates arbitrage opportunity that will be used by market makers (Abner, 2010, p. 179; Ferri, 2009, p. 36).

Kommentar [AB206]: This is totally unclear. Who is "them", and who is "the letter" (I suppose you might mean "the latter"). Please rework the sentence so that it becomes clear for your reader what relates to what.

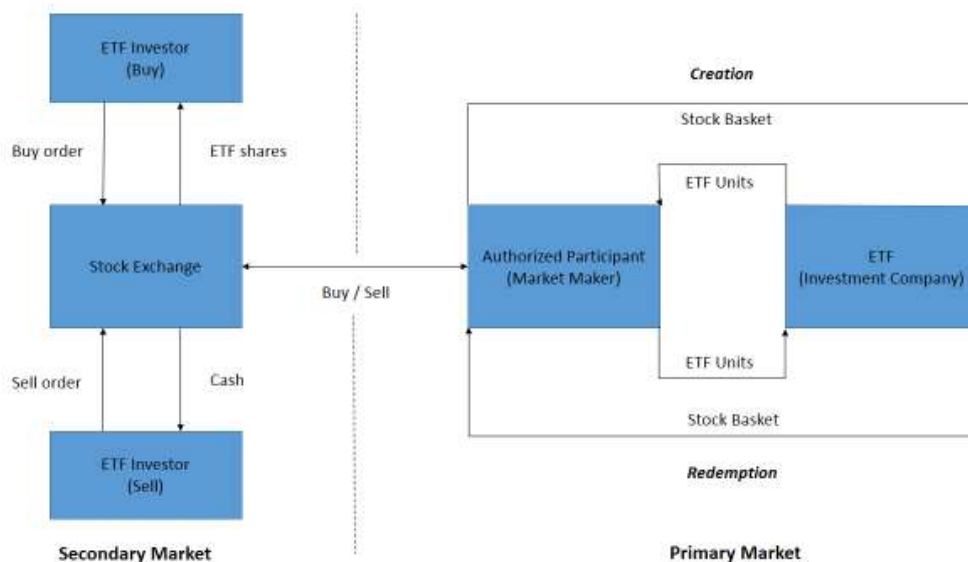


Figure 10: ETF Trading Mechanism; Source: Own design, motivated by Deutsche Bank Research (2008, p. 8).

Figure 10 shows the trading mechanism, including the creation and redemption process of Exchange Traded Funds. It is important to notice, that private investors only have access to ETF shares via the stock exchange and thus cannot request creation units directly from the company. This right is exclusively reserved for authorized participants (APs), who use the premium or discount spread between ETF and NAV to realize arbitrage (Ferri, 2009, p. 36). Once an AP delivered the underlying stock basket to the fund company she receives ETF Creation Units (CUs) in return, which are large blocks of ETF shares, usually numbering up to 50.000 shares. The size, however, can vary according to the respective ETF. She then can may sell the ETF shares from the creation unit at the secondary market, i.e. at the stock exchange, and thus provide individual investors with sufficient ETF liquidity (Ferri, 2009, p. 34).

Mutual Index Funds, on the other hand by contrast, miss-forgo this "in-kind" creation and redemption. Here, investors deliver cash in order to buy fund shares or receive cash in order

to redeem ~~them~~. This leads to additional fund flows, triggering additional transactions costs since the fund management has to invest into the benchmarks constituents itself. Furthermore, Mutual Index Funds have to ~~hold~~ a certain percentage of assets uninvested to meet redemption needs. Due to the dependency on the liquidity of an index constituent stocks, Kostovetsky ~~calls-identifies~~ this movement of cash in and out of index funds ~~as~~ a secondary cause of tracking error. (2003, p. 82)

Kommentar [AB207]: The shares?

Kommentar [AB208]: Perhaps rather "keep"?

3.4. Fund Management

3.4.1. Active and Passive Management

In general, fund management strategies can be labeled as active and passive. Passive strategies are popular nowadays due to intuitive simplicity and overall higher stable returns in comparison to active strategies. Passive investment refers to stock or bond portfolio managing using simple buy and hold or index replicating strategies. One of the examples of passive strategy is index fund management. ~~For example if the~~ Nordea stock constitutes 4-% of an index, ~~for instance,~~ a fund will allocate 4-% of its funds ~~to~~ that stock. According to recent performance measurement, passive strategies outperformed more than 75% of active managers during the ~~pl~~ast 5 years. During the ~~pl~~ast 20 years, passive management outperformed more than 80% of active management. (Elton et al., 2010, p. 696)

Usually, it is assumed that index funds ~~would~~ underperform an index, ~~as was stated before,~~ due to additional costs. ~~However, S~~some studies, ~~however,~~ suggest ~~that it could be~~ the opposite ~~way~~. This is due to the fact that ~~big-large~~ indices often miss small stock dividends. In addition, index funds could ~~sometimes~~ sell owned stocks to willing investors ~~sometimes~~ above market price, usually if investors ~~want-wish~~ to ~~shorten~~ a stock, ~~which is, however, but it is~~ not available freely on the market. Given these two assumptions, ~~an~~ index fund might outperform an index over long time. It is also clear that ~~none~~ index fund exactly matches an index, due to ~~different facts already mentioned above~~. ~~It~~ means that in growth markets, ~~the performance of~~ funds ~~perform a little worse and vice versa~~ is inferior to their performance in down markets. (Elton et al., 2011, p. 697)

Kommentar [AB209]: Either reference the place where these facts are mentioned in your thesis, or name them (or at least a selection) again here.

Kommentar [AB210]: What exactly? Please clarify.

It is important to mention that although passive management commonly refers to managers, who try to use ~~a~~ buy and hold strategy to replicate an index, ~~this~~ is not always the ~~whole picture~~ complete truth. Passive strategy may also involve analysis by using past data, ~~for example it~~ could, ~~for example,~~ be a passive strategy to buy stocks with low P-/B ratios. However, when it comes to forecasting, it is assumed that ~~it-this is, in fact, is~~ an active strategy. (Elton et al., 2011, p. 697)

~~On the other In juxtaposition~~ side of to passive strategies ~~comes~~ stands an active management, ~~When following~~ during such a strategy, one should determine a benchmark. It ~~would-will~~ be used as a measure of performance, ~~Thus~~ management will focus on implementing different strategies to outperform a pre-chosen benchmark, which is usually an index. There ~~are-is~~ a big vast variety of strategies a manager could use, however, ~~there are~~ three most used strategies exist, which are ~~used most frequently and are~~ worth ~~being considered. to have a closer look at~~ ~~These are known as~~; market timing, sector selection and security selection. Market timers focus on changing a Beta of their portfolio according to market forecasts, thus obtaining ~~the~~ desired sensitivity towards the market. Security selectors look for specific characteristics of a stock based on its analysis and, as a result, make a bet against a market, ~~They~~ increase weights of a stock in a portfolio (positive bet) of an undervalued stock and decrease the weights of overvalued stocks. Sector selectors are quite similar to security selectors, but they

Kommentar [AB211]: Which strategy? An active strategy?

Kommentar [AB212]: Who? Security selectors?

focus on specific sectors. Possible characteristics of a sector could be: industrial classification (energy, banking, utilities, etc.), product classification (e.g. healthcare, services, consumer product, etc.), stock characteristics (e.g. growth stocks, stable stocks, etc.) and sensitivity of a group of stocks to specific phenomena on the market (e.g. exchange rates or yield curve). It is common that managers usually specialize in a particular industry due to the continuous increase ~~in-of the~~ specifics of each industry. (Elton et al., 2011, p. 699)

It is difficult to determine, whether the active or passive strategy is superior, although many recent studies based on the net returns point out that passive strategies perform better. In general, active management has to overcome several categories of costs in order to deliver substantial returns. These categories are:

- cost of forecasting (managers with good forecasting ability usually demand high fees);
- cost of diversifiable risk, as portfolios have more diversifiable risk in comparison to an index, ~~which-where~~ the risk is close to zero. Investors usually demand compensation for excess risk;
- higher transaction costs, as active investing usually requires higher turnover in contrast to low turnover in buy and hold strategies;
- cost of taxes due to early gain realization. Actively managed funds have a high turnover and, ~~thus~~ according to the tax law, should thus recognize tax on the gains if the fund sells stock. Although passively managed funds are also concerned with taxes (e.g. if an investor sells his part, a fund should also recognize taxes on gains or losses), they do not have a high turnover and thus recognize taxes not so often. (Elton et al., 2011, p. 701)

3.4.2. Passive Index Tracking

For our empirical study we focus solely on passively managed index tracker funds. After having distinguished active management from passive management, we now discuss the different forms of passively managed fund companies in more detail. Our main focus ~~for~~ ~~is that matter lies on~~ open-end index funds and Exchange Traded Funds, which we aim to compare ~~throughout in the course of~~ this ~~paper~~ study.

3.4.3. Index Tracking Strategy

As we have seen, due to structural differences between the theoretical construct 'Index' and the physical construct 'Fund', a certain tracking error in index fund performance is indeed inevitable. Therefore, after having agreed on a fund strategy, emitters have to decide on the further motivations and characteristics of the new fund. ~~I.e. it is~~ It is to be decided whether the fund portfolio will be actively managed actively with the attempt to outperform the index performance, or if ~~the goal is~~ a passive strategy is aimed at, which gives the fund a pure tracking characteristic within a certain accuracy limit (Wagner, 2002). Since our sole focus lies on passively managed funds, we have a closer look ~~on~~ at the replication methods fund managers can ~~make use of~~ in order to reduce the trade-off ~~problematic~~ between replication cost and replication quality.

Kommentar [AB213]: A fund cannot have motivations itself. Do you mean motivations for creating the fund? Please specify.

Kommentar [AB214]: Page?

The first and most intuitive method in building a portfolio that replicates a benchmark's performance is to invest in all the benchmark's constituents using exactly the ~~exact~~ same proportions (Frino & Gallagher, 2001b, p. 3). This straightforward method where managers rebuild a smaller version of the benchmark is called full replication approach. Yet, in practice, a full replication of the index can be unpractical especially when the target index consists of a large number of constituents, which leads to undesirable transaction costs, once the index is re-adjusted (i.e. constituents are added, deleted or weights are changed) (Di Tollo & Maringer, 2009, p. 130). A full replicating Index Fund then has to ~~proportional~~ buy or sell the effected stock proportionally to its market value (Blume & Edelen, 2002, p. 12). Tollo and Maringer therefore ~~formulate~~ describe the optimization problem of index tracking as "to find asset weights so that the portfolio's behavior differs from the benchmark's as little as possible" (Di Tollo & Maringer, 2009, p. 130).

3.4.3.1. Physical Replication

Investing directly into ~~an indices~~ the constituent of an index in order to replicate its performance, as it is done with full replication, ~~can~~ may be called a physical replication approach, as fund management accesses stocks which are an actual part of the index. As was discussed before, full replication is often a non-optimal solution due to the incurred costs. Therefore, solutions have to be found in order to replicate the index performance without fully replicating it.

Another, yet physical approach is ~~the~~ partial replication (or representative sampling). Here the fund management makes use of a representative sample of constituents, where the chosen stocks in the fund portfolio reflect the same weights with which they are listed in the respective index (Hehn, 2005, p. 9). If a fund portfolio is constructed under transaction costs and liquidity constraints (cf. Bamberg & Wagner, 2000, p. 526), ~~this~~ the approach of approximate index replication is especially useful if an index holds a large amount of constituents, including numerous very small (less influential) and few large positions which dominate the direction of performance. To ~~draw a picture~~ illustrate this, one can look at we might take as an example an index fund tracking the MSCI World Index in 2008 when it listed 1944 companies. While the smallest constituent ~~made~~ amounted to 0,0008% of the index, the ~~big~~ largest made up for 1,8%. ~~Looking Regarding at the~~ iShares, MSCI World (IQQW) shows that the ETF in 2008 counted 932 companies (cf. Ehmann, 2008). The challenge with physical replication of complex indices is therefore to find the right distribution between the risk of occurring costs and the maximum tolerated tracking error.

Sampling can also be achieved by ~~making use of~~ using mathematical algorithms to construct a portfolio of a determined number of stocks, which best track the index. Another approach is based on investing using characteristics weights of an index. ~~Some of the usual~~ characteristics usually are industry, capitalization and sector. ~~For example, if~~ the index consists of stocks from different industries (e.g. consumer products, financials, healthcare, etc.), for example, one would invest in a smaller set of stocks, which matches the index to the amount specified by the characteristics (e.g. same percentage in industrial, financial and healthcare stocks). (Elton et al., 2010, p. 697)

Kommentar [AB215]: Is this correct? "Characteristics weights" sounds a bit odd.

Kommentar [AB216]: Rather "finances"?

Tracking error vs. Total Return

Choosing between full replication and sampling can be a tough task for a fund company. When reflecting on fund replication of the S&P 500 index,¹ Blume and Edelen point out the sensitivity of the trade-off when a single index constituent is deleted from the fund portfolio.

Kommentar [AB217]: Date and page missing.

¹ The S&P 500 index consists of the 500 leading U.S. large cap equities (Spindices, 2013).

Hence, following their example, if in 2000 a stock was removed from the fund portfolio which represented only 0,07% of the S&P 500 Net Asset Value, the subsequent standard deviation of the Tracking Error would be 2,6 basis points, while the standard deviation of the portfolio return maintains the same as prior to the change (Blume & Edelen, 2002, pp. 8–9). Even though the standard deviation of return remains unchanged, where Tracking Error is used by investors to measure the fund management’s tracking ability, an increase in Tracking Error standard deviation can have negative implications for delegated investment objectives (cf. Blume & Edelen, 2002, p. 2).

Kommentar [AB218]: In 2000 what? In the year of 2000? Or out of 2000 stocks? Please clarify.

3.4.3.2. Synthetic Replication

Apart from the physical replication, a newer trend in the ETF industry is the more complex synthetic replication. Even though Despite its higher complexity, 64% of the ETFs launched from the year 2009 decided to adopt a synthetic replication approach. This replication method is based on an exchange between the ETF and a counterparty, and is therefore also called swap-based replication. To set up a synthetic replication, an ETF invests in a stock basket which might, regarding investment strategy and composition, completely differ from the benchmark index. The swap contract then allows for a total return swap between both parties, where the swap partner receives the return of the ETF-emitters stock basket, and in return guarantees to deliver the benchmark indices’ return. (Ehmann, 2008; Abner 2010)

Kommentar [AB219]: Page numbers?

As the swap partner has to settle possible underperformances of the ETFs hedge basket, the architecture of a swap-based Exchange Traded Fund transfers the performance risk from the fund emitter to its swap-partner (Heidorn, et al., 2010, p. 7). In practice, the swap-partner is often the fund’s holding company (Meinhardt, Müller, & Schöne, 2012, p. 1).

Time	ETF (Stock Basket)	Value of Swap (Index – Stock Basket)	Swap-Contractant (Index)
Day 0	100	0 (0,00%)	100
Day 1	100	4 (3,84%)	104
Day 2	102	5 (4,67%)	107
Day 3	100	9 (8,25%)	109
Day 4	109	0 (0,00%)	109
Day 5	108	-4 (-3,70%)	104
Day 6	109	-8 (-7,92 %)	101

Table 1: Value Simulation of a Swap; Source: Own design, motivated by Deutsche Bank (2008, p. 8)

This constellation implies a contractant risk in the case of insolvency of the counterparty. According to the European fund guidelines UCITS (Undertakings for Collective Investments in Transferable Securities), this risk must not achieve more than 10% of the funds’ Net Asset Value, which is achieved by the obligation of ETFs obligation to hold at least 90% of its NAV (Heidorn et al., 2010, p. 8). In practice, many ETFs overly secure their portfolio in order to eliminate the contractant risk.

Kommentar [AB220]: Really plural? If singular, please change to “fund’s”.

² cf. inter alia db x-tracker ↔ Deutsche Bank; ComStage ↔ Commerzbank and Lyxor ↔ Société Général.

³ cf. inter alia db X-trackers CAC 40® UCITS ETF with a net swap exposure of currently 2,45% (db X-trackers, 2013).

Table 1 shows a fictive example of a swap-based index replication with the ETF-company on the one side and the swap-contractant on the other (usually the ETFs holding company). At day 0 the swap agreement between both parties is made and the initial stock basket is build up in such a way so that its NAV exactly corresponds to the present NAV on the benchmark index. In our scenario, the value of the index climbs from 100 to 104 at the first day after the agreement. This leads to a deficit of the ETF stock basket, which has to be aligned by transferring funds from the swap-partner to the ETF. The value of the swap from the ETFs' perspective increases to 4 and a contractant risk of 3,84% (4/104). On day 3 the stock basket's NAV reverses to its initial value, while the index NAV continues to increase to 109, which leads to a swap value of 9 and to a contractant risk of 8,25% (9/109). Being The risk ranging closely to the allowed maximum allowed risk, this is a strong sign for the fund management to react by resetting the swap; therefore, the swap-partner transfers the swap value of 9 to the ETF, which then uses the funds to reinvest in the stock basket so that the baskets and the index NAVs are aligned again. Day 5 shows the reverse development, i.e. the index NAV decreases against the stock basket. The incurred payment from ETF to the swap-partner implies a negative swap value and is seen as over-collateralization of the swap. To avoid growing over-collateralization, an equivalent amount of the stock basket can be liquidated and paid to the swap-partner.

Kommentar [AB221]: Full stop?

While investigating differences in tracking error of German ETFs that use full replication in contrast to those using synthetic replication, Meinhardt et al. found that, even though German ETFs suffer from high tracking errors, the choice for of either one of the replication methods cannot be explained by the tracking error (Meinhardt et al., 2012, p. 13). According to them, the decision can rather be explained due to on grounds of the liquidity or illiquidity of the benchmark index. Thus, it may be more convenient to use synthetic replication in order to replicate an index with illiquid constituents.

Kommentar [AB222]: Who? Rather give the source again.

3.4.4. Fund Related Costs

Investment companies commonly try to attract new investors by advertising their passive index trackers with low management fees as compared to fees of enhanced funds. In fact, Hübscher states that costs are the most important reason why managers of active funds experience have a hard time difficulties to beating the index (2005, p. 77). Khorana et al. (2009, p. 1295) found that Index Funds consistently charge 36 basis points lower management fees than actively managed funds. (2009, p. 1295)

Hübscher further names the factors which lead to this difference in costs for actively managed funds:

Management Fees

Significantly higher Management Fees due to the need for analysts, researchers etc. for maintaining an active portfolio.

Trading Costs

While passive portfolios cause a turnover of usually around 10% per year, active funds have a turnover between 75-100% p.a. This leads to higher trading costs due to Brokerage Fees, Taxes, Spread and Market Impact in relation to passive portfolios. (Hübscher, 2005, p. 78).

Total Expense Ratio

Beside management fees, which include charges for management services, a more common and conservative measure is the funds' Total Expense Ratio (TER). TER covers all annual operating costs and is defined by Morningstar as follows:

Kommentar [AB223]: Is the plural correct here? If it is a singular it must read "fund's".

"The expense ratio typically includes the following types of fees: accounting, administrator, advisor, auditor, board of directors, custodial, distribution (12b-1), legal, organizational, professional, registration, shareholder reporting, sub-advisor, and transfer agency. The expense ratio does not reflect the fund's brokerage costs or any investor sales charges." (Morningstar, 2013).

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As ~~seen-apparent~~ in the definition, the expense ratio ~~misselacks~~ brokerage costs. Since TER frequently serves as a target ratio for fund managers, Herring and Hunke explain this lack of inclusion through the need of Managers to react to recent market developments even if this means to exceed the target expense ratio. They further state, that investment companies are not obliged to publish such costs in order to protect cost advantages compared to the competition, where the costs ~~o~~in case of higher transparency can exceed their benefits. (Herring & Hunke, 2001, pp. 908-909)

Even though the TER excludes costs, such as front-end loads, back-end loads and certain distribution costs, as by the investment companies frequently updated and published ratio, it serves as an accessible and representative ratio for occurred costs fees. ~~(#F~~For a more thoroughly measure refer e.g. to the ~~total shareholders costs~~ as ~~used-termed~~ by Khorana et al., (2009, p. 1286). TER is calculated as

$$TER = \frac{TC_t}{TA} * 100$$

Equation 8: Total Expense Ratio

Kommentar [AB224]: I do not understand this sentence and it is unclear in which way it relates to the main clause. I cannot repair it for you because of limited subject knowledge. Please try to clarify the sentence by showing the relations between the different concepts clearly, i.e. what the "ratio" refers to. Perhaps it helps to split the sentence and use a simpler sentence structure.

Kommentar [AB225]: Why italics?

~~where~~ TC_t are the total costs ~~which~~ occurred in business year t divided by the average total assets (TA) of the reported period. (cf. inter alia BVI, 2010, p. 1; Herring & Hunke, 2001, p. 909)

Since the data collection and calculation of more complex cost ratios would exceed the scope and resources of this thesis, we decided to accept TER as a satisfactory indicator for occurred and passed on costs ~~o~~in which we can base our analysis.

3.5. Review of Previous Literature

3.5.1. ETFs vs. Mutual Index Funds

As we saw throughout this chapter, there are ~~some-certain~~ features shared by both, Exchange Traded Funds and Mutual Index Funds, and ~~there are some-also features~~ that distinguish them one from ~~each an~~ other. ~~This part of the chapter gives a summary of previous~~ literature that focused on similarities and differences in benchmark tracking between the two fund types.

Kommentar [AB226]: Please see comment above.

Elton et al. (2002) compared the performance of the first ETF (SPDR) with the Vanguard Index fund family. They found that both investment vehicles have tracking errors and ~~usually~~ an investor, who holds SPDR ~~usually~~ receives on average 18 basis points (bps) less return than ~~an~~ index fund investor. ~~They~~ point out that the benefit of ETFs is that they ~~could~~ be traded during ~~the~~ day, thus additional liquidity of ETFs add additional costs. Further, if one ~~would~~ compares SPDRs with an index, return underperformance ~~would isbe~~ around 29 bps, which can be traced back in management fees (18,45 bps) and loss from not reinvesting dividends (9,95 bps). The notion of not reinvested dividend is similar to ~~Gastineau (2004)~~. ~~On the other hand, Apart from that, investigating an investigation of~~ tracking differences of SPDRs, disregarding expenses and dividends, shows that their tracking error is tiny (Elton et al., 2002, pp. 464-465).

Kommentar [AB227]: Rather repeat your source.

Kommentar [AB228]: Rather "can"? Isn't this a real fact?

Kommentar [AB229]: What are you trying to say here? A notion in a financial context can hardly be similar to a person. Apart from that, you should also identify the similarity for your reader, and not just state that a similarity exists. Please revise!

Kostovetsky shows that the key differences between Mutual Index Funds and Exchange Traded Funds are to ~~be found~~ in management fees, shareholder transaction fees and taxation efficiency. Assuming identical tracking and other restrictive assumptions, he affiliates a one-period model which shows that with ~~respect regard~~ to fees, dividend treatment and tax structure, ETFs become superior to Mutual Index Funds with increasing investment levels. While for smaller investments Mutual Fund return is higher, ETFs become preferable for higher investments, ~~while and~~ the investment level for the change of preference depends on tax rates, expense ratio, brokerage commission, number of purchases and capital gains distribution ratio. ~~Extending An extension of his~~ research to a multi-period model shows that, if the investment is considered over a longer time period, ~~and~~ even though ~~initially~~ index funds are ~~initially~~ better off, ~~after an extended period of time~~ ETFs clearly dominate ~~after an extended period of time~~ due to superior tax efficiency and lower expenses. This preference increases ~~quadratic~~ with the number of time periods considered for the investment. (Kostovetsky, 2003, pp. 85–91).

Kommentar [AB230]: Year and page number missing.

Kommentar [AB231]: Whose?

Kommentar [AB232]: What do you mean here? This sounds a little odd.

Kommentar [AB233]: Page?

Agapova (2011) also argues that the existence of ~~these~~ similar investment vehicles separates investors in two different categories according to their needs. She investigates the clientele effect and points out that ETFs possess higher liquidity, lower expense ratio and higher marginal taxes. Index funds, ~~on the other hand by contrast~~, have lower taxes and transaction expenses, because shares are purchased directly from a fund ~~and~~; thus ~~they do not~~ require brokerage fees. As a result, long-term investors ~~would choose ETFs~~ (low management fees) and short-term investors ~~opt for~~ index funds (no commission costs). ~~She Agapova~~ states that ~~a lower TE~~ is more important to investors than returns, ~~since as~~ they base their strategies on indices, thus seeking perfect replication. In a nutshell, she found that both, ETFs and MIFs ~~which track Dow Jones~~, have on average the same tracking error, which indicates that they are not statistically distinguishable in their ability to track the index. Further, both fund types ~~do not neither outperform~~ nor underperform the index (Agapova, 2011, p. 332). Based on her investigation, ~~she Agapova (2011)~~ concludes that ETFs and index funds are good but not perfect substitutes and they will coexist in future. Their coexistence will enhance ~~the market's~~ functionality, as they provide more options for investors.

Kommentar [AB234]: If it is actually a fact that long-term investors choose ETFs, please use the present tense instead of conditional!

Kommentar [AB235]: Do MIFs and ETFs always track Dow Jones or are you referring to a particular selection of ETFs and MIFs which do?? If the latter is the case, please remove the comma after "Jones". If the former is the case, please leave the comma and place an additional comma after "MIFs".

Kommentar [AB236]: Page?

