THE RELATIONSHIP BETWEEN DIRECTORS' REMUNERATION AND FINANCIAL PERFORMANCE: AN INVESTIGATION INTO SOUTH AFRICAN JSE-LISTED INDUSTRIAL FIRMS

By

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DECLARATION

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ABSTRACT

For the past few decades the remuneration of directors has been in the spotlight, especially in view of the corporate scandals that occurred around the turn of the 20th century. Generally, managers need to manage firms in such a way that shareholders' value is maximised. Unfortunately, shareholders of firms and the general public have the perception that directors are over-compensated, and that there is no relationship between the remuneration of directors and the financial performance of the firms to enhance shareholders' value. A lack of transparency, inadequate disclosure by firms and remuneration committees' conflict of interest are reasons cited for these perceptions. Although South Africa is ranked as a global leader in terms of its corporate governance practices, many firms still do not adhere to the King reports' principles.

This research study investigated whether a relationship exists between the remuneration of directors and the financial performance of firms. The firms selected for the study included both listed and delisted firms from the Industrial Sector of the Johannesburg Stock Exchange (JSE) for the time period 2002 until 2010. Ninety-three firms complied with the requirements to be included in the study. All these firms had effective remuneration strategies in place to promote financial performance and growth of the firms. Secondary data were collected for the nine consecutive years of the study period, representing a period prior to substantial changes in accounting and disclosure regulation that influenced the comparability of financial reporting of the firms.

It is important to note that directors' remuneration is not the only motivating factor for firm performance, but one of many. Directors' remuneration and incentives should be optimally utilised to increase performance and growth in the firms, and it should not merely be a case of directors being overcompensated for services rendered.

In order to operationalize directors' remuneration, it was converted and sub-categorised into four variables. These dependent variables for directors' remuneration consisted of basic salary, bonuses (performance), gains on share purchases or share options and what was termed as "other" remuneration. "Other" remuneration included pension, medical, motor, and telephone allowances. To measure the financial performance of the firms, the following market and accounting measures were employed: turnover, earnings per share (EPS), total share return (TSR) and market value added (MVA). Analysing these variables' data by means of selected descriptive

statistical measures and inferential regression analysis, it appeared that the data were significantly skewed, but that financial performance of the firms was a strong determinant of the change in directors' remuneration.

Additional regression analyses were performed to investigate whether a lagged relationship existed between the dependent variable, namely directors' remuneration, and the independent variables, as reflected by the various financial performance measures. Results from these regression analyses strengthened the findings of the study to show that a relationship existed between directors' remuneration and the financial performance of the firms investigated.

Keywords: directors' remuneration, financial performance, incentives, Industrial Sector, shareholders' value.

ABSTRAK

Direkteursvergoeding trek vir die afgelope paar dekades gereeld aandag, veral weens die korporatiewe skandale wat aan die lig gekom het rondom ongeveer die eeuwisseling. Normaalweg stel firmas direkteure aan om aandeelhouerswelvaart te verhoog. Daar bestaan ongelukkig ’n opvatting onder talle aandeelhouers asook die algemene publiek dat direkteure oorbetaal word, en dat daar geen verwantskap bestaan tussen direkteursvergoeding en die finansiële prestasie van firmas om aandeelhouerswelvaart te verhoog nie. Redes wat aangevoer word vir hierdie sienings sluit in die tekort aan deursigtigheid, onvoldoende openbaarmaking deur firmas en vergoedingskomitees se botsende belange. Alhoewel Suid-Afrika geklassifiseer word as ’n wêreldleier op die gebied van korporatiewe bestuur, is daar steeds firmas wat nie voldoen aan die beginsels van die King-verslae nie.

Hierdie navorsingstudie ondersoek die moontlike verwantskap tussen direkteursvergoeding en die finansiële prestasie van firmas. Die geselekteerde firmas vir die studie was genoteerde en voorheen-genoteerde firmas in die nywerheidsektor op die Johannesburgse Aandelebeurs (JSE), vir die periode 2002 tot en met 2