Svetina and Wahal (2008, p. 17) ~~give~~ further evidence for the substitutional character of ETF and MIF by showing a reduction in net flows to existing Mutual Index Funds ~~at~~ the moment a competing ETF enters the market (i.e. an ETF ~~is~~ following the same strategy). Apart from very little evidence for better performance of ETFs when ~~compared~~ net of fees, they found no statistically significant difference between MIFs and ETFs, but state that many ETFs offer access to strategies which are so far not covered by Mutual Funds, especially regarding narrow market segments (Svetina & Wahal, 2008, p. 13).

Kommentar [AB237]: "Compared to"?

While seeking to understand the growth of ~~the~~ ETF industry, ~~Guedj and Huang~~ find that neither the trading structure of open-end index funds nor ~~that one~~ of ETFs ~~are is~~ superior to one another. According to them it is rather a different allocation of transaction costs that drives investors' decision for one fund type and against the other. While induced transaction costs are shared by mutual fund investors (cross-subsidization), they are borne individually by ETF investors for every transaction. Thus, the open-end mutual fund structure provides a certain liquidity insurance which makes it more attractive for short term investors who, if using ETFs, would induce high transaction costs they had to bear individually. These results about decision making are in accordance with Kostovetsky's (2003) ~~findings~~. ~~They Guedj and Huang~~ (2008, pp. 13-35), however, further discuss the possibility of higher costs for the

Kommentar [AB238]: Year, page?

Kommentar [AB239]: Page number missing.

Kommentar [AB240]: Which findings? Either state them, or, if you have discussed them earlier in your paper, please reference the section.

liquidity insurance of mutual funds due to moral hazard issues arising from the shared cost structure. (Guedj & Huang, 2008, pp. 13–35).

Blitz et al. (2010, p. 652) ~~made did~~ a combined research ~~of on~~ index tracking funds, including Mutual Index Funds as well as Exchange Traded Funds listed in Europe and using the most important, equity market indices from the U.S., European, and Japanese, as well as from the global and ~~the~~ emerging markets as benchmark (Blitz et al., 2010, p. 652). First, they show that basically all passive funds under investigation substantially underperform their benchmark with an average of 84 bps. When investigating the extent to which underperformance can be attributed to the Total Expense Ratio, Blitz et al. show that for the average underperformance of 84 bps, an average of 59 bps can be allocated to the Total Expense Ratio. They further allocate the remaining part to dividend taxes, which are not accounted for when calculating Total Expense Ratios. Hence, these taxes almost entirely explain the ~~after other expenses~~ remaining underperformance ~~after other expenses~~, and ~~make~~ bring the explanatory power of taxation as reason for underperformance at least on a par with fund expenses. (Blitz et al., 2010, pp. 654–662)

One of the few ~~research studies~~ that matches ETFs and Index Funds which track the same indices is presented by Rompotis (2005). He matches 16 ETFs and Index Funds on the same ~~;~~ mainly U.S. ~~—~~ benchmarks in order to perform an empirical ~~comparing comparative~~ investigation, regarding return, volatility, tracking ability, expenses and the relationship between expenses and performance (Rompotis, 2005, p. 8). ~~Having used~~ Using a time period between the beginning of 2001 ~~to and~~ the end of 2002, he ~~doesn't was not able to find~~ significant differences in return and volatility compared to the benchmark, for neither ETF nor Mutual Index Funds. A regression analysis shows that neither Index Funds nor ETFs derive any excess return, but also that ETFs seem to track the index composition more closely compared to Mutual Index Funds. Examining the respective cost structure, Rompotis (2005, p. 15) first shows that the directly stated costs for ETFs are significantly lower than for Index Funds ~~(2005, p. 15)~~. However, further discussion shows that ETFs bear hidden transaction costs and brokerage fees. Applying another regression between returns and expense ratio, he calculates a significant positive relationship only for raw returns of ETFs (Rompotis, 2005, p. 16).

Kommentar [AB241]: Page number missing.

Kommentar [AB242]: ETFs?

Kommentar [AB243]: Best word? Perhaps "Investigating"?

Frino and Gallagher (2001) performed substantial research in the investment product industry. They compared ETFs, Mutual Index Funds and funds with an active strategy in relation to S&P 500 tracking. Their analysis was based on a five~~5~~—years span from 1995. The key findings were that both passive and active financial instruments underperform the index net of costs, but passively managed funds, i.e. both ETFs and MIFs, have higher returns than actively managed funds. ~~Referring to~~ In terms of our research area, Frino and Gallagher stated that index funds underperform an index due to market frictions, which an index ~~doesn't~~ has ~~is not subjected to since~~ being it is calculated only "on a paper". ~~Next, Frino and Gallagher (2001, pp. 7-8) B~~ based on Roll (1992), Pope and Yadav (1994) and Larsen and Resnick (1998), Frino and Gallagher (2001, pp. 7-8) further demonstrated three conceptual ways in calculating the tracking error: (1) as a standard error of regression, (2) as standard deviation of return differences, and (3) as an absolute return difference. Their check for seasonality of tracking error revealed that it is higher in January and May and at quarter endings. In addition, their research tried to discover the key sources of tracking error. Similar to Chiang (1998) and other studies performed over the last decade, they agree that stock liquidity, index rebalancing, transaction costs, dividends, volatility of particular index and other sources will lead to the underperformance of an index fund relative to its benchmark.

Kommentar [AB244]: To 2000?

Kommentar [AB245]: Please check if this is what you mean here. There was something missing between "funds" and "both", but as a layperson in the subject I cannot be sure if my suggestion is correct. I made it nevertheless in order to show you that something is missing here. Please check and revise!

Kommentar [AB246]: Year and Page?

Kommentar [AB247]: Source and page number?

Furthermore, they found that TE is highly dependent on ~~the~~ “dividend effect” of S&P 500 constituents, timing and ~~the~~ size of index divisor adjustments.

Kommentar [AB248]: If you quote please give a source.

Using different measures of tracking error estimate, Meinhardt et al. compare replication methods of Exchange Traded Funds. They state that German ETFs generally suffer from high Tracking Error and that in contrast to previous claims, synthetic ETFs and full replication ETFs do not show ~~a~~ different Tracking Error for their sample. Applying multiple regression, they investigate influential factors that contribute to Tracking Error and estimate coefficients for total expense ratios to be between 0,5875 and 1,0622 depending on the TE calculation method. They further show ~~;~~ that apart from Total Expense Ratio, risk and volume are determinants of Tracking Error (Meinhardt et al., 2012, pp. 18–21).

3.5.2 Tracking Quality and Market Condition

It ~~seems likely to can be~~ assumed ~~d~~ that Tracking Error is correlated with the volatility of the ~~market~~ market; i.e. ~~if-when~~ risk increases, the index becomes more fluid and it ~~gets-becomes increasingly difficult harder~~ for fund managers to apply sufficient tracking strategies. The relation between ETF Tracking Error and market volatility throughout ~~the~~ time was first explored by Frino and Gallagher (2001). In their study they found a seasonal pattern insofar ~~that-as~~ TE was highest in January and May and lowest in June ~~;~~ as a result of dividend announcements ~~which~~ was instantly absorbed by the index price and only delayed by index fund managers. Further studies with a focus on TEs and market conditions ~~were done throughout~~ are presented in several papers by Rompotis (2006, 2011), Blitz and Huji (2012), Aber et al. (2009) and Ivanov (2012).

Kommentar [AB249]: What is the “which” referring to? Please clarify and try to split this rather long sentence into two sentences.

Rompotis (2006, p. 4) observes that TEs are strongly persistent ~~on~~ a short-term level and positively related to market risks. E.g. when regressing the Tracking Error of 74 iShares ETFs (traded in ~~the~~ U.S. during 2005 and -2006) to ~~the~~ index volatility, fund volume and trading premium, he found that ~~on average, risk on average~~ had a coefficient of 0,37 and was significant at ~~the~~ 1% level ~~(2006, p. 4)~~. In a similar study on iShares between 2002 and 2007, he regressed TE to index volatility and obtained ~~a~~ coefficient ranging from 0,5 to 0,7 (2011, p. 34). Blitz and Huji (2012, p. 155) noticed that TEs are higher during high return volatility of an index. This trend was observed regardless of the frequency used to calculate returns ~~(2012, p. 155)~~. ~~Aber et al.~~, ~~S~~similar to Frino and Gallagher (2001) and Elton et al. (2002), ~~Aber et al.~~ (2009, p. 219) state that tracking error is strongly affected by index volatility, the fund’s beta and other market factors ~~(2009, p. 219)~~. ~~Looking- Investigating on~~ REIT (Real Estate Investment Trust) ETFs, Ivanov found that TEs increased during ~~and decreased after~~ the U.S. subprime mortgage crisis ~~of 2007—2009~~ in the U.S. ~~between 2007 and 2009 and decreased after it~~ (2012, p. 4).

3.6. Formulation of Hypotheses

~~Previous~~ literature agrees ~~on~~ that there is room for co-existence of ETFs and Index Funds for different reasons, of which the most discussed are liquidity, tax differences and fund expenses. ~~The~~ ~~C~~comparing ~~son~~ of fund types on the same benchmark resulted in only small return differences for both categories, even though the overall tracking accuracy seems to be ~~a~~ ~~bit~~ ~~slightly~~ higher for Exchange Traded Funds. However, a direct comparison of ETFs and Mutual Index Funds was so far not performed on European benchmark funds exclusively. In order to tie in and contribute to former discussions, we expand ~~our~~ ~~the~~ research to European indices and hence to their particular characteristics regarding liquidity, volatility and composition. As a sensible subject of passive strategy investing, we investigate expense ratios and their effect on index tracking accuracy.

Kommentar [AB250]: Previous to what? Previously reviewed in this thesis, or previously published?

Kommentar [AB251]: Which one? Where and when was it done?

Restatement of the Research Question

Do Exchange Traded Funds replicate the Performance of European Indices better than Mutual Index Funds?

Sub-questions:

1. *Is tracking quality correlated with the states of the European financial markets?*
2. *Is there a difference in fund costs?*

Hypothesis 1

H_0 : The average return difference between Mutual Index Funds and their benchmark index is equal to zero.

H_A : The average return difference between Mutual Index Funds and their benchmark index is not equal to zero.

Hypothesis 2

H_0 : The average return difference between ETFs and their benchmark index is equal to zero.

H_A : The average return difference between ETFs and their benchmark index is not equal to zero.

Previous ~~literature-research~~ suggests that ~~in~~ general index funds in the form of passively managed open-end funds are not able to track their benchmarks without underperformance (cf. Blitz et al., 2010). However, findings about the magnitude of underperformance when comparing ETFs to Mutual Index Funds seem to differ. While Rompotis (2005), ~~finds-reports~~ no significant difference, Elton et al. (2002) suggested that on average, the SPDR ~~showed~~ ~~exhibit~~ lower returns than comparable index funds. The purpose of *hypothesis 1* and *2* is to answer this question for more recent fund data in general and for Index Tracker Funds on European indices in particular.

Hypothesis 3

H_0 : The mean Tracking Error difference between ETFs and Mutual Index Funds is equal to zero.

H_A : The mean Tracking Error difference between ETFs and Mutual Index Funds is not equal to zero.

Previous research seems to agree on a non-zero tracking error for both fund types with a trend of ETFs showing lower tracking errors (cf. Rompotis, 2005; Agapova, 2011; Elton et al., 2002). While many of these articles are rather old and might be outdated, none of them focuses on European Indices only. *Hypothesis 3* aims to update findings and to fit them for the European market tracker.

Hypothesis 4

H_0 : There is no correlation between ETF Tracking Error and European market returns.

H_A : There is a correlation between ETF Tracking Error and European market returns.

Kommentar [AB252]: Why italics? I am not sure if the use of italics is beneficial, especially their alternation with non-italics as in this paragraph. This change of font may have a disturbing effect. Please consider using non-italic font.

Kommentar [AB253]: Italics are disturbing rather than helpful.

Hypothesis 5

H_0 : There is no correlation between MIF Tracking Error and European market returns.

H_A : There is a correlation between MIF Tracking Error and European market returns.

Throughout the literature review, we discussed several studies that investigated the relationship between ETFs and market volatility as reflected by the respective benchmarks (cf. inter alia Rompotis, 2011; Blitz and Huji, 2012; Aber et al., 2009). The findings were consistent inasmuch as Tracking Error seems to be positively correlated to index volatility. Ivanov (2012) further shows that the U.S. REIT ETFs Tracking Error increased during the subprime mortgage crisis. However, our review was unsuccessful when searching for the respective literature for Mutual Index Funds. By formulating hypothesis 4 and 5 we first ~~want~~ intend to test the relationship for each fund type separately and, based on the results, search ~~possible~~ any possible differences between them. ~~Doing so~~ To this end, we use different sub-periods of our time frame as discussed in ~~chapter Section 4.1.6. Sub-Periods, where and we will we~~ not only consider the U.S. subprime mortgage crisis, but also the ongoing European sovereign debt crisis.

Kommentar [AB254]: Page number?

Kommentar [AB255]: I do not recommend the use of italics here. Please also see my comment on the use of italics in your working document.

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Hypothesis 6

H_0 : The difference of mean Total Expense Ratio between ETFs and Mutual Index Funds is equal to zero.

H_A : The difference of mean Total Expense Ratio between ETFs and Mutual Index Funds is not equal to zero.

Due to passive portfolio management, expense ratios of index tracker funds are found to be rather low compared to active portfolios. Nevertheless, fund costs remain and are passed on to investors. Agapova (2011) found that ETFs tend to have lower expense ratios than Mutual Index Funds. This is in accordance with Blitz et al. (2010), who state a median expense ratio of 59 basis points from their sample of ETFs and Mutual Index Funds with ETFs showing ~~on average~~ lower ratios on average. (2010). ~~Hypothesis 6~~ answers the question ~~if of whether~~ there is a similar pattern for our fund selection.

Kommentar [AB256]: Page?

Kommentar [AB257]: Page?

Kommentar [AB258]: Please see my comment on the use of italics in your working document.

Hypothesis 7

H_0 : There is no correlation between Total Expense Ratio and Mutual Index Fund Tracking Error.

H_A : There is a correlation between Total Expense Ratio and Mutual Index Fund Tracking Error.

Hypothesis 8

H_0 : There is no correlation between Total Expense Ratio and ETF Tracking Error.

H_A : There is a correlation between Total Expense Ratio and ETF Tracking Error.

Meinhardt et al. (2012) found expense ratios to be a determining factor of ETF Tracking Error. The aim of ~~Hypothesis 7 and -8~~ is to reveal a possible impact of costs on the Tracking

Kommentar [AB259]: I do not recommend the use of italics here. Please see my comment on the use of italics in your working document.

Error of ETFs and Mutual Index Funds, i.e. to investigate if TER compromises their tracking quality.

4. Practical Methodology

In ~~e~~Chapter 4 we motivate ~~our~~~~the~~ choice ~~of~~~~or~~ a sampling method and reproduce our data collection. We further explain how we split our time frame (2006-2013) into smaller sub-periods for more detailed, timely investigation. After a statistical restatement of our hypotheses, we develop the basis for our empirical analysis by introducing all relevant statistical methods and tests we ~~made use of~~~~applied~~. ~~and~~ We conclude with a discussion on how we assure measurement quality.

4.1. Data Collection

4.1.1. Sampling Method

According to Adams et al., (2007, p. 87) “sampling is the process or technique of selecting a suitable sample for the purpose of determining parameters or characteristics of the whole population” (2007, p. 87). The main reason why researchers have to use sampling techniques to collect their data is that in most cases, the collection and processing of data of the a whole population, i.e. a census, is practically an impossible task, ~~which~~ usually ~~is~~ due to budget or time constraints. Researchers therefore need to make use of appropriate sampling methods in order to allow for generalizability from the sample to the population as a whole. (cf. Saunders, 2009, pp. 211–212)

Sampling ~~M~~ethods are generally divided into probability sampling and non-probability sampling. Probability sampling is mostly associated with survey-based research; ~~where the goal is to~~with the objective of make an inference inferring conclusions from a sample about a population by means of a sample. To select a sample, the sampling frame has to be identified, which includes all ~~eases given by the~~particularities of the population ~~and~~ from which the sample is ~~chosen~~ taken (Saunders, 2009, p. 214). Non-probability sampling methods, in contrast to probability sampling methods, ~~on the other hand~~ provide options where the sampling frame is unknown, and thus is the probability to select an element from the sample. Henry (1990, p. 14) ~~further~~ suggests that probability sampling is not advisable for very small populations (less than 50), as the impact of single extremes or outliers is much more pronounced, and therefore the whole population should be tested (1990, p. 14).

During our data allocation we ~~were~~ ~~facing~~ ~~ed~~ ~~both~~ ~~two~~ facts which trigger the choice ~~for~~ ~~of~~ non-probability sampling. Firstly, we have no exact determination of our population due to the lack of previous studies focusing exclusively on European index trackers. We therefore assessed our population by approximation, using different fund compendiums provided mainly by Bloomberg and Morningstar. However, the compiling compilation of a complete list of all existing funds that fulfill the criteria of tracking European indices while using under application of a passive strategy is a difficult task and an objective for own survey (this applies especially to Mutual Index Funds as we see inapparent from the description of data selection below). ~~Secondly~~ ~~Furthermore~~, even though the list of eligible Mutual Index Funds is extensive, our population is mainly limited mainly due to the relatively small number of Exchange Traded Funds. As further discussed below, extensive search returned only 21 ETFs that fulfilled our population criteria and have been existing over a sufficiently long period of time frame.

Kommentar [AB260]: Your description of probability sampling is quite clear but your description of non-probability sampling is a little vague. What options are you referring to, and how is the sampling done? Perhaps add a sentence or two in which you explain a little more about non-probability sampling so that your reader can imagine the difference between these two sampling methods. I find this especially important because you have chosen non-probability sampling as sampling method in your research.

Kommentar [AB261]: Year?

Kommentar [AB262]: Year?

Kommentar [AB263]: This statement is a bit delicate because your examiner might read it as “we don’t like to work hard and prefer to go the easy way”. Perhaps rephrase a little and just explain that the compilation of a complete list would exceed the practical and timely scope of your thesis, but that such a project might be interesting for a separate research project?

Kommentar [AB264]: Do you mean “a separate survey”?

Kommentar [AB265]: Where exactly is the reader going to find this description? Please add a reference. “Below” is too vague in a document of 100 pages.

We therefore decided to choose a non-probability sampling method of which we considered two, namely convenience sampling and purposive sampling:

Kommentar [AB266]: Two what? Please specify. Perhaps "two types"?

Convenience Sampling — ~~this is a non-probability sampling method of which non-probability sampling is~~ unrestricted and therefore not bound ~~to~~ any selection criteria. The researcher can basically freely ~~choose~~ ~~decide~~ which data ~~is to~~ included in the sample. Convenience sampling comes with low costs and effort and ~~is~~ ~~are~~ useful where ~~ver~~ there is little variance in the population ~~on the one hand~~. ~~The~~ ~~On the other hand, however,~~ convenience ~~sampling~~ ~~however comes with~~ ~~has~~ the drawback of very low reliability of the sample ~~for being in terms of true representative representation of~~ the population (Adams et al., 2007, p. 90; Saunders, 2009, p. 241).

Purposive Sampling, — also called judgmental sampling, ~~this is~~ another method of non-probability sampling, which is frequently used ~~when by researchers~~ working with small samples. Purposive sampling allows the researcher to ~~decide on the basis of his own judgment~~ ~~the decision of what to include in the sample on his own judgment about~~ which cases will best answer the research question ~~and should thus be included in the sample~~. One way to use this sampling technique is *homogenous* sampling, ~~where the focusses lies~~ on one particular sub-group in which all sample members are similar. Homogenous sampling is therefore useful to study a sub-group in ~~depth~~ (Saunders, 2009, p. 240).

~~Given~~ ~~Out of~~ the above ~~options, choices~~ we chose a homogenous purpose sampling as ~~research our~~ method for the following reasons: ~~Firstly~~, we define our eligible data using very specific criteria, which gives our sample the characteristic of a sub-group of index funds in general. Since the purpose of this study ~~does not lies not~~ in finding results that are generalizable to index funds in general, but rather to index funds possessing the described characteristics, we identify purposive sampling in combination with our chosen criteria as ~~best fitting most suitable for given~~ our objective and data availability. ~~Secondly~~, in contrast to convenience sampling, purposive sampling gives us the opportunity to increase the likelihood of the sample representativeness by applying the chosen criteria.

4.1.2. Selection Criteria

We constrained our sample data by the following requirements:

1. ~~Qualified~~ indices must ~~be~~ exclusively comprehend European stocks, ~~and~~
2. ~~Qualified indices must be~~ regional or country-oriented.
3. ETFs and Index Funds must be passively managed open-end funds.
4. ~~EFTs and Index Funds must be~~ inception not later than by the end of 2006 and listed in Europe.

The first constraint follows our research question, which refers to European ~~i~~Indices. The second constraint is used for controlling purposes as we ~~want intend~~ to avoid biased data due to ~~the an~~ unintentional emphasis on a specific sector and its characteristics. The third and fourth constraints refer to the chosen funds and follow our delimitations, i.e. we exclude active fund strategies and use a fixed time frame for ~~the data of~~ both funds ~~data~~.

We obtained a list of generally eligible indices and Index Trackers via Bloomberg, Morningstar and other financial services and cross-checked ~~the list for with~~ the respective data availability in the Datastream ~~D~~database. ~~As~~ ~~Since~~ we conduct a longitudinal study, the most restrictive criterion was the age of ETFs, as many of them were launched after 2007. ~~The necessity to obtaining~~ ~~F~~factsheets for each fund ~~in order~~ ~~(necessary to obtain receive~~

expense ratios and information about management style.) ~~on the other hand~~ however, complicated our Mutual Index Fund selection, ~~because~~ their prospectuses are not as freely available to non-investors than ~~those ones~~ of ETFs.

4.1.3. Data Selection

As a consequence of our research purpose, the population from which to pick our sample is made of all Index Mutual Funds and ETFs that track European indices. As said above, this number is mainly compromised by the amount of eligible ETFs; by the end of 2012 BlackRock counted 511 ETFs on European equity; out of which 196 were exposed to Euro country indices, and 55 were exposed to the European region. The rest is buildup of sector or specialized Index ETFs which are not included in the sample. It is to note that compared to 511 ETFs by the end of 2012, only 273 existed by the end of 2006, which strongly decreases data availability for our sample (BlackRock, 2012, p. 22). Furthermore, some tests require an even sampling of ETFs and MIFs. Here, we can only consider ETFs with a direct Mutual Index Funds match for the same benchmark. As Svetina and Wahal note in their study from 2008, there are only 17% of ETFs in direct competition with MIFs (2008, p. 17).

It is hardly feasible to draw an accurate picture about of the mutual index fund landscape, as the industry is very broadly positioned and we ~~did~~ could not find an executive summary. However, to give get an idea we collected all index funds listed on Bloomberg (open-end, closed-end and Fund of Funds) and extracted the number of open-end funds listed in Europe. Out of a total of 2724 index funds, 2532 were open-ended of which 1097 are listed in Europe. These numbers include all Mutual Index Funds listed in Europe but not necessarily tracking European Indices. It was unfortunately not possible to reduce this number to the population that represents all criteria as stated in Data Criteria and as implied by our research question and purpose. *Figure 11* gives an impression of the Mutual Index Fund landscape around the world and clearly shows depicts Europe as the dominant market, making up for covering 43%.

Kommentar [AB267]: Is it not "Mutual Index Funds"? Or is this also a common way of referring to the same concept?

Kommentar [AB268]: Which number?

Kommentar [AB269]: What do you mean here? This is unclear and I cannot put it right for you because I lack the necessary subject knowledge. Please try to clarify what you mean with "buildup". Does the "rest" result from the buildup of the sector, or emerge from the buildup of a sector, or...? You also need articles such as "a sector" or "the sector".

Kommentar [AB270]: What is this? I cannot find a section with this heading in your text... Do you perhaps refer to your section headed "Selection Criteria"?

Kommentar [AB271]: 43% of what?

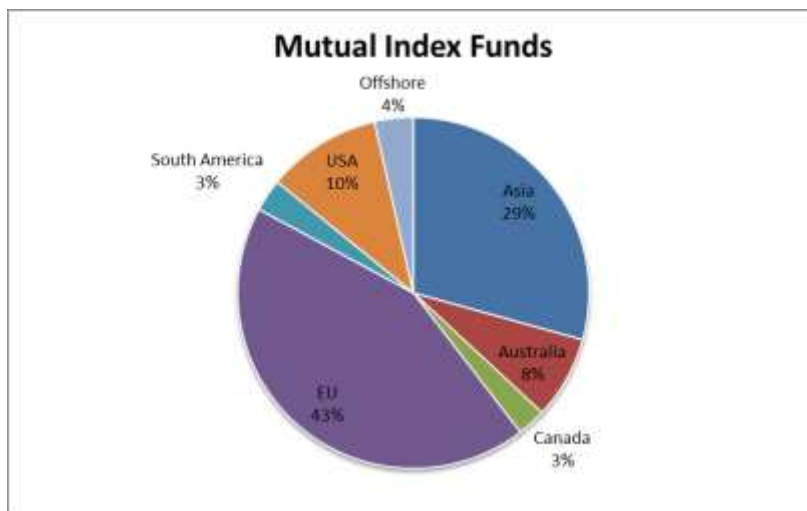


Figure 11: Mutual Index Fund Landscape; Source: Own design. Data: Bloomberg

Applying Considering the above criteria, we are left with 22 Mutual Index Funds and 21 ETFs tracking 9 different European indices. For each index, there is at least one Mutual Index Fund and one ETF tracking its performance. We chose Funds with common benchmarks (and therefore common risk exposures) in order to increase the comparability of

Kommentar [AB272]: Where exactly?

Kommentar [AB273]: If there is no particular requirement for the use of bold font here, I recommend you to change it to normal font.

tracking error and expense ratios. The sample, when aggregated by the tracked indices, is an uneven panel of ratio variables, as on average, there are ~~on average~~ more Mutual Funds than ETFs per Index.

While the Index Fund sample consists of numerous different emitters, the ETF sample shows a repetition especially of iShares, and Lyxor. This is a consequence of the market share allocation in the European ETF industry, as iShares and Lyxor with 35,8% and 18,4% respectively –(as of 2011) were, and still are, leading ETF providers in Europe (BlackRock, 2010, p. 47).

ETF	Index Mutual Fund	Index	Country
LYXOR ETF	ING.DRCT.CAC 40 (C) LYXOR INTERNATIONAL AM	CAC40	France
AMUNDI ETF	NATIXIS CAC 40 NATIXIS ASSET MANAGEMENT	CAC40	France
	MAM FRANCE INDICE(C) MEESCHAERT FCP	CAC40	France
	STRAT CAC(D) LEGAL & GENERAL AM	CAC40	France
	INDICE VALOR (C) GESTION VALOR	CAC40	France
ISHARES TECDAX	LUX EURO STOCK TECDAX	TECDAX (XETRA)	Germany
ISHARES DAX	OPPENHEIM KPLDAX WERTE	DAX 30	Germany
	DT.POSTSBANK ASTMGMT.DYM. DAX R T	DAX 30	Germany
LYXOR DAX INAV	PIONEER INVESTMENTS AKTIEN DTLA EUR ND	DAX 30	Germany
ISHARES DJ EURO STOXX 50	INVERSAFEI BOLSA EURO	EURO STOXX 50	EU
UBS ETF DJ EURO STOXX 50	VITALGESTION EURO BOLSA INDICE	EURO STOXX 50	EU
Lyxor Dow Jones Eurostoxx 50	GESBANKINTER INDICE EUROPEO 50	EURO STOXX 50	EU
SPDR INDEX SHARES FUNDS	DBV WINTERTH.FD MAN.CO LX EURO STOXX 50 T	EURO STOXX 50	EU
Euro Stoxx 50® UCITS ETF	MS ING DIRECT NARANJA EURO STOXX 50	EURO STOXX 50	EU
	MORGAN STANLEY LIBRTY. EUROPEAN STOCK MARKET	EURO STOXX 50	EU
	UNION INVESTMENT LX UNIEUROSTOXX 50 A	EURO STOXX 50	EU
	ETOILE EURO OPPORTUNITES ETOILE GESTION	EURO STOXX 50	EU
	KBC INDEX FD. EUROLAND C	EURO STOXX 50	EU
LYXOR MSCI EUROPE	VANGD.EUR.STK.IDX.FD. ADMIRAL SHS	MSCI EUROPE	EU
SPDRMSCI EUROPE ETF	AMUNDI FRN.INDEX EUROPE CAP	MSCI EUROPE	EU
	SWISSCANTO CH MSCI EUROPE INDEX FUND A	MSCI EUROPE	EU
BBVA ACCION IBEX 35 ETF	MORGAN STANLEY LIBERTY SPANISH STK.MKT IDX	IBEX 35 (Spain)	Spain
UBS-ETF FTSE 100	HSBC FTSE 100 IDX.RET.INC.	FTSE 100	UK
ISHARES FTSE 100 DE	HALIFAX UK FTSE 100	FTSE 100	UK
ISHARES FTSE 100		FTSE 100	UK
UBS-ETF FTSE 100 (SWX)		FTSE 100	UK
ISHARES SMI (DE)	CREDIT SUISSE CSA SWISS INDEX	SMI - SWISS INDEX	Switzerland
UBS FUND		SMI - SWISS INDEX	Switzerland
Credit Suisse ETF (CH) ON SMI		SMI - SWISS INDEX	Switzerland
SPDR AEX ETF	BNP PARIBAS AEX INDEX FUND	AEX	the Netherlands
ISHARES AEX		AEX	the Netherlands

Table 2: ETFs, Mutual Funds and Indices; Source: Own design

Table 2 illustrates a list of all ETFs and Index Mutual Funds which are included in our sample and their respective benchmark index. It shows that ~~to-with~~ every index we use, we matched ~~at~~ least one ETF and one Mutual Fund ~~respectively~~. For most indices the amounts are, however, uneven due to data constraints. Hence, the sample includes on average more Index Mutual Funds than ETFs. While ~~3-three~~ indices are cross-country diversified (MSCI Europe, EURO STOXX50, MSCI Developed Europe)–, our sample includes country indices from France (CAC40), Germany (DAX), Netherlands (AEX), Spain (Ibex35), England (FTSE 100) and Switzerland (SMI).

Data Type

Our study deals with the development of prices of index tracker funds and their benchmarks over a fixed period of time. We therefore obtain price data from different points in time during this period and order them according to their observation time. The observed prices serve as basis for our calculation and can, due to their timeline characteristics, be referred to as time series data. It is, however, to point out, that we are not basing our analysis on a single

Kommentar [AB274]: Is “Mutual Index Funds” and “Index Mutual Funds” (see also heading in Table 2) the same and these two terms can be used interchangeably?

Kommentar [AB275]: Indeed only England or the whole of Great Britain? Or even the United Kingdom, which includes Great Britain, parts of Ireland and a few islands as well? Please check. See the following sites for an overview of the differences:
http://en.wikipedia.org/wiki/United_Kingdom
http://en.wikipedia.org/wiki/Great_Britain
<http://en.wikipedia.org/wiki/England>

time series, but make use of several time series for Mutual Index Funds on the one hand, and several series for ETFs on the other. This gives us two separate panel sets of variables we aim to compare (Koop, 2006, pp. 9–11). To draw ~~as maximal~~ accurate ~~a~~ picture ~~as possible~~ of the prices over time, we use the highest frequency data which exists for both, ETFs and Mutual Index Funds, i.e. daily prices. Even though ~~the~~ ETFs are stated intraday as well, such data ~~are is~~ not only difficult to obtain over a longer period, but also not available for Mutual Index Funds.

Expense Ratios

Hypotheses 6-8 relate to the ~~F~~unds' Total Expense Ratios (TER).~~;~~ ~~¶~~Therefore we collected TERs for every ~~F~~und by extracting the most recent values from the factsheets of the fund providers. In rare cases when this information was not provided, we obtained the latest ratio stated on Morningstar.

4.1.4. MSCI Europe

We decided to use MSCI Europe ~~i~~Index as a representative index for the European market state. This ~~is~~ ~~MSCI-Europe-i~~index captures large and mid-cap representations across 16 Developed Markets countries in Europe.⁴ With 436 constituents, the index covers approximately 85% of the free float-adjusted market capitalization across the European Developed Markets equity universe. The index has a 9,41% ~~10-ten-year~~ and 19,89% ~~10-ten-year~~ annualized return and standard deviation, respectively. It used the MSCI Global Investable Market Indices (GIMI) Methodology in order “to provide exhaustive coverage of the relevant investment opportunity set with a strong emphasis on index liquidity, investability and replicability” (MSCI, 2013, p. 2). To adopt changes in the underlying equity market, the index is reviewed quarterly in February, Mai, August and November. (MSCI, 2013, p. 1–2).

Kommentar [AB276]: Please remember: the superscript comes after the full stop, even though it looks a bit odd.

4.1.5. Time Horizon

The time horizon of this study is mainly determined by the inception date of the used Exchange Traded Funds. As a rather young investment instrument, ETFs had a growth phase ~~at~~ the beginning of the 21st century, but are still developing. In order to achieve a sufficient number of ETFs we set the start date for the observations ~~at~~ the end of 2006 and ~~finalize~~ the investigation at the end of 2012. We see this time frame ~~however~~ as sufficient, ~~since~~ as it not only captures the recent development and to the date ~~the~~ most competitive years between Mutual Index Funds and ETFs, but also gives us the chance to look at different states of the economy, ~~since~~ ~~as~~ ~~these~~ ~~five~~ years cover the subprime mortgage crisis and the ongoing European sovereign debt crisis, which leaves room for ~~a~~ discussion about tracking performance of the two fund types during different states of the market.

Formatiert: Hochgestellt

The ~~following~~ ~~graph~~ ~~Figure 12~~ shows the development of the MSCI Europe over the ~~investigated~~ ~~periods~~ ~~of~~ ~~investigation~~ and gives ~~and~~ ~~i~~mpression ~~about~~ ~~of~~ the different states of the European economy. It also allows us to define a set of sub-~~periods~~ that might be worth ~~to~~ examining ~~separately~~.

⁴ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK.

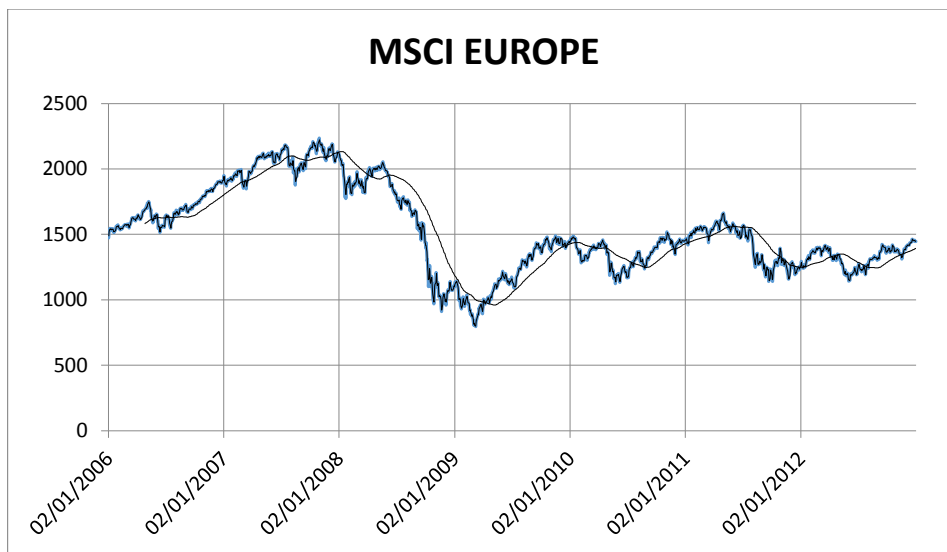


Figure 12: Development of the MSCI Europe Index 2006-2013 Source: Own design.

What Figure 12 tells us about shows the development of the European economy -in the past six years, the European economy in the past 6 years- It started with a strong breakdown between the end of 2007 and the beginning of 2008, which can be explained as triggered by the subprime mortgage crisis. After hitting a low point at the beginning of 2009, a recovery period started but does not last very long, as the European debt crisis thwarted down the upturn in Europe. If we take the MSCI Europe as a representative Index for the European Economy, we can see that the debt crisis doesn't really has not resulted in a recession, but more rather in a stagnation, which is, like the crisis itself, still ongoing and enduring. The fact that the EU has not experienced a born-and-bred recession, might be due to the fact, that even though the European crisis states face the latter, other states remain stable and absorb the downfall. In addition, several actions undertaken by the European Central Bank aim for the stabilization of the EU.

4.1.6. Sub-Periods

Given our window from 2007-2013 and the trend in Figure 12 we can identify the following sub-periods:

Period 1: 2006 to -Oct. 2007, a Ascending trend

Period 2: Nov. 2007 to Feb. 2009, s Strong recession (subprime mortgage crisis)

Period 3: Mar. 2009 to -2010, A ascending trend (recovering phase)

Period 4: Jan. 2010 to -2013, s Stagnation (European sovereign debt crisis)

Kommentar [AB277]: Month?

Kommentar [AB278]: Month?

Kommentar [AB279]: Month?

Kommentar [AB280]: For easier reading and for the sake of consistency, I suggest to not use bold type.

To decide for on the borderlines of the sub-periods, we looked at considered the bottoms and peaks (min. and max.) of the index and related them to economic events to identify the relevant breaking points. We use these this sub-periods as a benchmarks to identify any possible relationship between tracking quality and different market states, i.e. we investigate if index trackers benefit from either bull or bear markets.

4.2. Data Treatment and Adjustment

Throughout the analysis part of this thesis we occasionally have to adjust the used data in order to align them with the respective tests.

Time Transformation

In order to conduct regression analysis to investigate the relationship between Tracking Error and index return, we need to annualize Tracking Errors. As one of our chosen measures for TE is the Standard Deviation of return differences, due to the restrictions of Probability Theory on mathematical adjustments of Standard Deviation, we have to transform it to variance, which is done by exponentiation of the standard deviation. To transform the standard deviation σ from daily to yearly, we use the formula:

$$\sigma_{annual} = \sigma_{daily} * \sqrt{n}$$

Equation 9: Transformation of standard deviation

Where n is the number of observations throughout the respective year. The corresponding transformation of daily index returns is done with

$$R_{annual} = (1 + R_d)^n - 1$$

Equation 10: Transformation of Returns

Avoiding Autocorrelation

Since one of our chosen methods to calculate tracking error is based directly on returns, there is a potential threat of autocorrelation within the time series of return. Taking this into account, apart from using log returns, we undertake further necessary actions to avoid serial correlation which we discuss subsequent to the introduction of the respective Tracking Error estimate.

Moving Average

While investigating outliers during Tracking Error analysis, we make use of the Moving Average (MA) of the time series. MA is calculated in order to smooth out a time series by taking the averaging the original data over a specified period n . In our case we calculate moving averages of funds closing prices to run regression analysis on them and to compare the results to those of the original data. This helps us to identify whether there are certain outliers within a series that influence our regression when ran with the original series. We transform the original series $\{r_t\}_{t=1}^T$ to a new series $\{r_t^{MA}\}_{t=1}^{T-n+1}$ by taking the arithmetic mean of a sub-series of n observations:

$$r_t^{MA} = \frac{1}{n} \sum_{i=t}^{t+n-1} r_i$$

Equation 11: Moving Average

Where r_t^{MA} is the new series from Moving Average, over n observations and T as the total amount of observations from the original series (as you can see demonstrated in chapter 5.3.1, we use $t=100$ out of $n=1825$).

Kommentar [AB281]: What exactly?

Kommentar [AB282]: On the averages or on the prices?

Formatiert: Schriftart: Kursiv

Formatiert: Schriftart: Kursiv

4.3. Statistics

4.3.1. Statistical Expression of Hypotheses

We reformulate our hypotheses from Chapter 3, using the same statistical terms as we are using throughout our statistical tests ~~and. In subsequence to that, we shall~~ presentation the of results. In the following calculation we use μ_{MF} , μ_{ETF} and μ_{Index} for the mean returns of Mutual Funds, ETFs and Indices respectively, TE_{MF} and TE_{ETF} for the respective Tracking Errors and TER for the respective Total Expense Ratios. For *hypotheses 7 and 8* we calculate Betas (β_{MF}^{TER} and β_{ETF}^{TER}) as correlation coefficients between Tracking Error and Total Expense Ratio.

Kommentar [AB283]: Please check your spelling of this term. On page 53 you have written it in lower case. Just make sure that you use the correct form consistently.

Hypothesis 1

- The average return difference between Mutual Index Funds and their benchmark index is equal to zero.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \mu_{MF} - \mu_{Index} = 0$$

$$H_A: \mu_{MF} - \mu_{Index} \neq 0$$

Hypothesis 2

- The average return difference between Exchange Traded Funds and their benchmark index is equal to zero.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \mu_{ETF} - \mu_{Index} = 0$$

$$H_A: \mu_{ETF} - \mu_{Index} \neq 0$$

Hypothesis 3

- The mean Tracking Error difference between Exchange Traded Funds and Mutual Index Funds is equal to zero.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: TE_{MF} - TE_{ETF} = 0$$

$$H_A: TE_{MF} - TE_{ETF} \neq 0$$

Hypothesis 4

- For ETFs ~~:-T~~ there is no correlation between mean Tracking Error and the European economy.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROPE}^{TE} \neq 0$$

Hypothesis 5

- For MIFs: ~~t~~There is no correlation between mean Tracking Error and the European economy.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROE}^{TE} \neq 0$$

Hypothesis 6

- The difference of mean Total Expense Ratio between Exchange Traded Funds and Mutual Index Funds is equal to zero.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: TER_{MF} - TER_{ETF} = 0$$

$$H_A: TER_{MF} - TER_{ETF} \neq 0$$

Hypothesis 7

- There is no correlation between Total Expense Ratio and Mutual Index Fund Tracking Error.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

Hypothesis 8

- There is no correlation between Total Expense Ratio and Exchange Traded Fund Tracking Error.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

4.3.2. Calculating Returns

- We ~~want-intend~~ to calculate Tracking Errors as described in ~~e~~Chapter 3. Therefore we first have to transform our daily observed prices to returns, which can simply be done by

$$r_t = \left[\frac{P_{t+1}}{P_t} \right] - 1$$

Equation 12: Calculation of Returns

- ~~which is~~ This formula represents the geometric return of a time series.

It is, however, convenient for financial time series analysis, to make use of the natural logarithms of the return series (log return continuously compound return), which is calculated as

$$r_t = \ln \left[\frac{P_{t+1}}{P_t} \right]$$

Equation 13: Calculation of Logarithmic Returns

Investigating a time series, i.e. a series of data from different points in time, this is favorable due to the symmetric and additive characteristic of the logarithm which recognizes dependency between the returns, while the geometric return implies an independent relationship (Adelmeyer & Warmuth, 2005, pp. 55–56).

Kommentar [AB284]: What exactly?

The sum of log returns over the whole time horizon gives us the total return for ETF, Mutual Index Fund and benchmark index and serves as the basis for our analysis.

4.3.3. Volatility

The volatility of an investment is used to express its risk exposure and is calculated as the standard deviation of the daily returns (Rompotis, 2005, p. 10). The volatility of the different time series for every fund and index is therefore calculated as

$$S^2 = \sqrt{\frac{1}{T-1} \sum_{t=1}^T (r_t - \bar{r})^2}$$

Equation 14: Volatility of a return series

where T is the number of observations, r_t the observed value at time t and \bar{r} the mean of the observations of the respective ETFs, Mutual Index Fund or index.

4.3.4. Correlation Analysis

To be able to answer hypothesis 4-5 and 7-8 we need to find possible correlations between fund expenses and Tracking Error. The correlation coefficient measures the direction and strength of the linear dependence between two variables, i.e. in our case between Total Expense Ratio and Tracking Error. The correlation function is defined as

Kommentar [AB285]: Please make sure that you use a uniform writing style. On page 49 you used a “and” instead of a hyphen between two hypotheses. For the sake of consistency you should choose one option.

$$r_{x,y} = \frac{Cov(X,Y)}{\sqrt{Var(X)Var(Y)}}$$

Equation 15: Correlation Function

where X and Y are the investigated variables. For our sample where $\{(x_i, y_i)\}_{i=1}^N$ is available, the correlation can be written as

$$r_{x,y} = \frac{\sum_{i=1}^N (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^N (x_i - \bar{x})^2 \sum_{i=1}^N (y_i - \bar{y})^2}}$$

Equation 16: Extended Correlation Function

with \bar{x} and \bar{y} as the respective sample mean ($\sum_{i=1}^N x_i$ and $\sum_{i=1}^N y_i$) (Tsay, 2005, p. 26).

Kommentar [AB286]: Not in your list of references.

The correlation between two variables always takes a value between -1 and 1, where correlation increases with the strength of deviation from 0, i.e. 1 indicates a perfect positive association, -1 a perfect negative association and 0 an uncorrelated relationship.

T-Ratio

To test the null hypothesis for the Pearson's correlation coefficient as stated above, i.e. to test if our sample means are linearly independent, we calculate the t-ratio as

$$t = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

Equation 17: T-Ratio

where r is the correlation coefficient, N is the sample size and $N - 2$ are the degrees of freedom (df). (Howell, 2009, p. 272)

4.3.5. Regression Analysis

We make use of a simple regression analysis, in order to further explain the relationship between fund return and index return. Therefore we regress the return r_{fi} of every fund against the return r_{bi} of its benchmark index. We use the same time-series regression model as Rompotis (2005, p. 12). We intend to gain information about the funds' portfolio sensitivity towards index movements and therefore about their replication accuracy (2005, p. 12).

$$r_{fi} = \alpha_i + \beta_i r_{bi} + \varepsilon_i$$

Equation 18: Simple Regression Function

In Equation 18, α_i is the independent constant and represents the return a fund portfolio achieves independently from the index return. Since we exclusively investigate passively managed funds, this value is expected, and if analogous management is used, the value should be insignificantly smaller. Therefore, most of the return should be explained by the fund portfolios β_i , which, if the portfolio is successfully managed, should be close to 1 and therefore highly correlated with the index returns. ε_i represents the residuals of the respective funds, which are not explained by the model.

Assumptions

There are three assumptions that have to be tested first in order to verify the suitability of regression analysis:

1. $E(\varepsilon_i) = 0$ ε has a mean of zero for all i
2. $E(\varepsilon_i)^2 = \sigma_\varepsilon^2$ it has the same variance for all i
3. $E(\varepsilon_i \varepsilon_j) = 0, i \neq j$ there is no correlation across observations (Autocorrelation) (Cottrell, 2003, p. 1).

We test these assumptions by testing for the respective criteria. We test whether residuals are normally distributed by analyzing the Q-Q plot and by running a Kolmogorov-Smirnov test. Further, autocorrelation is tested by plotting the standardized residuals against predicted values and calculating Durbin-Watson statistics. The results of the tests are presented and discussed in Chapter 5.

T-statistic

Kommentar [AB287]: If this is a universally known calculation in your field such as Albert Einstein's relativity theory, and a reader in your field will certainly know what you are talking about, alright. If it is something special and not very famous, please consider providing a source and/or explaining the concept in a footnote.

Kommentar [AB288]: Where exactly? Please reference the corresponding section.

Kommentar [AB289]: I think repetition is not required. It is already clear from the previous sentence that you are imitating Rompotis.

Kommentar [AB290]: Singular?

Kommentar [AB291]: What exactly?

Kommentar [AB292]: Noun missing! Testing what?

Simultaneously to the correlation coefficient, after estimating the size of β , we apply t-statistics to test the level of significance of the hypothesis $H_0: \beta = 0$ against $H_A: \beta \neq 0$ to gain affirmation that the regression is capable of explaining the relationship between index and fund portfolio within a certain confidence interval, i.e. ~~to see we investigate~~ if the explanatory variable has an actual effect on the dependent variable. The t-statistic is calculated by

$$t' = \frac{\beta}{S_b}$$

Equation 19: T-Statistics

With β as our beta estimate and S_b as the standard deviation of beta. If beta estimates are large relative to its standard deviations and therefore the t-value is large (relative to its critical value from the Student-t distribution), we can reject H_0 and accept H_A . Executing a t-test in Excel or SPSS returns a P-Value which determines the relative size of the t-statistic, i.e. for 95% confidence interval, if $P \leq 5\%$ we can reject H_0 . (Koop, 2006, pp. 79–81)

Kommentar [AB293]: Please check your spelling of this term. You have capitalized it on page 49. Just make sure that you use the correct spelling consistently.

Kommentar [AB294]: What exactly?

Kommentar [AB295]: This is not a complete sentence. I cannot complete it for you since I lack the necessary knowledge. A subject is missing, such as "We execute". Please revise.

4.3.6. Tracking Error Estimates

To compare tracking accuracy between ETFs and Mutual Index Funds, we make use of different methods to calculate Tracking Errors. Besides the widely used definition of TE as the standard deviation of return differences, we use two alternative estimates, also utilized by Frino and Gallagher when investigating the tracking of S&P 500 Index Funds. (2001, pp. 8–9)

TE_1

Our first Tracking error is calculated using the standard error of the regression from Equation 18 as introduced above. The standard error is calculated as by

$$TE_1 = SSR = \sqrt{\frac{\sum(Y_t - \hat{Y}_t)^2}{n-2}} = \sqrt{\frac{\sum \varepsilon_t^2}{n-2}}$$

Equation 20: Tracking Error 1

i.e. the sum of the squared residuals divided by $n-2$ degrees of freedom (n = number of observations).

TE_1 was suggested by Roll (1992) as an idea to investigate managers' performance (produce positive returns over a benchmark and keep TE volatility low) relative to the index and to determine the exact composition of the particular portfolio, which could dominate the benchmark and possess low TE by putting imposing constraints on a beta.

Kommentar [AB296]: Very long sentence; try to split.

TE_2

The standard methodology to calculate TE as introduced in Chapter 3, is the standard deviation of return differences. The standard deviation S is defined as the square root of the variance S^2 and is calculated as

$$S^2 = \frac{1}{T-1} \sum_{t=1}^T (e_t - \bar{e}_t)^2$$

Equation 21: Variance of Return Differences

In Equation 21 Here, e_t is the return difference $r_t^{Fund} - r_t^{Index}$ and the mean \bar{e} is defined as

$$\bar{e} = \frac{1}{T} \sum_{t=1}^T e_t$$

Equation 22: Mean of Return Differences

i.e. the sum of the observation values divided by their count. Then, our second measure for Tracking Error can be simply expressed as

$$TE_2 = \sqrt{S^2}$$

Equation 23: Tracking Error 2

~~Based Since TE_2 on its popularity of the TE_2 and its numerous frequently usage in most academic studies (cf. inter alia Roll, 1992; Rudolf et al., 1999; Frino & Gallagher, 2001, Aber et al., 2009 and Hwang & Satchel, 2001), we pay most attention to it focus on TE_2 in our analysis. (cf. inter alia Roll, 1992; Rudolf et al., 1999; Frino & Gallagher, 2001, Aber et al., 2009 and Hwang & Satchel, 2001). TE_2 methodology is also the common approach for the funds and for rating agencies like such as Morningstar.com (Morningstar, 2013b).~~

Pope and Yadav (1994) note that calculating annual TE_2 based on daily returns could bias it due to serial autocorrelation of returns. However, we adjusted our returns in cases of serial correlation by using lag returns. We checked for autocorrelation using Durbin-Watson statistics for the obtained daily returns. In addition, we drew PACF (partial autocorrelation function charts) and determined the correct lag needed for the model in the case of autocorrelation. Next, we adjusted our returns using the correct lag and performed regression using dynamic model $Y_t = \alpha + \sum_{i=1} \beta_i X_{t-i} + \varepsilon_t$ with the stated lag.

TE_3

The third ~~estimate~~ TE estimate is the average absolute return difference, i.e. we calculate the daily average of the absolute return difference, $e_t = r_t^{Fund} - r_t^{Index}$ as

$$TE_3 = \frac{\sum_{t=1}^T |e_t|}{T}$$

Equation 24: Tracking Error 3

TE_3 was developed by Rudolf et al. (1999) who estimated that TE_3 could give better risk descriptions to investors if performance fees of fund managers are linear.

4.3.7. Two-Sample t-test

To compare the means of two time series (i.e. to explore significant differences), we use a two-sample t-test. Since we are interested in any potential difference, our ~~h~~H hypothesis for this test is $H_0: \mu_x - \mu_y = 0$ and thus $H_A: \mu_x - \mu_y \neq 0$. As our series have unequal variances, we use the heteroscedastic t-test (or unequal variance t-test). The basis for this t-test is the estimated standard deviation of the sample difference in sample means. ~~Since~~, the standard deviation of the population is unknown, it is estimated by the two samples' standard deviation:

$$\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}$$

Equation 25: Two-Sample Standard Deviation

We standardize the estimates by dividing **it** by the standard error, which gives us the **two-sample t-test**

$$t' = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

Equation 26: Two-Sample T-test

where $\bar{x}_1 - \bar{x}_2$ is the difference between the observed estimates and n the respective number of the observations of series 1 and 2. (Moore, 1996, p. 469)

Kommentar [AB297]: If you use the, "estimates" as a plural, you should have a plural here too, i.e. "them". If it is only one estimate, please remove the "s". Please check if you mean one estimate or plural estimates and correct your sentence accordingly.

4.4. Regressions with categorical dependent variable

Categorizing variables

During our analysis of MIF and ETF tracking performance, we decided to construct pairs, where an ETF and MIF are tracking the same index. For the list of pairs, please see *Appendix I*. Afterwards, we calculated absolute return differences (ARD) between a benchmark index and a MIF for each period. The same procedure was repeated for an ETF as well. Next, in order to compare the ARD of an ETF and a MIF in a matched pair (both ETF and MIF track the same index), we categorized our ARD by “1” if tracking performance of ETF was better during the respective period and “0” if tracking performance of MIF is better. We obtained a categorical variable for the period of 2007 to the end of 2012 by using monthly observations (resulting in **15** pairs with **72** observations each).

We make use of logistic regression as an attempt to explain the phenomenon; when over a period of time ETFs could perform better tracking over compared to MIF, and vice versa. I.e. we chose explanatory variables to find out whether they have a positive or negative impact on our two fund types. In fact, as we will see throughout our analysis, there are some certain periods when during which return differences of ETFs are lower than those of MIFs² and the other way around.

We decided to research this phenomenon, using index returns R_i and volatility σ_i as explanatory variables since these are universal tools, which give provide valuable and good essential knowledge about the index as well as the current state of the market.

In order to evaluate influence on a categorical variable, which has only two values (MIF or ETF), three options exist: Linear Probability Model (LPM), probability model (probit) and logistic regression (logit).

4.4.1. Linear Probability Model (LPM)

LPM is a special case of binomial regression, where the dependent variable takes has a values which are of either 0 or 1. The relationship of variables is simple, thus it which allows the model to be fitted by OLS. The model is:

$$P(Y = 1|x) = x'\beta$$

Equation 27: LPM model

where P is the probability.

The method of fitting OLS, with a categorical dependent variable has significant drawbacks. Estimated coefficients would give generate probabilities outside the unit interval and conditions for residuals won't will not be accepted. For this reason LPM is of limited usage and another model, such as the the logit or probit model are commonly used. (Hahn & Sover, 2010)

4.4.2. Probit model

The aim of the model is to get calculate the probability that of an event with special characteristics will of being categorized in a group with similar characteristics. Categorizing an event into a group usually requires the probability to be more than 0,5. Probit is used to model ordinal or binary outcome variables. In the probit model, the inverse standard normal distribution of the probability is modelled as a linear combination of the predictors. It is

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Kommentar [AB298]: This is one example for the limitations of expression if you do not make use of the past tense to report on your practical research (please see my comment “use of tenses” in your working document). You are using the future tense here as if you were going to do your analysis shortly. However, your reader will wonder how you can already predict a certain outcome of an analysis that is has not been performed yet but is going to take place in the future. Please consider my suggestions and recommendations with regard to the use of tenses in your working document.

Formatiert: Schriftart: Nicht Kursiv

Kommentar [AB299]: The influence of what? Please specify.

Kommentar [AB300]: Is this a specialized term? If not, perhaps rather “matched with”?

Kommentar [AB301]: “matching”?

similar to logistic regression and is estimated using the standard maximum likelihood procedure (regression). The model is:

$$P(Y = 1|x) = \Phi(x'\beta)$$

Equation 28: Probit model

where P is probability and Φ is the Cumulative Distribution Function (CDF) of a Normal distribution.

Kommentar [AB302]: Lower case?

The probit model standardises all β coefficients to z values on a CDF of a Normal distribution. Thus, interpretations of the results are limited to z scores. Other interpretation requires the calculation of probabilities, which are limited to a specific observation case. Therefore, we decide to implement a more common approach and to use a logit model for the convenience of our interpreting results. (Hahn & Sover, 2010)

Kommentar [AB303]: Lower case?

4.4.3. Logit model

The logit model allows to model categorical variables in a way similar to OLS. Logistic regression has become the most used technique in the class of generalized linear models due to its simplicity in regarding interpretation. In logistic regression, the function is \ln transformed. The researcher uses the natural logarithm of the odds that some a given event will occur. In OLS, parameters are estimated using the method of least squares by minimizing the sum of squared deviations of predicted values from observed values. For logistic regression, least squares estimation is not capable of producing minimum variance unbiased estimators for the actual parameters. In its place, maximum likelihood estimation is used. (Czepiel, 2002, pp. 2-3)

The model is:

$$\ln\left(\frac{P(x)}{1-P(x)}\right) = \sum_{k=0}^k x_{ik}\beta_k; \quad i = 1, 2, \dots, N$$

Equation 29: Logit model

where $\left(\frac{P(x)}{1-P(x)}\right)$ are the odds.

In our case we decided to use two independent variables – index returns and volatility – both simultaneously and separately in order to get higher goodness of fit levels.

Formatiert: Schriftart: Nicht Kursiv

Logit model interpretations

The model is easy to interpret as it provides an Odds Ratio (OR) and a probability for a special event.

$$OR = \frac{odds_{x+1}}{odds_x} = \frac{e^{\beta_0 + \beta_1(x_1+1)}}{e^{\beta_0 + \beta_1 x_1}} = e^{\beta_1}$$

Equation 30: Odds Ratio (OR)

$$P(Y = 1|x) = E(Y) = \frac{e^{\beta_0 + \beta_1 x_1}}{1 + e^{\beta_0 + \beta_1 x_1}} = e^{\beta_1}; \quad 0 < E(Y) < 1$$

Equation 31: Probability for a specific event

Logit model: Odds Ratio

Odds are the ratio of the probabilities that event x would will occur ($P(x)$) and would will not occur ($1 - P(x)$). The odds ratio (OR), determined in logit regression, is the ratio of the odds for the event ($Y=1$) if x increases by one unit to the odds of event ($Y=1$) when x remains constant. It is found as e^{β_1} , where β_1 is the slope in the logistic regression equation. The OR could can be interpreted as a quantity which defines if whether one event has a better chance of occurring over than another event, if when one would an add additional unit is added to x , ceteris paribus. For example, in our case, for example, if slope β_1 is positive and the OR for return is equal to 1,3, we will state that for every unit increase in returns (e.g. by 0,01%) -the odds that ETFs would track better than MIF increase by 1,3 times, keeping other things constant. (Moore et al. 2011, pp. 17-8 – 17-12)

Kommentar [AB304]: "probability"?

Kommentar [AB305]: I do not recommend the use of italics. Please see my comment on the use of italics in your working document.

Kommentar [AB306]: What exactly? The ratio?

Kommentar [AB307]: Rather "quantities"?

Logit model: Probability for a specific event

In addition to the odds ratio, we could give add a probability for to a specific event as, F for example, the probability that of ETFs would tracking better than MIF if index returns would change from 11 to 12 per cent, keeping other things constant. (Moore et al. 2011, pp. 17-8 – 17-11)

Kommentar [AB308]: Rather plural?

Kommentar [AB309]: Rather "quantities"?

Logit model: goodness of fit characteristics

We implemented a specific goodness of fit procedures for the model to confirm that the model fits the data correctly. We used the following quantities:

- Percentage of correct prediction, which identifies how many results were correctly predicted by our model;
- -Log likelihood estimation in order to compare models fit;
- -Hosmer and Lemeshow Test, which accesses the data fit and calculates, how observed events match expected events. It is favourable to have high p-values for this test, which because p-values will show that the model fits the data correctly.
- Wald's ratio and its significance, which is similar to p-value in OLS.

Kommentar [AB310]: "Model's" (singular) or "models" (plural)?

We used pseudo R^2 , which is similar to OLS R^2 but computed under the restrictions of the logit model. Specifically, we paid attention to R^2 of Cox & Snell (a non-standardized Cox & Snell R^2 may not reach 1 at maximum levels); and Nagelkerke (a standardized version of Cox & Snell R^2 could be between 0 and 1). (SPSS, 2012)

Kommentar [AB311]: Not in your list of references.

Logit or probit

Long (1997, p. 83) notes that the choice between the logit and probit models is largely one of applicability, as the results are generally indistinguishable.

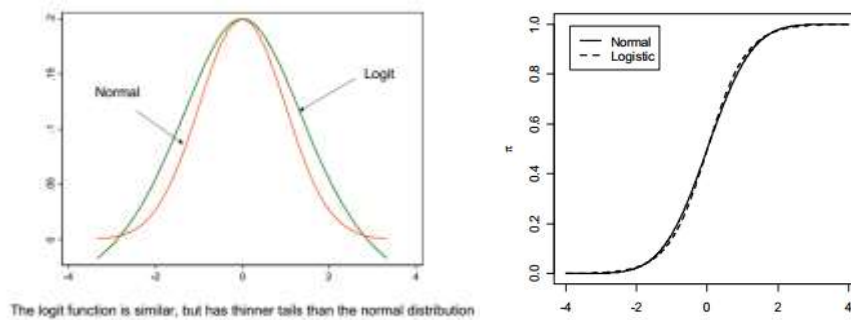


Figure 13: Logit and Probit regression differences. Source: Logit (2010)

From the Figure 13 shows above one can see that there is a small difference between the logit and probit models, with a Normal distribution being quite similar to the logit distribution. The difference is that the last one the logit distribution has thinner tails. In addition, by observing a scatter plot with probabilities, there is almost no difference between the two models.

4.5. Measurement Quality

To ensure the truth and generalizability of our measures, we have to critically assess our measurement of variables and the quality of our data critically to ensure guarantee the an overall accuracy of our study results. In Throughout research method literature there are three frequently discussed criteria: reliability, validity and generalizability, which, if tested respectively, provide a study with the necessary confidence about the studies consistency, strength of conclusion and degree of generalizability.

4.5.1. Reliability

Assessing reliability is necessary to ensure sufficient consistency of measurement, i.e. the degree to which we achieve the same result each time we use the same procedure under the same conditions with the same subjects (Adams et al., 2007, p. 235). Adams et al. suggest two tests in order to assess reliability, namely the test-retest method and the equivalent form method.

Test-retest Method

The test-retest method is concerned with the repeatability of measurement instruments. Given repetitive testing at different times, one should receive obtain the same results every time (Adams et al., 2007, p. 236).

We are using the chosen statistical methods to test historically recorded data over a specified period. Given the standardized methods and a static data set, our measures can be repeated by anyone at any time, yielding (if not alternated) the same results. Our measures are therefore produce predictable results and fulfill this reliability criterion given for this method.

Equivalent form Method

For this method, two alternative instruments are used, which are as equivalent as possible. Achieving The achievement of similar results (i.e. highly correlated results) with both instruments indicates a high reliability estimate (Adams et al., 2007, p. 236).

When calculating our core measure for tracking quality, we use different estimators to obtain a set of results, which can be compared to one another. The overall trend of the different measures shows similar patterns which increases our confidence in the internal consistency.

4.5.2. Validity

Validity describes the strength of the relationship between our actual measures and the purpose of the measures and thus the strength of our conclusions, inferences and the proposition we derive from them. Validity therefore is a necessary addition to reliability, as even if measured consistently, our findings are only useful if they represent what we actually want-intend to measure. Here-We can mainly be distinguish between internal and external validity. While internal threats affect the causality of the relationship between dependent and independent variables, and external threats affect the generalizability to other settings and situations. (Adams et al., 2007, p. 237)

Internal Validity

Our results could be biased by random influences due to differences in characteristics of our selected sample. We address this problem by considering and treating alternative influences to our results by concretizing our sample selection using a set of criteria as defined in 4.1.1. in order to avoid uncontrolled influences. We further use a longer time frame covering different states of the market to avoid snapshot effects and to be able to explore results against the background of different external influences. Different methods to test the strength of the relationship between explanatory and independent variables as well as for the significance of results will further help us to validate our findings from a statistical perspective.

External Validity

To be able to generalize our findings, our study needs-to-must be externally valid. Threats to external validity evolve-originate mainly from undesired influences on respondents which are not accounted for during the assessment. Our data consists of prices which are-is determined by the market behavior over time, incorporating all influencing variables on market characteristics which we-don't-will-not bias our time series but rather reflect the-true-reality as closely as possible. However, yet again, our sample could be biased by uncontrolled patterns in the number of respondents (respondents in our case are funds to which we have sufficient data ex-access). We therefore use the highest possible sample within our sample criteria and across different indices to achieve satisfactory external validity

Kommentar [AB312]: Highest possible in which sense? The highest possible number of respondents, or the highest possible quality of your sample units, or...?

4.5.3. Generalizability

In order to make our research useful for application by the target audience and for further research-studies, we need to make sure that we can generalize our results beyond our study to the population (Adams et al., 2007, p. 239; Saunders, 2009, p. 158). Since our goal is not to study the relationship between one pair of funds, but rather the European index fund industry as a whole, we need to make sure if and which of our findings can be generalized to the population.

We take a careful and conservative position towards our findings and to the conclusions we draw from them. Therefore, we retest especially weak relationships by altering the variables, e.g. removing outliers. If outliers are identified to be the stimulus threshold to make a result statistically significant, we take-them-out-of-consideration-ignore-them, since-as such results would strongly weaken the ability to generalize. If statistics or other indicators lead to

Kommentar [AB313]: This sounds as if you were simply going to ignore such cases. If you remove them from the study, however, you might rather write "they shall be removed from our study".

doubtfulness of generalizability, we will point out the results in question
correspondingly.

Kommentar [AB314]: Rather use the passive here? This sentence sounds very clumsy in the active voice. Please also see my comment about the use of tenses and the passive in your working document.

5. Results and Analysis

Throughout ~~e~~Chapter 5 we will first present and describe our sample data using descriptive statistics. Calculating descriptive statistics provides us with the necessary data to answer the first two hypotheses. We then report the results of our analysis regarding Tracking Errors and Expense Ratios and, based on the results, answer the remaining hypotheses and discuss them respectively in relation with ~~previous~~ the literature ~~as~~ reviewed in ~~e~~Chapter 3. We conclude the chapter with a brief summary of our hypothesis outcomes.

5.1. Comprehensive Descriptive Statistics

Table 3 below ~~gives~~ presents a summary of average annualized returns and standard deviation of ETFs, Mutual Index Funds (MIFs) and the respective benchmark indices. Due to the ~~amount~~ number of ~~used~~ funds used, we ~~don't~~ do not state the respective values for each fund but rather merge the values for funds that track the same index.

Kommentar [AB315]: You need not introduce the abbreviation in brackets again if you have done so earlier. You can either write out the term or use the abbreviation. I think it is a good idea to repeat the full term at the beginning of a chapter just to remind your reader. However, I recommend you to do that with ETFs as well in order to be consistent.

Name	Mean Return (Annual)			St. Dev. (Annual)			Observations (each fund)
	ETF	MIF	Index	ETF	MIF	Index	
Type							
AEX	-0,035	-0,034	-0,035	0,248	0,247	0,247	1825
CaC40	-0,026	-0,029	-0,001	0,257	0,266	0,259	1825
DAX 30	0,046	0,043	0,053	0,260	0,268	0,261	1680
EURO STOXX 50	-0,045	-0,023	-0,044	0,273	0,254	0,258	1825
FTSE 100	-0,037	0,009	-0,003	0,266	0,227	0,236	1762
IBEX 35	-0,087	-0,060	-0,089	0,289	0,275	0,289	1597
MSCI EUROPE	-0,012	-0,017	-0,019	0,239	0,262	0,292	1689
SMI - SWISS INDEX	-0,002	0,008	-0,015	0,196	0,199	0,201	1825
TECDAX (XETRA)	0,043	0,014	0,047	0,300	0,254	0,279	1825
Average	-0,017	-0,010	-0,012	0,259	0,250	0,258	

Table 3: ETF, MIF and Index returns averaged 2006-2013

The mean returns for all ETFs, Mutual Index Funds and indices are -1,71%, -1,0% and -1,2%, respectively. We see that ETFs and MIFs mean return are very close to the index, with a remaining difference between ETF and index amounting to -71 bps and to +20 bps between MIF and index. The numbers indicate that, ETFs and MIFs deliver approximately the same returns as the benchmarks² ~~return~~ with MIFs performing slightly better. Since the calculated differences in return are very small, we ~~look~~ at focus on the t-statistics in order to see determine whether they have significant implications. In fact, the return differences between funds and benchmarks vary insignificantly from zero as shown by the t-statistics in Appendix 2 ~~show~~. The same applies to the difference between ETF and MIF returns as ~~it~~ can be seen in Appendix 3.

The descriptive statistics of the respective returns provide us with sufficient information to answer hypothesis 1 and 2.

We recall hypothesis 1 and 2:

Kommentar [AB316]: I would rather use "accept" or "reject" here, depending on the outcome.

Hypothesis 1

— The average return difference between Mutual Index Funds and their benchmark index is equal to zero.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \mu_{MF} - \mu_{Index} = 0$$

$$H_A: \mu_{MF} - \mu_{Index} \neq 0$$

Hypothesis 2

- The average return difference between Exchange Traded Funds and their benchmark index is equal to zero.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \mu_{ETF} - \mu_{Index} = 0$$

$$H_A: \mu_{ETF} - \mu_{Index} \neq 0$$

The results of our return test, as presented in ~~Table 3~~, show small differences in returns between funds and index, where MIF returns seem to be slightly higher and ETF returns lower than index returns. However, given the t-statistics, for our sample and time frame we accept H_0 for both hypotheses. ~~I.e. since~~ the mean daily return differences from 2006 to 2013 between ETF and benchmark and between Mutual Index Fund and benchmark did not significantly deviate from zero. This implies, that there is neither underperformance- nor outperformance of ETF or MIF. We therefore reject the alternative hypotheses H_A for ETFs and MIFs and state that on average, both fund models sufficiently approximate index returns, i.e. there is no significant overperformance- or underperformance. ~~The~~ findings will also be verified by the results of ~~the~~ preparative regression analysis in part 5.3.1.

These results meet expectations of passive index tracker funds and are in accordance with the findings of Rompotis (2005), who found neither significant return differences between ETF, index and MIF, nor any excess returns relative to the index. Svetina and Wahal (2008) also found ETFs and Mutual Index funds to be statistically indistinguishable when compared gross of fees. ~~At the same time the results back-support~~ Agapovas' suggestion ~~of that~~ ETFs and MIFs ~~being are~~ substitutes to a certain degree (Agapova, 2011). However, ~~different other former~~ literature suggests average underperformance of Index Funds. ~~E.g.~~ Blitz et al. (2010), ~~for instance~~, found underperformance of an average 84 bps in passive index funds in general (ETF and MIF). Given the insignificance of return differences, we ~~don't cannot~~ confirm this trend for our sample of European trackers.

Kommentar [AB317]: "our expectations" if this is what you expected, or "the expectations" if this is expected in general.

5.2. Analysis of return differences

To reveal any possible return differences due to seasonality, we compared absolute return differences by constructing 15 pairs of dummy variables, with each pair situated within the same index. Further, we obtained an average for all pairs in one month. *Figure 14* below shows the performance measured by absolute return differences for the chosen European funds.

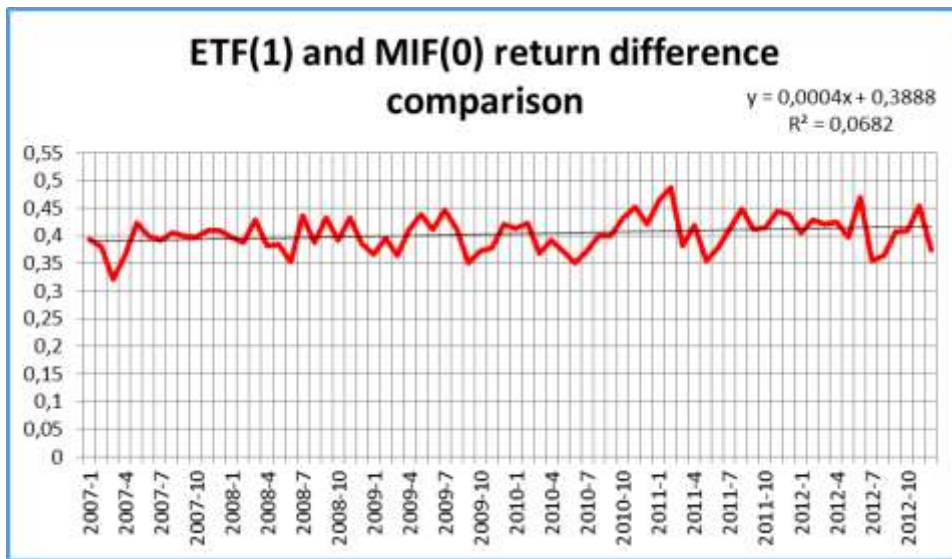


Figure 14: Return difference comparison among ETFs and MIFs, values closer to 1 indicate better performance of ETFs, closer to 0 – better performance of MIFs; Source: own design.

The descriptive statistics for the obtained data are as follows:

- Mean 0,40; median 0,40; geometric mean 0,40. All means are 0,40, which showing shows that the data are normally distributed and centered at one point. The meaning of 0,40 is that MIFs performed better as since this number is closer to zero. Although the mean is 0,40, we can not generalize this finding, because the chosen 15 pairs do not represent the whole number of funds used in analysis of TE throughout 5.2.2. and 5.2.3. Because in these chapters sections, we used 43 funds (-21 ETFs and 22 MIFs) and in the above analysis only 30 funds (15 ETFs and 15 MIFs).
- Standard deviation is 0,031; max 0,49; min 0,32, skewness - 0. This shows that the data are approximately log-normally distributed (there are no negative observations) and are not varying significantly with time. The last notion which is also clearly seen illustrated on the graph above in Figure 14.

Kommentar [AB318]: Rather use a full sentence here.

Kommentar [AB319]: Rather a full sentence.

Kommentar [AB320]: Is this supposed to be a “minus 0”? In that case please change the dash to a minus!

Formatiert: Schriftart: Kursiv

In a nutshell, we tried to find any seasonality of MIF and ETF tracking performance, but haven't have not obtained any proof of this effect throughout our examination of the selected 30 funds from 2007 until 2013. Frino and Gallagher (2001) tried to find a seasonality effect of tracking performance for ETFs only and revealed that, tracking performance is closely connected with dividends. In our case the graph shows a very slow tendency to for a better performance of ETFs in the future. We can therefore complement the evidence from found for hypothesis 1 and 2 with the fact that return differences for both instruments remain constant in the short as well as in the long term.

5.2.1. Summary of Results: Logistic regression

After performing logistic regression, we found no evidence that index returns and/or volatility could influence the phenomenon, where that in some periods ETFs perform better replication over MIFs, and/or contrariwise. Our results were not significant or showed no dependency between used the explanatory variables used. Thus, we conclude that index volatility and/or

Kommentar [AB321]: Please see my comment about the use of italics in your working document.

returns have no impact on the prediction whether ETFs replicate better than MIFs, or contrarily.

All results of logit regression can be observed in *Appendix 4*. Out of 15 regressions, only 4 had significant results for the odds ratios. ~~They~~ Significant results were obtained for IBEX, CAC 40, STOXX 50 and FTSE 100 indices. These odds ratios (significant at 10%) signalled that there are no dependencies between the observed phenomenon and the chosen variables (index returns and volatility).

In a nutshell, we tried to answer the question why sometimes MIFs replicate better than ETFs or vice versa by using tracked index returns and volatility. In our examination of 30 funds from 2007 till 2012, ~~w~~We haven't have not obtained any proof that those variables could influence the studied phenomenon, ~~by examining 30 funds from 2007 till 2012.~~

Frino and Gallagher (2001) tried to find a seasonality effect of tracking performance for ETFs only and revealed that, tracking performance is closely connected with dividends. In our case, the figure 14 shows very slow tendency for a better performance of ETFs in the future. We can therefore complement the evidence from hypothesis 1 and 2 with the fact that return differences for both instruments remain constant in the short as well as in the long term.

5.3. Tracking Error Analysis

The overall impression of the descriptive statistics is that both fund types deliver approximately the same performance as their benchmark indices while showing similar (even though slightly higher than the benchmarks') risk characteristics. The very identical structure of returns and risk once again substantiates the question that underlies the field of our research, i.e. what are the decision criteria an investor should apply when choosing the fund company? Throughout the following sections we investigate ~~some~~a number of factors that we believe might be helpful to find an answer to this question.

TE is one of the key determinants of index funds' tracking performance, and it is often used to assess the fund or predict a fund's² future tracking performance within a given level of confidence. Our ~~goal-objective~~ is to determine which investment vehicle (ETF or MIF) ~~in Europe has exhibits a~~ lower TE, ~~and produces better tracking on the European level.~~ In addition, we will analyze variations of TE and its usefulness. We start with the calculation and analysis of Tracking Errors (TEs) to create the basis for a comparison that provides us with the necessary evidence to ~~answer~~ hypothesis 3. We first give a description of TE distribution among the two investment vehicles and later investigate changes ~~throughout over~~ time for the respective fund category. As discussed before, we focus our analysis exclusively on ~~those~~ indices, which are widely used by European Investors. Our choice of indices ~~is~~are: AEX, CAC 40, DAX 30, Euro STOXX 50, FTSE 100, IBEX 35, MSCI Europe, SMI and tecDAX.

We will structure the TE analysis as follows:

1. Comparison of TE using regression
2. Long Term Comparison of TE for 2006—2013
3. Annual TE comparison
4. Summary of TE results
5. Correlation of TE with MSCI Europe

Kommentar [AB322]: If you really want to italicize "phenomenon" (which I do not recommend, as I have explained in your working document), please do so consistently.

Kommentar [AB323]: Repetition! This same paragraph appears above already. Please compare with the last sentences of the last paragraph under 5.2.

Kommentar [AB324]: Isn't that a repetition because it is already contained in "lower TE"?

Kommentar [AB325]: This is a good way of introducing a short form of a term. However, the short form should occur the first time you refer to Tracking Error (I think the first time the term occurs is in your summary, and then again on page 3). Please never use the short form alone as you have done at the beginning of this section without having introduced the full term with the acronym following in brackets.

You may use the short form alone after you have introduced it together with the full term, but it is always a good idea to use the full term again once in a while just to remind your reader of which term you are talking about.

Perhaps you can also find a "regular" way of using full term and short form alternatively in order to give your reader some orientation. After having introduced your term and its short form for the first time in your thesis, you could, in each following section or longer paragraph, write out the full term at the beginning, and then use the short form afterwards. In the next section or paragraph you repeat the full term once and then use the short form, and so on. Such a strategy will give your reader a feeling of security and orientation.

Please treat all other short forms of terms used in your text (MIF, ETF etc.) in the same way: Where you introduce a term for the first time, write out the full term, followed by the short form in brackets.

Kommentar [AB326]: Rather "accept" or "reject".

Kommentar [AB327]: I do not recommend italics. Please see my comment on italics in your working document.

5.3.1. Regression and Tracking Error 1

We performed a regression using a model described by Frino and Gallagher (2001) and tested by Rompotis (2005). The model is $r_{fi} = \alpha_i + \beta_i r_{bi} + \varepsilon_i$ and the expected outcome for the index tracker is to get Betas close to one and Intercepts close to zeros. Betas with a value of one will indicate that an investment vehicle is ideally tracking a given benchmark, and zero intercepts will signal that a fund is not receiving excess returns above index returns. These are “ideal world” assumptions, which are unlikely to be obtained in the real world reality.

Kommentar [AB328]: Perhaps use a slightly more formal alternative such as “move” or “obtain”, whatever is appropriate in the context.

Table 4 below shows the outcome of the regression. The following conclusions are made on the basis of it:

Kommentar [AB329]: The results in the table?

1. Both ETFs and MIFs have zero intercepts, which signals that they do not outperform their benchmark. In some cases intercepts were slightly positive, but these observations were statistically insignificant. This outcome suits is in line with studies performed earlier for U.S. ETFs by Agapova (2011), Elton et al. (2002), Rompotis (2005) and Frino and Gallagher (2001). As mentioned above, other studies suggested that there are no excess returns in the passive management industry within ETFs and MIFs. This supports the results from chapter Section 5.1., (recall of hypothesis 1 and 2), where we found that both ETFs and MIFs do not significantly outperform- or underperform benchmark indices.

Kommentar [AB330]: I think bold font is not necessary here.

Regression for ETFs and MIFs to their benchmark based on returns of 2006 – 2013

Index	Name	MIF						ETF						Obs.	
		Interc ep	t-ratio ^a	Slope	t-ratio	R ²	SE(TE1)	Name	Interc ep	t-ratio ^a	Slope	t-ratio	R ²		SE(TE1)
AEX	BNPPARIBAS	0,000	-0,359	0,0306**	1,306**	0,001	0,015	SPDR	0,000	-0,034	0,978	160,895	0,934	0,004	1825
AEX								ISHARES	0,000	-0,027	0,975	206,235	0,959	0,003	1825
CAC 40	ING.DRCT. LYXOR	0,000	-0,354	-0,03**	-1,331**	0,001	0,016	LYXOR	0,000	-2,205	0,971	234,289	0,968	0,003	1825
CAC 40	NATIXIS	0,000	-0,424	0,437	20,308	0,184	0,015	Amundi	0,000	-0,636	0,976	189,488	0,952	0,004	1825
CAC 40	MAM MEESCHAERT FCP	0,000	-0,292	0,949	60,742	0,669	0,011								1825
CAC 40	STRATEGIE	0,000	-0,928	0,903	93,176	0,826	0,007								1825
CAC 40	GESTION VALOR	0,000	-0,317	0,801	60,396	0,667	0,009								1825
DAX 30	OPPENHEIM	0,000	0,110	0,579	27,876	0,317	0,013	ISHARES	0,000	-0,162	0,936	107,931	0,874	0,006	1680
DAX 30	DT.POSTBANK	0,000	0,152	0,521***	24,109***	0,257	0,014	LYXOR	0,000	0,030	0,895	86,723	0,818	0,007	1680
DAX 30	PIONEER INVESTMENTS	0,000	0,161	0,616	30,979	0,364	0,013								1680
STOXX 50	INVERSAFEI BOLSA EURO	0,000	0,451	0,840	77,071	0,765	0,007	ISHARES	0,000	-0,078	0,948	112,517	0,874	0,006	1825
STOXX 50	VITALGESTION	0,000	0,593	0,863	113,833	0,877	0,005	UBS	0,000	-0,212	0,607	28,224	0,304	0,015	1825
STOXX 50	GESBANKINTER	0,000	1,495	0,965	216,546	0,963	0,003	LYXOR	0,000	-0,137	0,853	69,496	0,726	0,008	1825
STOXX 50	DBV WINTERTH.FD.MAN.CO.	0,000	1,368	0,979	230,449	0,967	0,003	SPDR	0,000	0,191	0,827	46,737	0,545	0,012	1825
STOXX 50	ING DIRECT	0,000	0,343	0,815	72,928	0,745	0,008	DB Xtracker	0,000	0,049	0,981	181,031	0,955	0,004	1562
STOXX 50	MORGAN STANLEY LBRTY.	0,000	0,207	0,875	91,450	0,821	0,007								1825
STOXX 50	UNION INVESTMENT LX	0,000	0,319	0,966	205,013	0,958	0,003								1825
STOXX 50	ETOILE GESTION	0,000	-0,157	0,394***	16,414***	0,129	0,016								1825
STOXX 50	KBC INDEX	0,000	1,070	0,969	165,410	0,938	0,004								1825
FTSE 100	HSBC	0,000	-0,031	0,573	30,817	0,350	0,011	UBS	0,000	-0,810	0,788	34,117	0,398	0,013	1762
FTSE 100	HALIFAX UK	0,000	0,332	0,589	32,780	0,379	0,010	ISHARES DE	0,000	-0,352	0,757	38,151	0,453	0,011	1762
FTSE 100								ISHARES	0,000	-0,151	0,988	212,406	0,962	0,003	1762
IBEX 35	MORGAN STANLEY LIBERTY	0,000	0,373	0,862	85,032	0,819	0,007	BBVA	0,000	-0,157	0,897	80,958	0,804	0,008	1597
MSCI EUROPE	VANGD, ADMIRAL SHS.	0,000	-0,218	0,800	48,145	0,579	0,012	LYXOR	0,000	-0,341	0,754	86,348	0,815	0,006	1689
MSCI EUROPE	AMUNDI	0,000	0,345	0,669	61,170	0,689	0,008	SPDR	0,000	0,479	0,722	85,972	0,814	0,006	1689
MSCI EUROPE	SWISSCANTO CH	0,000	-0,212	0,734	75,440	0,771	0,007								1689
SMI	CREDIT SUISSE CSA	0,000	1,965	0,980	279,167	0,977	0,002	ISHARES	0,000	0,685	0,674	48,141	0,560	0,007	1825
SMI								UBS	0,000	-0,033	0,932	92,284	0,824	0,005	1825
SMI								Credit Suisse	0,000	0,152	0,963	156,910	0,931	0,003	1825
TECDAX	LUX EURO STOCK	0,000	0,106	0,076**	3,61**	0,007	0,016	ISHARES	0,000	-0,056	0,970	90,102	0,817	0,008	1825
Average		0,000		0,683		0,578	0,009		0,000		0,876		0,776	0,007	

*All intercepts t-ratios are statistically insignificant, thus intercepts are not different from zero.

** Significant at 10% Confidence Interval.

*** Significant at 5% Confidence Interval.

All other slopes are significant at 1% Confidence Interval.

Kommentar [AB331]: I recommend you to not use italic font. Also: is "Confidence Interval" indeed capitalized? Please check in your literature.

Table 4: Regression for ETF and MIF against benchmarks 2006-2013. Source: Own design

2. In ~~Table 4~~ ~~above~~, we reveal our results regarding all funds ~~picked~~ ~~sampled~~ for analysis. ~~The first~~ impression from ~~the table~~ is that ~~the~~ slopes of ETFs are ~~more~~ closer to unity than ~~those~~ of MIFs (the average for MIFs ~~is~~ **0,68** and ~~for~~ ~~ETFs~~ ~~is~~ **0,88** for ~~ETFs~~). This signals that ETFs perform a better job in tracking. However, this conclusion ~~can~~ ~~not~~ be reliable as ~~4~~ slopes were insignificant. ~~They~~ are AEX's BNP Paribas; CaC 40's ING DRCT; Etoile Gestion, which is tracking STOXX 50; and TecDAX's Lux Euro Stock. For ~~an~~ appropriate analysis, we selected slopes, which were significant at ~~a~~ 5% level. The outcome is that ~~the~~ average slope for ~~ETF~~ ~~is~~ **0,88** and; **0,8** for MIF ~~is~~ **0,8**; t stat ~~is~~ **0,02**, the difference is not significant at 5%. This signals that there is no significant difference between MIFs and ETFs tracking performance on average, under ~~a~~ 5% level alpha. One tail t-test was significant only at 10%, presenting that ETFs do not perform better tracking than MIFs on average given ~~the~~ 5% level. Similarly, R^2 (~~the~~ average for ~~ETF~~ ~~is~~ **0,776**; MIF ~~is~~ **0,7**) as used by Cresson et al. (2002) is not statistically different among ETFs and MIFs, t statistics **2,02**.

Kommentar [AB332]: Is there a digit missing before the "02", or is the comma just one too many?

3. Regarding the TE_1 , which is calculated using standard errors of regression and shown as "SE(TE1)" in ~~the Table above~~, we found **no significant difference** between ETFs (**0,0067**) and MIFs (**0,0078**); the t-statistics were **0,91**.

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5.3.2. Long Term comparison of Tracking Errors

Apart from TE_1 we calculated ~~two~~ more TE estimates. Throughout the following chapter we first describe obtained tracking errors in relation to each other and afterwards present the results in order to answer *hypothesis 3*.

Overall, our analysis used three methods of TE calculations:

- TE_1 – tracking error calculated as standardized residuals of regression, discussed in ~~chapter~~ *Section 5.3.1 Regression of Tracking Error 1*.
- TE_2 – standard deviation of Return differences $TE_2 = \sqrt{\text{var}(R_i - R_b)}$, where R_i is return of a fund and R_b is return of its benchmark.
- TE_3 – mean of absolute return differences.

The two charts ~~below~~ (in ~~Figure 15~~ and ~~16~~) give an impression of ~~fn~~ how TEs vary according to indices and across methods of calculation. Tracking Errors vary across indices in Europe. This is ~~to be~~ expected ~~sinceas~~ every index possesses ~~its~~ own characteristics and volatility. ~~Next~~ ~~Apart from that~~, TEs give similar results by using different calculation methods. Notably, TE_1 and TE_2 are identical across ~~the~~ ETF industry, and TE_3 varies from TE_2 and TE_1 , but ~~it~~ is significantly correlated (e.g. $\rho_{TE_1,TE_3} = 0,94$, $R^2 = 0,88$, t stat = **16,78**, significant at 1%). According to Pope and Yadav (1994), ~~than~~ ~~TE_2~~ and ~~TE_1~~ ~~would be~~ ~~were~~ ~~different~~, ~~should if~~ Betas ~~are~~ ~~not~~ ~~be~~ exactly one ~~than~~ ~~TE_2~~ and ~~TE_1~~ ~~would be~~ ~~different~~. In our case TE_1 and TE_2 are similar and ~~range~~ within ~~a~~ 0,002% variation (highlighted by error bars on the graph).

Kommentar [AB333]: What exactly? You need two elements to have a correlation. "It" is singular and thus one unit too little to produce a correlation. Please specify.

Kommentar [AB334]: Please revise this sentence. It is a bit difficult to understand. Different in what way?

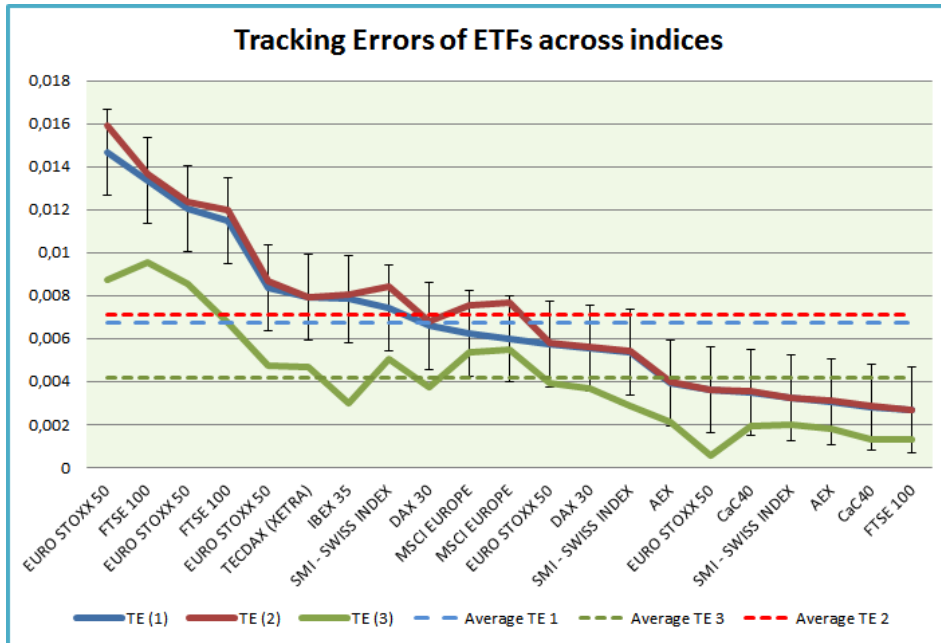


Figure 15: ETF Tracking Errors 2006 – 2013. Source: Own design.

Similar ~~as for to~~ETFs, we present a chart of TEs of MIFs. It reveals results similar to those of ETFs², ~~please see the~~which is demonstrated in Figure 16. For the MIFs, TE_1 and TE_2 are similar. Referring to TE_3 , it is less correlated than in the case of ETFs: $\rho_{TE_1,TE_3}=0,90$, $R^2 = 0,82$, t stat = 13,29, significant at 1%. For the table and graph including TEs for all MIFs, please refer to Appendix 5 and 6.

Kommentar [AB335]: What exactly? You need two elements to have a correlation.

Kommentar [AB336]: Please decide whether you want to use italics or not and use one option consistently.

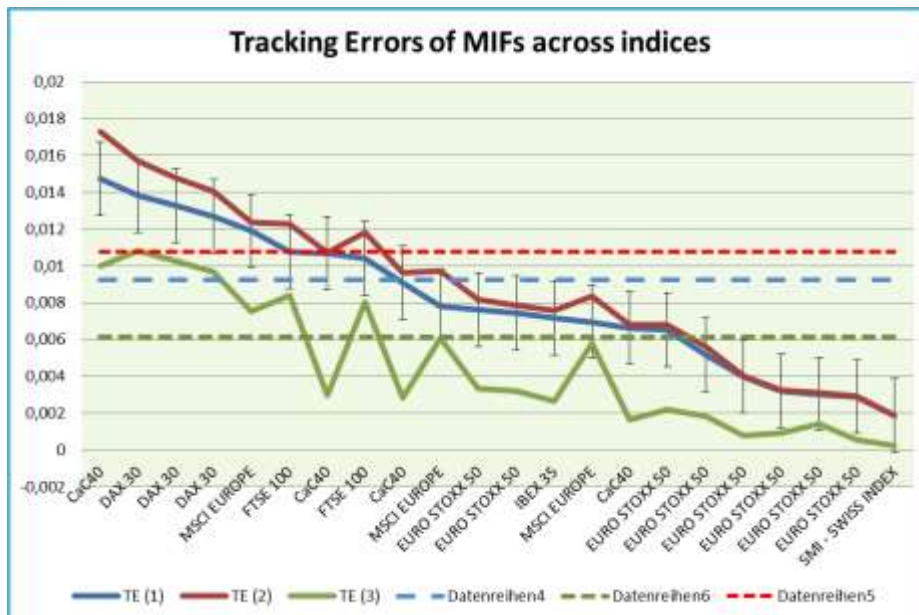


Figure 16: Tracking Errors of MIFs 2006 – 2013 (excluding 4 outliers). Source: own design.

In order to compare tracking errors across investment industries (between ETFs and MIFs), we have used t-tests for the mean with unequal variances. The results are presented in *Table 5*. TE_1 and TE_2 revealed no significant differences of mean TE for ETFs and MIFs at 10%. On average, the annual TE_1 is lower for ETFs by 20 basis points from MIFs. TE_2 is also lower by 20 basis points and TE_3 by 10 bps; however, the results are not statistically significant.

Coefficients	TE (1)	TE (2)	TE (3)
ETF mean	0,007	0,007	0,004
MIF mean	0,008	0,009	0,005
Df	41	41	38
t Stat	-1,184	-1,393	-0,458
P(T<=t) one-tail	0,122	0,086	0,325
t Critical one-tail	1,683	1,683	1,686
P(T<=t) two-tail	0,243	0,171	0,649
t Critical two-tail	2,020	2,020	2,024
Significant?	no	no	no

Table 5: Two-Sample t-test. Assuming Unequal Variance (no outliers).
Source: own design

Hypothesis 3

Based on the comparison above, we answer our third hypothesis:

- The mean Tracking Error difference between Exchange Traded Funds and Mutual Index Funds is equal to zero.

$$H_0: TE_{MF} - TE_{ETF} = 0$$

$$H_A: TE_{MF} - TE_{ETF} \neq 0$$

Given the results for Tracking Error 1-3, we accept H_0 . There was no statistical evidence that mean Tracking Errors of ETFs and MIFs differ from each other. This is in accordance with previous research by Rompotis (2005), Svetina and Wahal (2008) and Agapova (2011) performed on the U.S. and cross-national markets.

5.3.3. Annual Comparison of Tracking Errors

The confirmation of our Hypothesis 3 ~~old~~ suggests that over a longer period of time, TE difference becomes insignificant. We now ~~want-intend~~ to ~~find-out~~ determine ~~ifwhether~~ this result also holds true for a shorter investment period. To develop further knowledge about this relationship, we compare Tracking Errors of MIF and ETF on a yearly basis to see whether the tracking performance is constant for both funds over time. ~~At-f~~First, we ~~would-like-to~~ shall present an overview of daily TEs by years and then compare their pattern to ~~to~~ *Figure 17* shows the average TE, calculated according to method 2, for ETFs and MIFs.

Kommentar [AB337]: What is the full term here? "Basic points"? Just consider giving the full term first before you use the abbreviation, unless it is such a common term in your field that there is no need to give the full term.

Kommentar [AB338]: Rather "accept" or "reject".

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

Kommentar [AB339]: Compare to what?

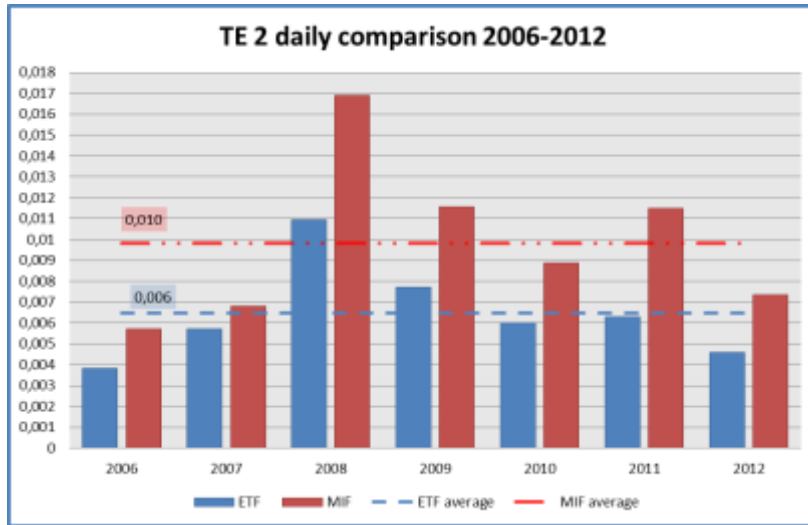


Figure 17: Tracking Error Comparison, ETFs (blue), MIFs (red), no outliers. Source: own design.

As visible in from the Figure 17, that TE_2 increased during 2008 for both; ETFs and MIFs. The increase for ETFs was 44 and 13 bps from the average; during 2008 and 2009; respectively, and 60 and 15 basis points for MIFs.⁵ Another, even Although weaker, another breaking point for both fund types can be observed during 2010. The bottoms and peaks in 2008 and 2010 are likely to be attributed to high turbulence caused by the U.S. mortgage crisis of 2008 and by the European debt crisis triggered in 2010. Displaying the annual Tracking Error as done in Figure 18 below; draws depicts an even clearer picture of the events.

The annual Tracking Errors are in line with the daily ones, as can be seen by comparing Figure 17 above and Figure 18 below. Both graphs indicate that ETFs tend to have slightly smaller TEs than MIFs.

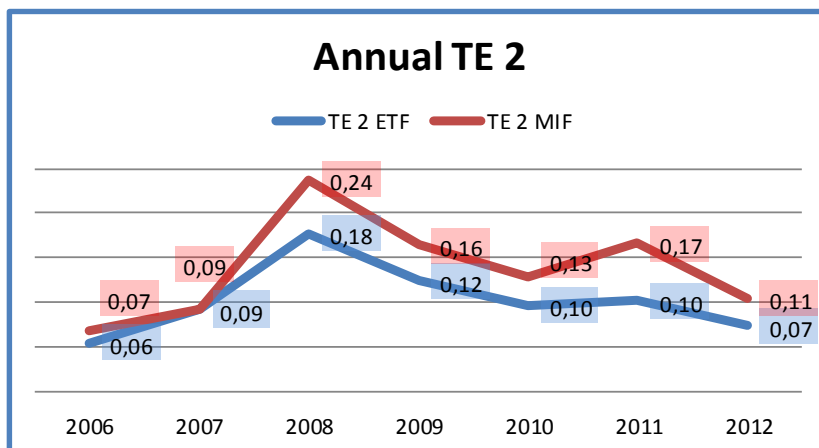


Figure 18: Annual Tracking Errors 2006 – 2013; Source: Own design

⁵ TE_3 draws a similar picture and will therefore not be discussed in detail.

In order to test the impressions from the graphs above, we applied t-tests for the mean tracking error on ~~the an~~ annual basis. *Table 6* shows the results based on TE method 2.

Year	2006	2007	2008	2009	2010	2011	2012
Coefficients	TE (2)	TE (2)	TE (2)	TE (2)	TE (2)	TE (2)	TE (2)
ETF mean	0,055	0,092	0,177	0,124	0,097	0,102	0,074
MIF mean	0,069	0,093	0,237	0,164	0,129	0,166	0,105
t Stat	-1,08	-0,04	-1,58	-1,37	-1,50	-2,57	-1,96
P one-tail	0,14	0,49	0,06	0,09	0,07	0,01	0,03
t Crit one-tail	1,69	1,68	1,69	1,68	1,68	1,69	1,69
P two-tail	0,29	0,97	0,12	0,18	0,14	0,01	0,06
t Crit two-tail	2,03	2,02	2,02	2,02	2,02	2,03	2,03
Significant at	No	No	No	No	No	5%	10%

Table 6: Annual TE₂ t tests (no outliers); Source: own design

Against the impression from *Figure 18*, we found no significant differences between MIFs and ETFs from 2006 to 2010. ~~Differences can be noted between Years 2011 until and~~ the end of 2012. ~~signal that there were difference and Furthermore,~~ ETFs performed better than MIFs based on TE₂ using both annual and daily rates. In 2011 the difference was 40 bps (5% significance level) in favor of ETFs and 20 bps (10%) in 2012. Significant results obtained only for the last two years of the ~~studied~~ period ~~of study~~ can ~~not~~ signal that ETFs perform better than MIFs in terms of tracking; ~~thus we would~~ conclude that both ETFs and MIFs have, on average, ~~the~~ same TEs on a yearly basis.

Summary

We compared TEs calculated by three different methods across ETFs and MIFs, including and excluding outliers as ~~mentio~~explained in the previous chapter. First, TEs analysis with outliers resulted in ~~a~~ significant difference among ETFs and MIFs in terms of TEs for the whole period and ~~for~~ each year. ~~The S~~second analysis, ~~which~~ ~~exclud~~ing outliers, revealed no significant difference. *Table 7* presents the results of our comparison:

Check	Betas	TE 1(SSE)	TE 2(stdv)	TE 3(MAD)
<i>with outliers</i>				
Long-term difference?	yes	yes	yes	yes
Different per year?	n/a	n/a	yes	Evidence for 2008 and 2011(10%)
<i>excluding 4 outliers</i>				
Long-term difference?	no	no	no	no
Different per year?	no	no	Evidence for 2011-2012	no

Table 7: Results of Tracking Error comparison; Source: own design.

We ~~checked~~ ~~investigated~~ whether ETFs perform better tracking in comparison to MIFs ~~by~~ using two sample t-tests for unequal variance. “Long-term difference” represents the

comparison using comprising results for the whole span of 2006—2013; “different per year” indicates whether there were differences for the chosen variables among each year separately.

Kommentar [AB340]: “each separate year”?

In a nutshell, we show that tracking errors in the long, as well as in the short run are moving around the same mean for both investment tools with a slight indicator for lower TEs of Exchange Traded Funds throughout the last two years. The yearly investigation of TE further suggests that they might be influenced by certain events that affected the economy in the past. This relationship will be analyzed in detail throughout *chapter Section 5.3.4. Market State and Tracking Error.*

Excursus: Discussion of Outliers

In the following, we discuss outliers which we dismissed from the main comparison and tests when comparing TEs.

Index	Name	Intercept	t-ratio*	Slope	t-ratio	R ²	SE(TE1)	Comment
AEX	BNPPARIBAS	0,000	-0,359	0,031	1,306(10%)	0,001	0,0153	<i>original</i>
AEX	BNPPARIBAS	0,000	1,440	0,984	240,3(1%)	0,971	0,0003	<i>MA100 model</i>
CAC 40	ING.DRCT.	0,000	-0,354	-0,030	-1,331(10%)	0,001	0,0157	<i>original</i>
CAC 40	ING.DRCT.	0,000	-20,982	0,987	210,1(1%)	0,962	0,0003	<i>MA100 model</i>
STOXX 50	ETOILE GESTION	0,000	-0,157	0,394	16,414(5%)	0,129	0,0164	<i>original</i>
STOXX 50	ETOILE GESTION	0,000	0,695	0,975	202,4(1%)	0,963	0,0004	<i>MA100 model</i>
TECDAX	LUX EURO STOCK	0,000	0,106	0,076	3,61(10%)	0,007	0,0157	<i>original</i>
TECDAX	LUX EURO STOCK	0,000	-12,468	0,905	200,7(1%)	0,959	0,0004	<i>MA100 model</i>

Table 8: Regression of outliers with their benchmarks; Source: Own design.

*all intercepts t-ratios are statistically insignificant; thus intercepts are not different from zero

Kommentar [AB341]: I recommend you to not use italic font. Please also see my comment regarding the use of italics in your working document. Apart from that, I recommend you to use the same format for asterisk information as you have done previously (see table 4). Please also consider the placement of your asterisk text and the caption of the table (please compare to layout of table 4).

Formatiert: Schriftart: (Standard) Times New Roman

Kommentar [AB342]: If this is a singular fund, your text should read “a fund’s performance”, if these are plural funds, it must be “the funds’ performance”

Table 8 above presents the original results of the regression and as well as the results after using a Moving Average model of a span of 100 on 1825 observations. We used the MA model in order to smooth high frequency data (daily returns for 7 years) and obtain a comprehensible picture of fund’s performance. In addition, MA models could give better results in the case of high autocorrelation of returns. All outcomes of the MA model are significant and prove that chosen indices track their benchmark; however, they perform their job poorly on a daily basis. These results are consistent with Frino and Gallagher (2001) and Chu (2011), they who reported that TEs which are calculated as using daily returns are usually high in comparison to those TEs, which are calculated using monthly data. For example, Frino and Gallagher, for example, studying studied ETFs index tracking performance relative to S&P500 using monthly returns with obtained betas not lower than 0,99 and accordingly quite rather low TEs. In contrast, Chu (2011) using used daily returns with obtained betas varying between 0,99 and -0,0009; His research was aimed at on ETFs tracking main Chinese indices. Moreover, it is worth to not noting that Chu studied funds replication using a span of one year in most of the cases, while and Frino and Gallagher’s studied span period of study was five years.

Kommentar [AB343]: Please check your spelling of betas. Further up, as for instance on pages 66 and 68, you capitalize the term. Please choose one spelling of the term and use it consistently, unless there is a particular reason for the difference in spelling, which I cannot understand as a layperson.

The following paragraphs present ~~se-are~~ analysis of outliers and ~~reasoning-reasons~~ behind ~~for poor~~ bad performance of funds selected as outliers (in total 4 funds all are MIFs):

- ING Direct tracking CAC 40 has too low Betas and high TEs. First, its objective is to obtain an annual TE of less than 1% or to keep it below 5% of CAC 40's volatility. We found that it is ranked with the lowest mark according to quantanalyst.com and boursorama.com (~~these are all are~~ representative independent fund analysis providers). In addition, ING Direct had ~~hard times~~ difficulties tracking CAC 40 after March of 2009 due to high turbulences on the market caused by the U.S. financial crisis ~~in US~~ and the beginning of the debt crisis in the EU. One can observe ~~from the in~~ *Figure 19* below, that the quality of tracking was appropriate before 2009 and decreased after 2009 during upward moves in CAC 40. This is consistent with the studies of Blitz et al. (2012) and Chiang (1998), stating that funds obtain a higher TE during upward trends of the index and track well during its decline.



Figure 19: ING Direct and CAC 40 2006-2013 Source: Own design

- AEX's BNPParibas had low tracking performance, because its main objective was to track Euronext All Share (~~#which~~ is a more comprehensive index including Euronext AEX index). Although AEX and AEX all share are similar on average using monthly data, we exclude ~~them~~ from our analysis of TEs as we use daily data. For details, please see ~~the~~ *Figure 20* below.

Kommentar [AB344]: This sounds odd. I cannot repair it for you because I lack the necessary knowledge. Please just try to clarify.



Figure 20: AAX (AEX all share) and AEX index, 2007 – 2013; Source: Own design

- Etoile Gestion Mutual Fund, changed ~~his~~-its objective to seek the maximum performance using stock picking, thus becoming actively managed. Euro Stoxx index was used for ~~him~~-the Etoile Gestion Mutual Fund only as a benchmark to evaluate the performance of the mangers. We exclude this index ~~due as from our study since~~ it is actively managed, (Etoile, 2013, p.1).
- Lux Euro Stock Mutual Fund tracking TecDax, performed badly, due to the same reason as ING Direct tracking CAC40—~~it was hard to~~; ~~it had difficulties~~ keeping up with the growing index after 2009. The ~~problem-difficulties started~~ set in after 2007 and increased significantly after 2009 due to the U.S. financial crisis, which increased the volatility of markets. Please see ~~the~~-Figure 21-below.



Figure 21: Lux Euro (black) and TecDax index (blue), 2007 – 2013; Source: Own design

To sum up, based on our analysis of TE_1 (using standard errors of residuals) and betas as an estimation of tracking performance of ETFs and MIFs, we can conclude that there was **no significant difference** in TE_1 between ETFs and MIFs during 2006 and 2013.

Our findings for European index trackers are similar ~~with~~ to those of Rompotis (2005) and Agapova (2011).

5.3.4. Market State and Tracking Error

We have divided the overall time frame of 7 years into four sub-periods (please see 4.1.1 Time Horizon) according to the different market states. The sub-periods capture several different moods of the European economy as measured by the MSCI Europe. ~~The~~ Figures 20 and 21 below show the development of the MSCI Europe and tracking errors respectively over the whole time horizon between 2006 and -2013. We used yearly averages of TE_2 and TE_3 for ETFs and MIFs⁶.

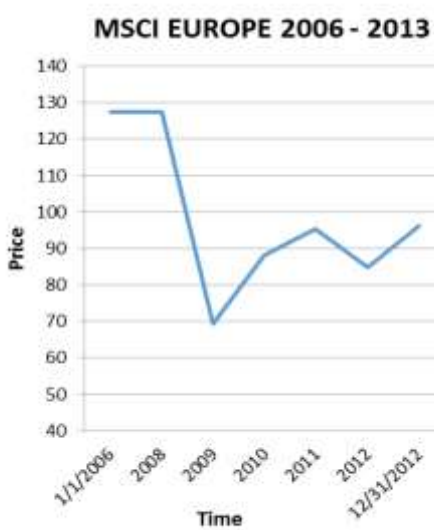


Figure 23: MSCI Europe yearly average (2006-2013). Data

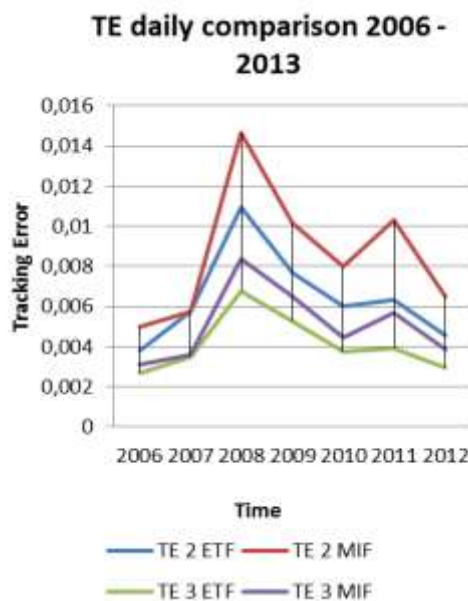


Figure 22: Average TEs (2006-2013).

⁶ The reason why we exclude TE_1 from this test is that it is based on the standard error of regression. To obtain TE-values for the years 2006-2007 we would need to run regressions for 47 funds for 7 years, which means $47*7=329$ additional regressions, ~~and therefore~~ which would exceed our schedule.

A comparison of both graphs (Figure 22 and 23) generates the impression of opposing movement between the European market and fund tracking error in a way that if the market descends, the tracking error starts to increase in the same time. Together with the fact that tracking error decreases while the market seems to recover, we already assume that tracking error is negatively correlated with the index movement and thus tracking quality increases during booms, while it seems to decrease during recessions.

To gain evidence about the relationship between market return and TE, we regressed TE_2 and TE_3 against MSCI Europe index returns. Doing so, the results for both methods turned out to be significant. The strongest relationship, however, evolved from becoming apparent in the regression using TE_2 .

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Kommentar [AB345]: Rather "converse"?

Name	ETF TE and MSCI	MIF TE and MSCI
Multiple R	0,78	0,80
R ²	0,60	0,63
SE	0,02	0,02
Intercept	0,06	0,05
t ratio	2,69(5%)	2,87(5%)
TE (2) Ann.	-0,52	-0,37
t ratio	2,74(5%)	2,94(5%)

Table 9: Regression of TE and MSCI Source: Own calculation

Table 9 illustrates the outcome of this regression analysis for ETF and MIF, respectively. In both cases, the alpha coefficients are positive (around 5%) and significant within the 5% level. Beta-coefficients are -0,52 and -0,33 for ETFs and MIF respectively and also significant at the 5% level. R² are 60% and 63,4%, respectively. These values indicate a clear negative relationship between the tested variables, while it seems to be slightly stronger for MIFs.

Sub-Periods

Figure 24 and 25 illustrate the respective Tracking Error in relation to the MSCI Europe return during the different periods between 2006 and 2013. The red line shows the rolling annual average of TE_2 , and the blue line illustrates the average returns of MSCI Europe. The lines clearly indicate a reverse movement between both variables. Using the evidence from the regression in combination with Figure 24 and 25, we can investigate the behavior of index tracking during the different sub-periods.

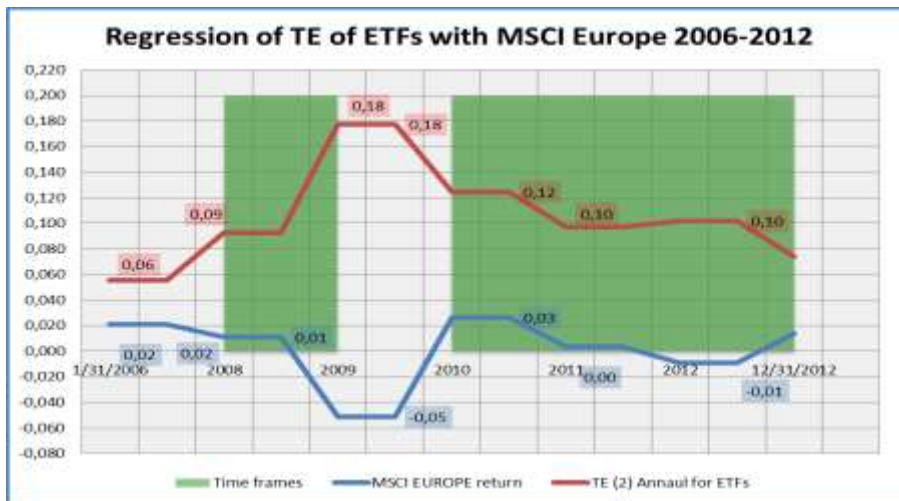


Figure 24: Regression TE and MSCI Europe for ETF Source: Own design

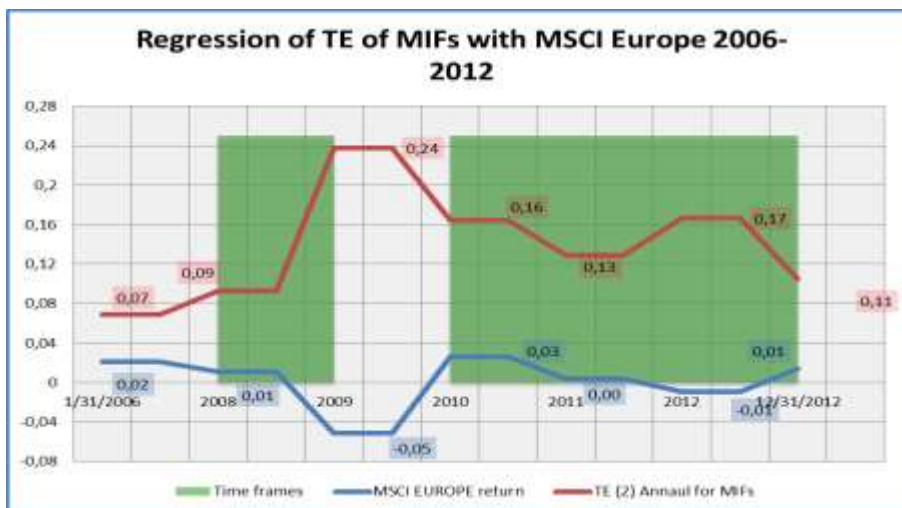


Figure 25: Regression TE and MSCI Europe for MIF Source: Own design

- Period 1: Dec. 2006 to Dec. 2007, dDeclining returns after the boom.
- Period 2: Jan. 2008 to Feb. 2009, sStrong recession (subprime mortgage crisis), marked green.
- Period 3: Mar. 2009 to -2010, aAscending trend (recovering phase)
- Period 4: Jan. 2010 to -Dec. 2012, sStagnation (European sovereign debt crisis), marked green.

Period 1: The first sections in the graphs show the mean change of the yearly TE and index returns from the end of 2006 to the beginning of 2008. The blue line reflects the

Kommentar [AB346]: I recommend you to not use bold but normal font for easier reading.

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decrease in average returns during the year ~~of 2007~~; even though the overall upwards trend was not ~~broken-interrupted~~ until 2008, there was already a decline in 2007. With the ups and downs during the year, Tracking Errors slightly increase for both instruments by the same amount.

Kommentar [AB347]: Rather "value"?

Period 2: The actual recession started in the beginning of 2008 as a result of the financial crisis and lasted until the beginning of 2009. For the index, this is shown by a strong decrease in returns during this time. Simultaneously, the slope of TEs strongly increases. We ~~can observe~~ see that the Mutual Index Fund TE increases by 100% compared to 145% for Exchange Traded Fund TE.

Period 3: From March 2009 ~~onwards~~, the market started to recover, and so did Tracking Errors for both investment instruments. Even though index returns reached pre-crisis levels again, TEs ~~have not don't~~ recovered to the base date level. While ETF Tracking Error even~~s~~ out at 4% above base date level, MIF Tracking Error recovers to 6% above base date.

Period 4: Recovery in 2010 ~~is~~ slowed down and changed into stagnation due to the European sovereign debt crisis. For the ~~upcoming~~ following years, the European market showed several smaller ups and downs which ~~might indicate the uncertainty~~ of the future development. On average, the level remains fairly constant over time. At first the drop in Tracking Errors slows down. Next, between 2011 and 2013, they vary antithetic to market returns. While ~~the~~ Tracking Error for ETFs averages ~~out~~ at 10%, ~~once again~~ MIFs ~~once again~~ react strongly to the market decline in mid-2011.

Kommentar [AB348]: Perhaps rather "which indicates the unpredictability"?

Hypothesis 4

- For ETFs: There is no correlation between mean Tracking Error and the European economy.

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROPE}^{TE} \neq 0$$

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Hypothesis 5

- For MIFs: There is no correlation between mean Tracking Error and the European economy.

$$H_0: \beta_{EUROPE}^{TE} = 0$$

$$H_A: \beta_{EUROPE}^{TE} \neq 0$$

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What is visualized by ~~the~~ Figure 24 and 25 is verified by the regression results in Table 9; ~~therefore~~, we can state that changes in Tracking Errors of European Index Trackers are clearly correlated to the movement of European markets. We see that Index Funds in the form of ETFs and MIFs, which track European indices, do a better job during booming or recovering development and deliver a poorer tracking quality ~~for~~ during recessions. We further demonstrate that Mutual Index Funds tend to be stronger affected by this relationship than ~~the~~ corresponding ETFs.

Kommentar [AB349]: Namely what? Please explain.

The results are in accordance with previous research on ETF Tracking Error, as conducted by Blitz and Huji (2012), Rompotis (2006, 2011), Aber et al. (2009) and others, who show that ETF Tracking Error is positively correlated with market volatility. We ~~extend~~ ~~complemented~~ the ~~previous~~ ~~results~~ ~~of~~ ~~previous~~ ~~research~~ by showing a significant increase in Tracking Error during crises ~~periods~~, not only for European ETFs but also for Mutual Index Funds on European indices.

Kommentar [AB350]: This is too vague for an academic text. Either omit "and others" or name other authors.

5.4. Total Expense Ratio

5.4.1. ETF vs. MIF

As the descriptive statistics at the beginning of this chapter show, there are no significant differences in returns between the index tracker and the benchmark index. The two fund models therefore have a substitutive character (cf. Agapova, 2011) and thus, if replicating the same index, can be seen as direct competitors, who, amongst others, have to compete via their price, which is reflected by fund fees. Given similar return characteristics, we ~~are now going to investigate~~ ~~now want to know~~ whether either ETFs or MIFs are able to operate more cost efficiently than the ~~other~~ ~~respective~~ ~~counterpart~~. As previously discussed, we use Total Expense Ratio to represent fund fees as passed on to the investor.

Name	ETF	MIF
AEX	0,003	0,006
CaC40	0,003	0,015
DAX 30	0,002	0,007
EURO STOXX 50	0,002	0,012
FTSE 100	0,004	0,006
FTSE DEVELOPED EUROPE	0,001	
IBEX 35	0,003	
MSCI EUROPE	0,003	0,009
S&P EURO	0,004	
SMI	0,004	0,004
TECDAX (XETRA)	0,005	0,018
Average of TER	0,003	0,011

Table 10: Average of TER by index. Source: Own calculation

Table 10 shows the average values for ETFs and MIFs expense ratios.⁷ We can see that the average TER for Mutual Index Funds (1,11%) exceeds the average expenses of ETFs (0,3%) by a notable ~~ex~~ 0,8%. Respective t-tests (Appendix 7) show that the differences are significant within the 1% level. Figure 26 shows Expense Ratios of both fund types grouped up by indices.

⁷ Please note that for the calculation of average TER we removed ~~two~~ ~~2~~ outlier Mutual Index Funds: ING Direct CAC 40 and Morgan Stanley Liberty Spanish. We excluded ~~these~~ two values as they break away ~~by~~ ~~for~~ nearly 1% from the rest of the sample. Therefore, we find ~~this~~ ~~these~~ funds rather distorting than representative for the whole sample. The exclusion reduces the average TER for MIFs by 7 bps.

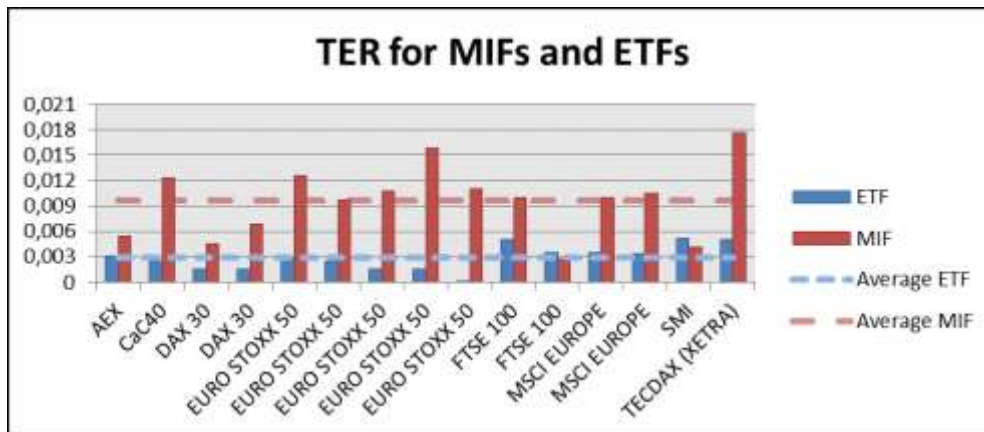


Figure 26: TER for ETFs and MIF grouped for Index. Source: Own design

We can see that MIF expenses are frequently higher than those of ETFs with two exceptions; Credit Suisse produces lower fees when tracking the Swiss Market Index (SMI) than iShares and the FTSE 100 tracker of HBSC has lower costs than the respective ETF of UBS. In both cases we are talking about a difference of 10 bps.

Hypothesis 6:

- The difference of mean TER for Exchange Traded Funds and Mutual Index Funds is equal to zero

$$H_0: TER_{MF} - TER_{ETF} = 0$$

$$H_A: TER_{MF} - TER_{ETF} \neq 0$$

Since the difference in the Total Expense Ratio between ETF and MIF is significantly different from zero, we have to reject H_0 .

Our findings about TER generally confirm the results of most of the previously conducted literature research also for European index trackers, i.e. that on average, ETFs have on average lower expense ratios than MIFs. Blitz et al. (2010, p. 655) state TERs for ETFs between 0,35% and 0,75% and for MIFs between 0,38% and 1,22% for different international benchmarks. Rompotis (2005, p. 13) calculated an average of 0,228% for ETFs and 0,423% for MIFs, and Agapova (2011, p. 328) states average expense ratios of 0,18 for ETFs and 0,75% for MIFs. We observe only two examples, where MIF beat ETF expense ratios. Here it appears that the company that which operates in the country the benchmark is related to, can act-operate more cost efficiently than the respective ETF provided by a foreign investment company.

5.4.2. Total Expense Ratio and Tracking Error

We saw-observed that for the most funds, Mutual Index Funds charge higher fees to the investor than Exchange Traded Funds. Since our final quality criteria for index fund performance is Tracking Error, we want-to-are attempting to work out know if there is a relationship between fees and tracking quality. *Hypothesis 7* and *8* will give an idea about the impact magnitude of TER on TE that an investor should consider when making the choice for choosing either one of the investment instruments. *Table 11*

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Kommentar [AB351]: Did you forget a “%” symbol here?

contains the results of the regressions with Tracking Error as dependent and Total Expense Ratio as explanatory variable. The regression was run for TE_1 to TE_3 separately and for both fund types combined as well as individually. Section A shows the regression including the pool of all funds; section B only includes ETFs and section C MIFs.

Kommentar [AB352]: Rather "and"?

Kommentar [AB353]: Isn't this a repetition of "separately" in the same sentence?

Coefficient	A: Regression of all investment vehicles			B. Regression of ETFs			C. Regression of MIFs		
	TE (1)	TE (2)	TE (3)	TE (1)	TE (2)	TE (3)	TE (1)	TE (2)	TE (3)
Type									
Alpha	0,007	0,007	0,005	0,006	0,006	0,003	0,010	0,010	0,008
t stat	7,76*	7,71*	6,41*	2,84**	2,74**	2,04***	4,87*	4,88*	4,7*
TER	0,038	0,042	-0,087	0,344	0,410	0,415	-0,119	-0,173	-0,283
t stat	0,39	0,39	1,09	0,55	0,62	0,94	0,79	1	2,19**
R ²	0,004	0,004	0,028	0,016	0,020	0,045	0,030	0,050	0,190
SSE	0,004	0,004	0,003	0,004	0,004	0,003	0,004	0,004	0,003

Table 11: Regression TE with TER. Source: Own design.

The constants for all regressions are slightly positive and significant between the 1 or 10% level. Coefficients for TER are positive for section B, negative for section C and varying for different Tracking Errors in section A. A look at the t-values, however, shows that only the coefficient for TE_3 in section C is significant at the 5% level. Yet, the graph in Appendix 8 shows that the results are not normally distributed and therefore cannot be taken as valid.

Kommentar [AB354]: 1%?

Based on the data from Table 11 we answer hypothesis 7-8:

Kommentar [AB355]: Rather "accept" or "reject".

Hypothesis 7

- There is no correlation between Total Expense Ratio and Mutual Index Fund Tracking Error.

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$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

Hypothesis 8

- There is no correlation between Total Expense Ratio and Exchange Traded Fund Tracking Error.

Formatiert: Standard, Keine Aufzählungen oder Nummerierungen

$$H_0: \beta_{TE}^{TER} = 0$$

$$H_A: \beta_{TE}^{TER} \neq 0$$

In contrast to Meinhardt et al. (2012), we cannot use expense ratios to explain ETFs Tracking Error. The same applies for the regression result using MIFs. Due to the lack of significance, we accept H_0 for both hypothesis 7 and hypothesis 8 and state that we cannot observe an effect of TERs on neither ETFs nor MIFs Tracking Error and therefore TER has no influence on the tracking quality of neither of them. This might be likely due to the small amount of observations we get made when splitting up the fund categories, which also enjoins us to with the task of generalizing the findings about the

relationship between TE and TER. It is therefore recommended to repeat the regression with a **bigger-more comprehensive** sample for both fund categories.

5.5. Executive Summary (preliminary)

Hypothesis #	Formulation	Accept Null Hypothesis?
Hypothesis 1	$H_0: \mu_{MF} - \mu_{Index} = 0$ $H_A: \mu_{MF} - \mu_{Index} \neq 0$	✓
Hypothesis 2	$H_0: \mu_{ETF} - \mu_{Index} = 0$ $H_A: \mu_{ETF} - \mu_{Index} \neq 0$	✓
Hypothesis 3	$H_0: TE_{MF} - TE_{ETF} = 0$ $H_A: TE_{MF} - TE_{ETF} \neq 0$	✓
Hypothesis 4	For ETFs: $\begin{cases} H_0: \beta_{EUROPE}^{TE} = 0 \\ H_A: \beta_{EUROPE}^{TE} \neq 0 \end{cases}$	✗
Hypothesis 5	For MIFs: $\begin{cases} H_0: \beta_{EUROPE}^{TE} = 0 \\ H_A: \beta_{EUROPE}^{TE} \neq 0 \end{cases}$	✗
Hypothesis 6	$H_0: TER_{MF} - TER_{ETF} = 0$ $H_A: TER_{MF} - TER_{ETF} \neq 0$	✗
Hypothesis 7	For MIFs: $\begin{cases} H_0: \beta_{TE}^{TER} = 0 \\ H_A: \beta_{TE}^{TER} \neq 0 \end{cases}$	✓
Hypothesis 8	For ETFs: $\begin{cases} H_0: \beta_{TE}^{TER} = 0 \\ H_A: \beta_{TE}^{TER} \neq 0 \end{cases}$	✓

Table 12: Overview of Hypothesis outcomes. Source: Own design.

6. Conclusion

In this chapter we restate and answer our research question from eChapter 1. We base the answer on the findings as-discussed throughout eChapter 5 and draw a conclusion about how the research purpose was fulfilled and what are-the main contributions of this paper are. We end with some-a number of interesting recommendations for further studies-that-which connect to our research and would pick up on our-the delimitations of our study.

The purpose of this paper was to identify and estimate measures for tracking quality within the passive fFund industry and compare them within the two investment instruments Mutual Index Funds and Exchange Traded Funds. We extended existing knowledge abouton the matter by exclusively appreciating exlusively-index funds with

Kommentar [AB356]: Contributions to what? The theoretical and practical fields of finance? Please specify!

Kommentar [AB357]: Please note: the paragraph in italics is written in the present tense, while the following paragraph is in the past tense. Please refer back to my comment regarding the use of tenses in your working document.

European benchmarks and provide a basis for ~~a~~-more extensive research ~~within~~ the field. As a basis for the study, we formulated ~~the-our~~ research question as follows:-

RQ: Do Exchange Traded Funds replicate the Performance of European Indices better than Mutual Index Funds?

To gain sufficient knowledge that allows us to answer this questions and the related hypotheses, we accomplished a number of test procedures that led us to ~~the-infer_ence~~ that

- *neither Exchange Traded Funds nor Mutual Index Funds show tracking quality advantage when compared to each other.*

We therefore answer the main research question with “no”.

Over the period ~~from-of~~ 2006 to the end of 2012, ~~on-average~~ both instruments on average achieved their objective, i.e. to deliver the same return as the benchmark index. This was shown ~~due-by-to~~ the insignificance of return differences between the fund types, as well as between funds and indices. The main evidence ~~about-for~~ tracking quality, however, was found by comparing the tracking errors of both instruments. Yet again, for the time frame in question we found no significant difference ~~which-tells~~ ~~ustestifying~~ that the overall tracking quality is the same for both instruments. This fact does also ~~no~~-t change when we switch from the long term to a yearly perspective. TE_2 was the only estimate that slightly indicated an advantage of ETFs for the last two years of our test period. ~~Even-Though,~~ we ~~don't-make-any-inference~~ ~~are-not-inferring-any-conclusive-statement~~ from this, it ~~can-might~~ be interesting to continue following the trend ~~in-over~~ the next years.

We further took the recent turmoils on global and European markets as an opportunity to see how tracking error behaves during different market states. Therefore the first sub question of our research problem asked ~~was the following~~:

- *SQ 1: Is tracking quality correlated with the states ~~in-of~~ European financial markets?*

Our answer ~~here-to this question~~ is “yes”. We were able to show a clear negative relationship between market movement and tracking error, which means that index tracking risk increases during recession and vice versa. We found this to be true for both instruments with slightly stronger evidence for Mutual Index Funds.

Investigating similar products with substitutional features, we ~~wanted-to-know~~ intended to determine if there is a price difference in the form of unequal expense ratios with the following sub-question:-

- *SQ 2: Is there a difference in fund costs?*

We show in our study that MIFs have frequently higher expense ratios than ETFs (on average 80 bps), which is in accordance with most research on other markets. However, in our case, the investigation of impacts of fees on Tracking Error does ~~no~~-t allow for any statistical inference.

Overall, our results lead us to the conclusion, ~~that~~ index investment instruments, namely Exchange Traded Funds and Mutual Index Funds on European indices, on average provide a satisfying tracking quality without showing significant quality differences in

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Kommentar [AB359]: I think it would be enough to refer back to your research problem by giving the section number in which you have already stated the problem.

Kommentar [AB360]: Same here – the section number as a reference to the sub-question will do.

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achieving their goal in the long term. Their yearly comparison with ~~to~~ the European market further indicates that both instruments show deficits in tracking accuracy during down markets, while this phenomenon is stronger for Mutual Index Funds. Furthermore, even though we found that on average, MIFs show higher fees, we cannot prove any related impact on tracking performance.

Based on our results, we agree that Mutual Index Funds and Exchange Traded Funds with the objective ~~of~~ tracking European indices are good, however not perfect, substitutes when tracking the same benchmark (cf. Agapova, 2011; Svetina & Wahal, 2008). While both deliver approximately the same tracking performance, it ~~is~~ mainly depend~~ing~~ on the investor and his objectives to decide whether to invest in ~~an~~ ETF or MIF.

6.1. Theoretical and Practical Contribution

The number of studies directly comparing Mutual Index Funds and Exchange traded funds is still limited, mainly due to the emerging state of Exchange Traded Funds, which made it difficult in the past to obtain ~~a~~ the necessary ~~number~~ amount of observations. Our study ties in on previous research and contributes to the subject by allowing for the generalization of knowledge to European index trackers. We not only provide new evidence about the development on the so far neglected European market, but also give an update on the field by using the most recent available data ~~available~~. By analyzing tracking performance, fee distribution and market correlation, we give a new and comprehensive insight into Index Funds in the form of Exchange Traded Funds and Mutual Index Funds. We provide feasible results for each investment instrument separately, as well as in a comparative manner which can be ~~applied~~ taken as a basis for further theoretical and practical purposes.

From a practical perspective, our results can be considered not only by current and future investors, ~~who~~ have~~ing~~ or consider ~~making~~ investments in the European market, but also by both sides of investment companies.

Firstly, investors who struggle with the understanding of the difference ~~of~~ between these two very similar investment instruments can ~~enhance~~ ~~complement~~ their ~~understanding~~ knowledge and, based on their preferences, consider our findings for decision making. ~~I.e. w~~ While a long-term investor, ~~for instance~~, might be rather indifferent between ETFs and MIFs, apart from tradability, our findings suggest a preference for ETFs for short-term investors due to lower fees and ~~at~~ the lower sensitivity towards short term changes in the European market.

Secondly, our results indicate a highly substitutional relationship between ETFs and MIFs. Investment companies therefore might consider our outcomes for strength and weaknesses investigation in order to pursue their competitiveness. We show that both, ETFs and MIFs, show inferior tracking during down markets, which should give incentive for improvement. Further, ETFs tend to beat passive mutual funds in cost efficiency, which has important implications for fund managers as fees are a frequent decision criteri~~ona~~ for passive investors.

6.2. Further Research Suggestion

We see reason to continually update the knowledge of our research subject. This is mainly due to the ongoing growth of the ETF market and the implied increasing amount

Kommentar [TS361]: State also limitations of use

Kommentar [AB362]: In order to be able to do or infer what?

Kommentar [AB363]: Feasible in what sense? Results as such can hardly be feasible. What do you mean?

of data availability, which will ~~allow for~~ promote higher research flexibility in the future. It will ~~stay~~ remain interesting to monitor the coexistence of MIFs and ETFs, and to follow current trends. ~~The Future~~ questions ~~for the future~~ for research projects ~~might~~ could be, ~~whether~~ if ETFs keep gaining market shares and whether there will be further improvements (e.g. we found weak evidence for short term tracking improvement of ETFs when compared to MIFs). We ~~would like to~~ motivate researchers to not only ~~to~~ renew previous findings and to explore further markets, but also to take our results as a basis for a cross-sectional investigation, e.g. to expose possible differences between the well-investigated U.S. fund market and Europe trackers.

We further recommend an in-depth analysis of more factors that affect tracking quality of index funds on European markets. This might be done by using logistic regression, as ~~we~~ introduced ~~it~~ throughout this work. Including more factors such as, expense ratios, fund volume ~~or~~, fund age ~~and others that which~~ have a potential impact on tracking in combination with a higher amount of observations would further contribute to the understanding of differences between ETFs and MIFs on the European Market.

Such a casual study could also have an exclusive focus on Exchange Traded Funds. As we have seen throughout ~~e~~Chapter 3, ETFs make use of different methods to replicate indices (namely *physical* and *synthetical* replication). Since the replication method is at the heart of index tracking, there is a substantial ongoing debate on which of the methods is superior. It would therefore be valuable to continue this discussion within our population of European index trackers.

Another direction for further research ~~would~~ might be to focus on the more specialized sector funds, which are also available to investors in the form of MIFs as well as ETFs. These more “exotic” tracker funds provide a variety of additional investment possibilities and became of increasing importance ~~throughout in~~ the recent ~~years~~ past. Due to the extensive diversification of ~~the~~se instruments across market sectors, ~~they~~ provide a lot of food for thought.

Kommentar [AB364]: A little unsuitable in style. Perhaps rather something in the range of “they offer a wide variety of topics for further research”.

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Appendix 1: List of Fund pairs with matching Indices

Index	Pair(ETF 1st)
DAX	Lyxor and Pioneer
STOXX	Lyxor and Gesbanki
MSCI EU	Lyxor and Vangd
STOXX	SPDR and DBV
STOXX	SPDR and Swisscanto
SMI	UBS and CS
FTSE	UBS and HSBC
STOXX	UBS and Vital Gestion
CAC40	Amundi and Strategie
IBEX	BBVA and MS
STOXX	DBX and Union
FTSE	Ishares and Halifax
DAX	Ishares and Oppenheim
STOXX	Ishares and Inversaf
CAC 40	Lyxor and MAM

Appendix 2: T-tests for mean return difference

T-tests for the mean return difference, daily based on 2006 - 2013 Source: Own calculation

Index	Name of a Fund	Type	Mean of	Mean of index	t stat	Significant?	Obs.
AEX	BNP	MIF	-0,0001	-0,0001	0,009	no	1825
AEX	SPDR	ETF	-0,0001	-0,0001	0,000	no	1825
AEX	IHARES	ETF	-0,0001	-0,0001	0,002	no	1825
CAC40	Lyxor	ETF	-0,0001	0,0000	-0,273	no	1825
CAC40	Amundi	ETF	-0,0001	0,0000	-0,095	no	1825
CAC40	ING.DRCT.	MIF	-0,0001	0,0000	-0,234	no	1825
CAC40	NATIXIS	MIF	-0,0001	0,0000	-0,268	no	1825
CAC40	MAM FRANCE	MIF	-0,0001	0,0000	-0,136	no	1825
CAC40	STRATEGIE	MIF	-0,0001	0,0000	-0,264	no	1825
CAC40	GESTION VALOR	MIF	-0,0001	0,0000	-0,124	no	1825
DAX30	ISHARES	ETF	0,0002	0,0002	-0,245	no	1680
DAX30	LYXOR	ETF	0,0002	0,0002	-0,089	no	1680
DAX30	OPPENHEIM	MIF	0,0001	0,0002	-0,117	no	1680
DAX30	DT.POSTBANK	MIF	0,0001	0,0002	-0,098	no	1680
DAX30	PIONEER	MIF	0,0002	0,0002	-0,062	no	1680
EURO STOXX 50	INVERSAFEI BOLSA	MIF	-0,0001	-0,0002	0,576	no	1825
EURO STOXX 50	VITALGESTION	MIF	-0,0001	-0,0002	0,583	no	1825
EURO STOXX 50	GESBANKINTER	MIF	-0,0001	-0,0002	0,790	no	1825
EURO STOXX 50	DBV WINTERTH.FD.MAN.CO.	MIF	-0,0001	-0,0002	0,387	no	1825
EURO STOXX 50	MS ING DIRECT NARANJA	MIF	-0,0001	-0,0002	0,180	no	1825
EURO STOXX 50	MORGAN STANLEY LBRTY.	MIF	-0,0001	-0,0002	0,059	no	1825
EURO STOXX 50	UNION INVESTMENT LX	MIF	-0,0001	-0,0002	0,332	no	1825
EURO STOXX 50	ETOILE EURO	MIF	-0,0001	-0,0002	0,657	no	1825
EURO STOXX 50	KBC INDEX	MIF	-0,0001	-0,0002	0,648	no	1825
EURO STOXX 50	ISHARES	ETF	-0,0002	-0,0002	0,992	no	1825
EURO STOXX 50	UBS	ETF	-0,0002	-0,0002	0,576	no	1825
EURO STOXX 50	Lyxor	ETF	-0,0002	-0,0002	0,974	no	1825
EURO STOXX 50	SPDR	ETF	-0,0001	-0,0002	0,712	no	1825
EURO STOXX 50	DBX UCITS ETF	ETF	-0,0003	-0,0002	0,001	no	1825
FTSE 100	HALIFAX	MIF	0,0001	0,0000	0,485	no	1762
FTSE 100	HSBC	MIF	0,0000	0,0000	0,531	no	1762
FTSE 100	ISHARES	ETF	-0,0001	0,0000	0,997	no	1762
FTSE 100	ISHARES	ETF	0,0000	0,0000	0,333	no	1762
FTSE 100	UBS	ETF	-0,0003	0,0000	0,483	no	1762
IBEX 35	BBVA ACCION	ETF	-0,0003	-0,0003	0,192	no	1597
IBEX 35	MORGAN STANLEY LIBERTY	MIF	-0,0002	-0,0003	0,309	no	1597
MSCI EUROPE	VANGD	MIF	-0,0001	-0,0001	0,715	no	1689
MSCI EUROPE	AMUNDI	MIF	0,0000	-0,0001	0,837	no	1689
MSCI EUROPE	SWISSCANTO CH	MIF	-0,0001	-0,0001	0,928	no	1689
MSCI EUROPE	LYXOR	ETF	-0,0001	-0,0001	0,130	no	1689
MSCI EUROPE	SPDR	ETF	0,0000	-0,0001	0,624	no	1689
SMI	CREDIT SUISSE CSA	MIF	0,0000	-0,0001	0,337	no	1689
SMI	ISHARES	ETF	0,0001	-0,0001	0,001	no	1689
SMI	UBS	ETF	-0,0001	-0,0001	0,431	no	1689
SMI	Credit Suisse	ETF	0,0000	-0,0001	0,371	no	1689
TECDAX	LUX EURO	MIF	0,0001	0,0002	0,440	no	1825
TECDAX	ISHARES	ETF	0,0002	0,0002	0,827	no	1825

Appendix 3: Two-sample t-test for ETF and MIF

t-Test: Two-Sample Assuming Unequal Variances for ETF and MIF over or underperformance between each other

Index	CAC 40	CAC 40	Dax	Dax	Stoxx	Stoxx	Stoxx	Stoxx	FTSE 100	FTSE 100	IBEX	MSCI EU	MSCI EU	SMI
Name	Lyxor and Mam France	Amundi and Strategie	Ishares and Oppenheim	Lyxor and Pioneer	Ishares and Iversafei	Lyxor and Vital Gestion	SPDR and Gesbanki	Dbx and DBV	Ishares DE and Halifax	Ishares and HSBC	BBVA and MS	Lyxor and Vanguard	SPDR and Amundi	Ishares and CS
Mean ETF	-0,038	-0,014	0,043	0,049	-0,044	-0,044	-0,023	-0,071	-0,030	-0,006	-0,087	-0,029	0,006	0,021
Mean MIF	-0,019	-0,037	0,041	0,047	-0,017	-0,020	-0,015	-0,049	0,022	-0,004	-0,060	-0,033	0,005	0,008
Observati	1825	1825	1680	1680	1825	1825	1825	1562	1762	1762	1597	1689	1689	1825
df	3557	3648	3356	3355	3637	3624	3587	3122	3433	3517	3184	3211	3376	3614
t Stat	-0,13	0,17	0,02	0,01	0,21	0,19	-0,05	-0,15	-0,37	-0,01	-0,18	0,03	0,00	0,13
P one-tail	0,45	0,43	0,49	0,50	0,42	0,42	0,48	0,44	0,36	0,49	0,43	0,49	0,50	0,45
t Crit. one	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65	1,65
P two-tail	0,90	0,86	0,99	0,99	0,84	0,85	0,96	0,88	0,71	0,99	0,86	0,98	1,00	0,90
t Crit. two	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96	1,96
Significan	no	no	no	no	no	no	no	no	no	no	no	no	no	no

Appendix 4: Results of logistic regression (15 pairs)

1) Significant at 10% values are in bold.

Index	IBEX	CAC 40	STOXX	FTSE
Test	BBVA and MS	Lyxor and MAM	Lyxor and Gesbanki	UBS and HSBC
Hos. and Lem. Test	0,39	0,60	0,08	0,48
Correct prediction, %	70,83	61,11	54,17	62,50
Coefficient for single const	-0,88	-0,45	-0,16	0,51
Sig.	0,00	0,06	0,48	0,04
Unconditional OR for ETFs	0,41	0,64	0,84	1,67
Nagelkerke R Square	0,27	0,14	0,07	0,06
Coefficient (Return)	-20,27	13,04	-7	-10,96
Sig.	0,00	0,01	0,15	0,08
OR	0,00	5,20	0,93	0,00
95% CI lower	0,00	20,33	0,74	0,00
95% CI upper	0,00	57,00	1,02	4,50
Coefficient (Stdev)	-84,50	-52	-69,41	-44

Sig.	0,06	0,43	0,08	0,26
OR	0,00	0,00	0,00	0
95% CI lower	0,00	0,00	0,00	0
95% CI upper	8,31	7,23	14,00	0
Coefficient (Constant)	0,064	-0,44	0,41	1,09
Sig.	0,92	0,08	0,68	0,06
OR	1,06	0,64	1,51	2,97

2) All results from logistic regression

	Index	CAC40	IBEX	STOX X	FTSE	DAX	STOXX	CAC 40
	Name	Amundi and Strategie	BBVA and MS	DBX and Union	Ishares and Halifax	Ishares and Oppenheim	Ishares and Inversaf	Lyxor and MAM
Constant Single	B	-0,38	-0,88	-0,36	1,42	1,34	-0,22	-0,45
	Sig.	0,10	0,00	0,10	0,00	0,00	0,35	0,06
	Exp(B)	0,67	0,41	0,67	4,14	3,80	0,80	0,64
Goodness of Fit	Percentage Correct	59,72	70,83	59,72	80,56	79,17	55,56	61,11
	-2 Log likelihood	93,89	71,98	96,08	70,48	72,81	98,53	88,52
	Cox & Snell R Square	0,04	0,19	0,01	0,01	0,01	0,01	0,10
	Nagelkerke R Square	0,06	0,27	0,02	0,01	0,02	0,01	0,14
	Hosmer and Lemeshow Test	0,79	0,39	0,95	0,07	0,64	0,50	0,60
Return	B	7,54	-20,27	1,42	-2,73	-0,35	1,19	13,04
	S.E.	5,18	6,26	4,62	7,28	5,51	4,52	5,11

Kommentar [AB367]: Just try to amend your format a little. These columns are quite hard to read.

Kommentar [AB368]: Just try to amend your format a little. These columns are quite hard to read.

Kommentar [AB369]: Capitalise?

	<i>Wald</i>	2,12	10,49	0,09	0,14	0,00	0,07	6,50
	<i>df</i>	1,00	1,00	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,15	0,00	0,76	0,71	0,95	0,79	0,01
	<i>Exp(B)</i>	1,80	0,00	4,15	0,07	0,70	3,29	5,20
	<i>95% C.I. for EXP(B)</i>							
	<i>Upper</i>	47,96	0,00	3,58	10,14	3,44	2,32	103,34
Stdev	<i>B</i>	-4,97	-84,50	26,02	-30,55	39,59	-13,50	
	<i>S.E.</i>	39,13	44,19	37,37	44,49	51,21	35,40	
	<i>Wald</i>	0,02	3,66	0,48	0,47	0,60	0,15	
	<i>df</i>	1,00	1,00	1,00	1,00	1,00	1,00	
	<i>Sig.</i>	0,90	0,06	0,49	0,49	0,44	0,70	0,44
	<i>Exp(B)</i>	0,01	0,00	0,00	0,00	15,60	0,00	
	<i>95% C.I. for EXP(B)</i>							
	<i>Upper</i>	139,20	7,23	32,20	39,50	25,00	0,00	
Constant	<i>B</i>	-0,30	0,06	0,00	1,82	0,80	-0,01	-0,44
	<i>S.E.</i>	0,62	0,68	0,59	0,67	0,74	0,57	0,26
	<i>Wald</i>	0,23	0,01	0,00	7,48	1,15	0,00	2,99
	<i>df</i>	1,00	1,00	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,63	0,92	1,00	0,01	0,28	0,98	0,08
	<i>Exp(B)</i>	0,74	1,07	1,00	6,17	2,22	0,99	0,64

Kommentar [AB370]: Is this the official abbreviation?

Index	DAX	STOXX	MSCI EU	STOXX	STOXX	
<i>Name</i>	<i>Lyxor and Pioneer</i>	<i>Lyxor and Gesbanki</i>	<i>Lyxor and Vangd</i>	<i>SPDR and DBV</i>	<i>SPDR and Swisscanto</i>	
Constant	<i>B</i>	0,63	-0,17	1,95	-2,08	0,63

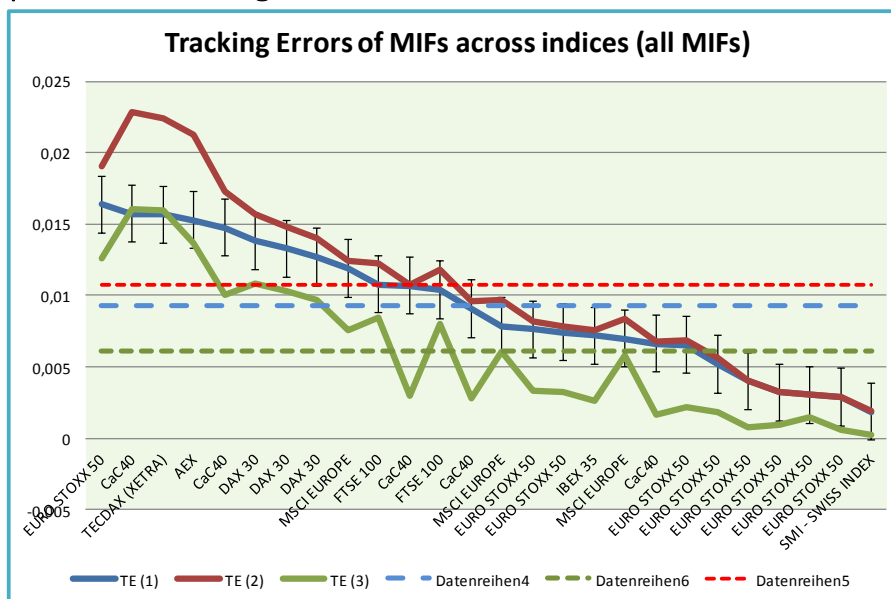
<i>Single</i>	<i>Sig.</i>	0,01	0,48	0,00	0,00	0,01
	<i>Exp(B)</i>	1,88	0,85	7,00	0,13	1,88
	<i>Percentage Correct</i>	65,28	54,17	87,50	88,89	65,28
<i>Goodness of Fit</i>	<i>-2 Log likelihood</i>	92,42	95,38	50,52	48,66	90,68
	<i>Cox & Snell R Square</i>	0,01	0,05	0,05	0,02	0,03
	<i>Nagelkerke R Square</i>	0,01	0,07	0,10	0,04	0,04
	<i>Hosmer and Lemeshow Test</i>	0,66	0,08	0,01	0,83	0,51
	<i>B</i>	-2,52	-6,98	11,41	-3,66	5,36
<i>Return</i>	<i>S.E.</i>	4,49	4,90	7,46	7,93	3,59
	<i>Wald</i>	0,31	2,03	2,34	0,21	2,23
	<i>df</i>	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,58	0,15	0,13	0,64	0,14
	<i>Exp(B)</i>	0,08	0,00	90,24	0,03	212,72
	<i>95% C.I. for EXP(B)</i>	0,00	0,00	0,04	0,00	0,19
	<i>Upper</i>	-4,37	-4,02	18,15	-3,85	47,17
	<i>B</i>	7,35	-69,41	113,24	-86,77	n/a
<i>Stdev</i>	<i>S.E.</i>	37,79	39,64	74,60	78,76	n/a
	<i>Wald</i>	0,04	3,07	2,30	1,21	n/a
	<i>df</i>	1,00	1,00	1,00	1,00	n/a
	<i>Sig.</i>	0,85	0,08	0,13	0,27	0,87
	<i>Exp(B)</i>	15,48	0,00	15,10	0,00	n/a
	<i>95% C.I. for EXP(B)</i>	0,00	0,00	0,00	0,00	n/a
	<i>Upper</i>	22,70	14,00	21,30	0,00	n/a

<i>Constant</i>	<i>B</i>	0,54	0,82	0,41	-0,90	0,67
	<i>S.E.</i>	0,59	0,61	1,03	1,06	0,25
	<i>Wald</i>	0,82	1,80	0,16	0,73	6,96
	<i>df</i>	1,00	1,00	1,00	1,00	1,00
	<i>Sig.</i>	0,36	0,18	0,69	0,39	0,01
	<i>Exp(B)</i>	1,71	2,28	1,51	0,41	1,96

	Index	SMI	FTSE	STOXX
	<i>Name</i>	<i>UBS and CS</i>	<i>UBS and HSBC</i>	<i>UBS and Vital Gestion</i>
<i>Constant Single</i>	<i>B</i>	-0,51	0,51	-0,82
	<i>Sig.</i>	0,04	0,04	0,00
	<i>Exp(B)</i>	0,60	1,67	0,44
<i>Goodness of Fit</i>	<i>Percentage Correct</i>	62,50	62,50	69,44
	<i>-2 Log likelihood</i>	n/a	92,05	87,78
	<i>Cox & Snell R Square</i>	n/a	0,04	0,01
	<i>Nagelkerke R Square</i>	n/a	0,06	0,02
	<i>Hosmer and Lemeshow Test</i>	n/a	0,48	0,75
<i>Return</i>	<i>B</i>	n/a	-10,96	-1,26
	<i>S.E.</i>	n/a	6,36	4,81
	<i>Wald</i>	n/a	2,97	0,07
	<i>df</i>	n/a	1,00	1,00
	<i>Sig.</i>	0,76	0,08	0,79
	<i>Exp(B)</i>	n/a	0,00	0,28
	<i>95% C.I.for</i>	n/a	0,00	0,00

	<i>EXP(B)</i>			
	<i>Upper</i>	63,06	-4,50	-3,95
<i>Stdev</i>	<i>B</i>	n/a	-44,36	23,94
	<i>S.E.</i>	n/a	39,90	36,36
	<i>Wald</i>	n/a	1,24	0,43
	<i>df</i>	n/a	1,00	1,00
	<i>Sig.</i>	0,98	0,27	0,51
	<i>Exp(B)</i>	n/a	0,00	24,00
	<i>95% C.I. for EXP(B)</i>	n/a	0,00	0,00
	<i>Upper</i>	n/a	0,00	0,00
	<i>Constant</i>	<i>B</i>	-0,51	1,09
<i>S.E.</i>		0,24	0,57	0,61
<i>Wald</i>		4,40	3,61	3,90
<i>df</i>		1,00	1,00	1,00
<i>Sig.</i>		0,04	0,06	0,05
<i>Exp(B)</i>		0,60	2,97	0,30

Appendix 5: Tracking Errors of MIF



Appendix 6: Tracing Error (1), (2) and (3) for all Funds

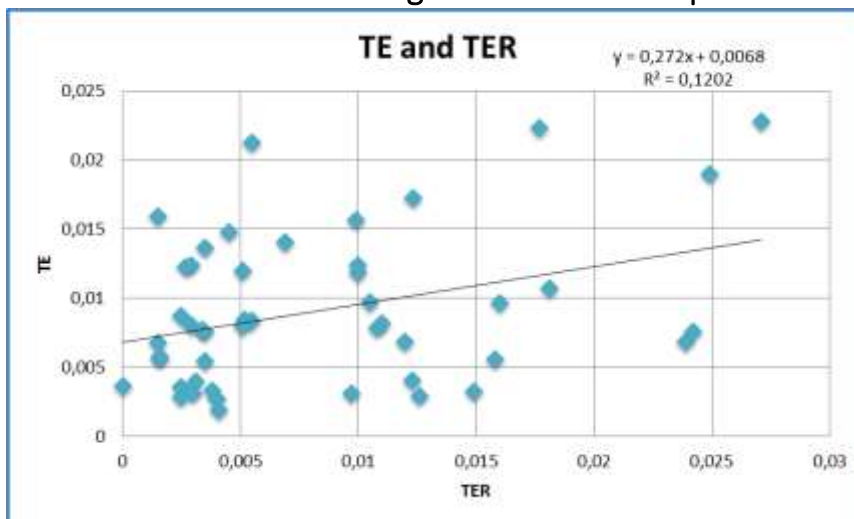
Name	Index	Type	TE (1) daily	TE (2) daily	TE (3) daily	TE (1) annual	TE (2) annual	Observations
SPDR	AEX	ETF	0,004	0,004	0,002	0,0691	0,069	1825
ISHARES	AEX	ETF	0,003	0,003	0,002	0,0538	0,054	1825
BNP PARIBAS	AEX	MIF	0,015	0,021	0,014	0,2663	0,371	1825
LYXOR	CaC40	ETF	0,003	0,003	0,001	0,0495	0,050	1825
AMUNDI	CaC40	ETF	0,004	0,004	0,002	0,0615	0,062	1825
ING_DRCT. LYXOR INTERNATIONAL	CaC40	MIF	0,016	0,023	0,016	0,2743	0,398	1825
NATIXIS ASSET MANAGEMENT	CaC40	MIF	0,015	0,017	0,010	0,2574	0,302	1825
MAM MEESCHAERT FCP	CaC40	MIF	0,011	0,011	0,003	0,1866	0,187	1825
STRATEGIE	CaC40	MIF	0,007	0,007	0,002	0,1158	0,119	1825
GESTION VALOR	CaC40	MIF	0,009	0,010	0,003	0,1584	0,168	1825
ISHARES	DAX 30	ETF	0,006	0,006	0,004	0,0927	0,094	1680
LYXOR	DAX 30	ETF	0,007	0,007	0,004	0,1103	0,114	1680
OPPENHEIM KPL.DAX WERTE	DAX 30	MIF	0,013	0,015	0,010	0,2220	0,258	1680
DT.POSTBANK ASTMGMT.DYM.	DAX 30	MIF	0,014	0,016	0,011	0,2310	0,274	1680
PIONEER INVESTMENTS AKTIEN	DAX 30	MIF	0,013	0,014	0,010	0,2125	0,245	1680
ISHARES	EURO STOXX 50	ETF	0,006	0,006	0,004	0,1002	0,101	1825
UBS	EURO STOXX 50	ETF	0,015	0,016	0,009	0,2558	0,278	1825
LYXOR	EURO STOXX 50	ETF	0,008	0,009	0,005	0,1459	0,152	1825
SPDR	EURO STOXX 50	ETF	0,012	0,012	0,009	0,2105	0,216	1825
DB Xtracker	EURO STOXX 50	ETF	0,004	0,004	0,001	0,0582	0,058	1562
INVERSAFEI BOLSA EURO	EURO STOXX 50	MIF	0,007	0,008	0,003	0,1296	0,137	1825
VITALGESTION	EURO STOXX 50	MIF	0,005	0,006	0,002	0,0902	0,098	1825
GESBANKINTER	EURO STOXX 50	MIF	0,003	0,003	0,001	0,0530	0,054	1825
DBV WINTERH.FD.MAN.CO.	EURO STOXX 50	MIF	0,003	0,003	0,001	0,0505	0,051	1825
ING DIRECT	EURO STOXX 50	MIF	0,008	0,008	0,003	0,1329	0,142	1825
MORGAN STANLEY LBRTY.	EURO STOXX 50	MIF	0,007	0,007	0,002	0,1138	0,119	1825
UNION INVESTMENT LX	EURO STOXX 50	MIF	0,003	0,003	0,001	0,0560	0,057	1825
ETOILE GESTION OPPORTUNITES	EURO STOXX 50	MIF	0,016	0,019	0,013	0,2856	0,332	1825
KBC INDEX	EURO STOXX 50	MIF	0,004	0,004	0,001	0,0696	0,070	1825
UBS	FTSE 100	ETF	0,013	0,014	0,010	0,2291	0,234	1762
ISHARES DE	FTSE 100	ETF	0,011	0,012	0,007	0,1968	0,205	1762
ISHARES	FTSE 100	ETF	0,003	0,003	0,001	0,0461	0,046	1762
HSBC	FTSE 100	MIF	0,011	0,012	0,008	0,1845	0,214	1762
HALIFAX UK	FTSE 100	MIF	0,010	0,012	0,008	0,1782	0,207	1762
BBVA	IBEX 35	ETF	0,008	0,008	0,003	0,1280	0,131	1597
MORGAN STANLEY LIBERTY	IBEX 35	MIF	0,007	0,008	0,003	0,1171	0,132	1597
LYXOR	MSCI EUROPE	ETF	0,006	0,008	0,005	0,1048	0,127	1689
SPDR	MSCI EUROPE	ETF	0,006	0,008	0,006	0,1008	0,129	1689
VANGD. ADMIRAL SHS.	MSCI EUROPE	MIF	0,012	0,012	0,008	0,1995	0,216	1689
AMUNDI	MSCI EUROPE	MIF	0,008	0,010	0,006	0,1312	0,169	1689
SWISSCANTO CH	MSCI EUROPE	MIF	0,007	0,008	0,006	0,1168	0,146	1689
ISHARES	SMI - SWISS INDEX	ETF	0,007	0,008	0,005	0,1294	0,147	1825
UBS	SMI - SWISS INDEX	ETF	0,005	0,005	0,003	0,0935	0,095	1825
Credit Suisse	SMI - SWISS INDEX	ETF	0,003	0,003	0,002	0,0567	0,057	1825
CREDIT SUISSE CSA	SMI - SWISS INDEX	MIF	0,002	0,002	0,000	0,0325	0,033	1825
ISHARES	TECDAX (XETRA)	ETF	0,008	0,008	0,005	0,1388	0,139	1825
LUX EURO STOCK	TECDAX (XETRA)	MIF	0,016	0,022	0,016	0,2733	0,390	1825
Average ETF			0,007	0,007	0,004	0,116	0,122	
Average MIF			0,009	0,011	0,006	0,159	0,188	

Appendix 7: Total Expense Ratio t-test

Total Expense Ratio t-Test: Two-Sample Assuming Unequal Variances

	MIF	ETF
Mean	0,01058	0,0029
Variance	1,9E-05	2E-06
Observations	22	23
Hypothesized Mean Difference	0	
df	25	
t Stat	7,86414	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,70814	
P(T<=t) two-tail	0,0000	
t Critical two-tail	2,05954	

Appendix 8: Correlation Tracking Error and Total Expense Ratio



Addendum F

List of major problems

List of major problems

Level of content editing

- No large-scale problems found as far as I can tell as a non-expert
- On a smaller scale here and there incompleteness of information

Level of structural editing

- No large-scale structural problems
- Smaller problem regarding the heading system (actually overlaps with copyediting since it concerns capitalisation): alternating use of capital and lower-case spellings of main words in headings as well as in captions to figures, tables and equations

Level of copy editing

- Punctuation: in some cases wrong and in certain aspects inconsistent
- Syntactical weaknesses
- Grammar: articles frequently missing
- Formatting of references to tables, figures and equations: inconsistent
- Bibliography: punctuation inconsistencies, certain sources are not referenced correctly (i.e. edited book is referenced as book by one author)
- Plagiarism: few instances of changing style

Level of stylistic editing

- Consistent use of the first person, little passive (perhaps not a problem since it is done consistently and the subject is not concerned with language studies → ask supervisor!)
- Use of tenses: primarily present tense, no past tense used → perhaps not ideal
- Colloquial formulations, contractions
- Idiom: sometimes unidiomatic

Addendum G

Quotation

Quotation: Editing of a Master's thesis

Dear Students,

Thank you very much for your enquiry. After reading through your thesis draft, I can offer you the following editing service on four textual levels:

Content editing

The editing service will attend to the content of the thesis and to instances of general substantial error or incompleteness, should any such instance become apparent during the editing process. It must be noted, however, that the editor is a non-expert in the subject matter and that the responsibility for factual correctness and completeness remains with the student and supervisor. Should any substantial problems occur, these shall be noted to the student but not corrected by the editor. The purpose of thesis writing and the prerequisite of originality of postgraduate research writing imply that direct intervention by the editor in terms of addition, removal or alteration of the content of a thesis would be unethical. Any editorial intervention on the level of content shall therefore be restricted to queries to the student in the form of commentary in the margin of the manuscript, comments in the working document, or in the form of email / phone calls.

Structural editing

The editor will further consider the overall structure of the thesis, its heading system and the overall order of sections as well as smaller structural aspects within the different sections of the manuscript such as paragraphing or references to graphics and tables. Shortcomings of the thesis with regard to the structural level shall not be corrected by the editor but will be queried and left to be amended by the student. Examples may be given to the student if deemed necessary or helpful. Extensive direct intervention by the editor on the structural level is seen as unethical in terms of originality of postgraduate research writing.

Copyediting

After attending to the macro-level of the thesis draft on the levels of content and structure, the editing service shall proceed to micro-level intervention on the level of copyediting. On this level, grammatical problems shall be attended to such as syntactical weaknesses, punctuation errors or spelling mistakes. Apart from that, in-text references will be checked for their appearance in the list of references, and the list of references shall be examined for its compliance with the style guide of the department. Furthermore, the student shall be warned of possible instances of plagiarism, should either notable discrepancies in style or similar

possible indicators of plagiarism be noted by the editor. On the level of copyediting, changes may be made by the editor in the text by means of the tracking function of MS Word. Should a specific error occur in a repetitive or constant manner throughout the entire document, the problem may be queried with the student rather than corrected by the editor.

Stylistic editing

In a stylistic editing phase, the manuscript shall be given a stylistic finishing touch. The language of the text shall be tailored to the register that may be expected by an academic community and by the requirements of thesis writing, i.e. a certain degree of formality. Apart from that any ambiguities shall be clarified in order to facilitate smooth and fluent reading. Instances of unidiomatic usage shall be rendered idiomatic to the best of the editor's abilities. It should be noted, however, that the editor is not a native English speaker and might thus not detect every instance of unidiomatic usage; however, a certain level of experience in editing English texts and the editor's professional qualification as a translator for English will help to give the thesis draft an adequate linguistic polish. The editorial intervention on the stylistic level shall combine in-text changes and comments with suggestions to the student.

Mode of Intervention

A first reading of the thesis draft has left the impression upon the editor that the manuscript is well written and of rather high quality, particularly on the macro level (content and structure). The larger part of the editing service will thus proceed on the levels of copyediting and stylistic editing, not least since the authors are not English native speakers. The focus of the editing service shall lie on the students' learning process, and the purpose of thesis writing as well as the requirements of originality shall be respected by the editor. The mode of intervention will thus be a combination of direct intervention in the form of in-text corrections on the micro-level of the manuscript and indirect intervention through queries to the student whenever direct intervention would be unethical in terms of originality.

The editing service will not include:

- Major rewriting of deficient parts
- Addition, removal or reordering of content
- Checking of the content against the respective literature
- Re-calculation of calculations and checking mathematical elements for correctness
- Checking of citations and content for plagiarism with a detector software
- Checking of figures and tables for correctness and, if not designed by the students, checking tables and figures against a scholarly database
- Checking of references against a scholarly database
- Large-scale structural and substantial amendment

Please note:

- It is highly recommendable to have any editorial intervention approved by the supervisor. Therefore, a written agreement will be sent to the students, which provides space for the supervisor's signature as a sign of approval. It is the students' responsibility to obtain the supervisor's signature. Should no such signature have been obtained, the editor cannot be held responsible for any consequences.
- It is also recommendable to acknowledge the service of an editor in the thesis.
- The editor cannot be held responsible for success or failure of the thesis.
- The editor does not have professional status in editing.

Should you accept this quotation, I am going to send you a written agreement to confirm our cooperation. I have not found any missing parts in your draft, but should you wish to add or change anything, you may do so and provide the final draft for editing together with the signed agreement.

Thank you!

Addendum H

Written agreement

Written Agreement for the Editing of a Master's Thesis

Title of the thesis:

Authors: Student A; Student B

Editor: Anja Baumeister

The final draft version of the above thesis shall be edited according to a four-level strategy based on the editing theory of Brian Mossop¹. The four levels on which the thesis will be edited are: content, structure, copy and style.

The editing service shall include the following:

Content editing

The editing service will attend to the content of the thesis and to instances of general substantial error or incompleteness, should any such instance become apparent during the editing process. It must be noted, however, that the editor is a non-expert in the subject matter and that the responsibility for factual correctness and completeness remains with the student and supervisor. Should any substantial problems occur, these shall be noted to the student but not corrected by the editor. The purpose of thesis writing and the prerequisite of originality of postgraduate research writing imply that direct intervention by the editor in terms of addition, removal or alteration of the content of a thesis would be unethical. Any editorial intervention on the level of content shall therefore be restricted to queries to the student in the form of commentary in the margin of the manuscript, comments in the working document, or in the form of email / phone calls.

Structural editing

The editor will further consider the overall structure of the thesis, its heading system and the overall order of sections as well as smaller structural aspects within the different sections of the manuscript such as paragraphing or references to graphics and tables. Shortcomings of the thesis with regard to the structural level shall not be corrected by the editor but will be queried and left to be amended by the student. Examples may be given to the student if deemed necessary or helpful. Extensive direct intervention by the editor on the structural level is seen as unethical in terms of originality of postgraduate research writing.

¹ Presented in *Revising and Editing for Translators* (Mossop 2007).

Copyediting

After attending to the macro-level of the thesis draft on the levels of content and structure, the editing service shall proceed to micro-level intervention on the level of copyediting. On this level, grammatical problems shall be attended to such as syntactical weaknesses, punctuation errors or spelling mistakes. Apart from that, in-text references will be checked for their appearance in the list of references, and the list of references shall be examined for its compliance with the style guide of the department. Furthermore, the student shall be warned of possible instances of plagiarism, should either notable discrepancies in style or similar possible indicators of plagiarism be noted by the editor. On the level of copyediting, changes may be made by the editor in the text by means of the tracking function of MS Word. Should a specific error occur in a repetitive or constant manner throughout the entire document, the problem may be queried with the student rather than corrected by the editor.

Stylistic editing

In a stylistic editing phase, the manuscript shall be given a stylistic finishing touch. The language of the text shall be tailored to the register that may be expected by an academic community and by the requirements of thesis writing, i.e. a certain degree of formality. Apart from that any ambiguities shall be clarified in order to facilitate smooth and fluent reading. Instances of unidiomatic usage shall be rendered idiomatic to the best of the editor's abilities. It should be noted, however, that the editor is not a native English speaker and might thus not detect every instance of unidiomatic usage; however, a certain level of experience in editing English texts and the editor's professional qualification as a translator for English will help to give the thesis draft an adequate linguistic polish. The editorial intervention on the stylistic level shall combine in-text changes and comments with suggestions to the student.

Mode of Intervention

A first reading of the thesis draft by the editor has left the impression upon the editor that the manuscript is well written and of rather high quality, particularly on the macro level (content and structure). The larger part of the editing service will thus presumably proceed on the levels of copyediting and stylistic editing, not least since the authors are not English native speakers.

The focus of the editing service shall lie on the students' learning process, and the purpose of thesis writing as well as the requirements of originality will determine the editor's code of conduct. The mode of intervention will thus be a combination of direct intervention in the form of in-text corrections on the micro-level of the manuscript and indirect intervention through queries to the student whenever direct intervention would be unethical in terms of originality.

The editing service will not include:

- Major rewriting of deficient parts
- Addition, removal or reordering of content
- Checking of the content against the respective literature
- Re-calculation of calculations and checking mathematical elements for correctness
- Checking of citations and content for plagiarism with a detector software
- Checking of figures and tables for correctness and, if not designed by the students, checking tables and figures against a scholarly database
- Checking of references against a scholarly database
- Large-scale structural and substantial amendment

Please note:

- It is highly recommendable to have any editorial intervention approved by the supervisor. Therefore, a written agreement will be sent to the students, which provides space for the supervisor's signature as a sign of approval. It is the students' responsibility to obtain the supervisor's signature. Should no such signature have been obtained, the editor cannot be held responsible for any consequences.
- It is also recommendable to acknowledge the service of an editor in the thesis.
- The editor cannot be held responsible for success or failure of the thesis.
- The editor does not have professional status in editing.

This thesis will be edited gratuitously as part of an MPhil thesis research project conducted by Anja Baumeister at Stellenbosch University, in which a model for the editing of postgraduate research writing has been developed. The draft of the thesis presents a text sample for the testing of an editing model designed in the course of my research. The thesis draft and the edited version thereof are planned to be included into my own master's thesis. Permission for this shall be obtained in a separate document.

Amendments to this agreement by any party:

Anja Baumeister

Name of editor

Date and Signature

Student A

Name of student

Date and Signature

Student B

Name of student

Date and Signature

Name of Supervisor

Date and Signature

Addendum I

Memory sheet

Memory Sheet

- Spelling of United States: U.S.
- Usage: punctuation of decimal numbers “European” but US spelling of words
- Punctuation in headings
- Capitalisation of headings
- Capitalisation of subject-specific terms inconsistent
- Tenses
- Captions and sources of tables and figures inconsistent
- Use of italics too extensive and inconsistent

Addendum J

Printout version of the editing model

Checklist for the procedure of a thesis editing assignment

- Focus on the learning process of the student throughout your entire assignment

1. Assessing the assignment

- Obtain and read draft
- Set up list of major problems (basis for written agreement and working document)
- Assess the dimension of work on all levels of the text
- Decide whether to accept the commission
- Select appropriate medium/media of communication

2. Preparing the assignment

- Send a quotation to student
- Inform student about any missing parts
- Draft written agreement (EAC 2012), obtain signatures of student and supervisor
- Set up working document (Van Aswegen 2007: 1147)
- If needed compile a memory sheet for yourself to keep track of aspects to remember

3. Editing the text in two subsequent phases

Phase 1: correcting of errors

- Content editing
- Structural editing
- Copy editing

Phase 2: improving of the language

- Stylistic editing

4. Finalise and dispatch

- Proofread edited version
- Store a copy
- Send edited text and invoice to student

Four levels of editing (Mossop 2007)

This checklist may help you to provide a comprehensive and complete editing service on four levels of the text.

1. Content editing

Factual errors:

- Conceptual errors
- Obscure passages

Logical errors:

- Mathematical errors

- Do not specify any changes
- Communicate problems to the student
- Use comments in the margin or the working document (particularly for more substantial problems) to communicate errors to the student

2. Structural editing

Problems with the heading system:

- Misconceived headings
- Confusing heading system
- Lack of subheadings
- Headings that do not match the table of contents

Problems typical for prose texts:

- Missing Markers
- Unfulfilled announcements
- Empty backward references
- False backward or forward references
- Unexplained acronyms
- References to graphics and tables
- Poor paragraphing

- Do not specify any changes
- Communicate problems to the student
- Use comments in the margin or the working document (particularly for more substantial problems) to communicate errors to the student

3. Copy editing

- House style, i.e. conformity with the university's preferred style manual
- Spelling and typographical errors
- Syntax
- Punctuation
- Usage
- Consistency
- Referencing
- Plagiarism

- Correct minor errors (always track changes)
- For recurrent errors, use comments in the margin or the working document to explain the problem to the student and encourage the student to correct all instances of recurrent errors

4. Stylistic editing

Tailoring the language to the reader's

- motivation to read the text
- knowledgeability of the subject
- education level
- time and place of reading
- relationship with the writer
- use of the text

Smoothing

- Relationships between all aspects in a sentence clear?
- Positions and relationship of subject and verb clear?
- Sentences linked in terms of information flow and focus?
- Connector words in the right position and not misleading?
- Parallel ideas expressed through parallel forms?
- Antecedents of pronouns clear?
- Interpretation of noun sequences and other ambiguous structures clear from context?
- Idiom

- Suggest alternatives in the margin rather than making changes in the text
- Leave the decision to the student whether to accept or reject your suggestions
- Use the working document to comment on more substantial stylistic problems

The process of thesis editing: A visual overview

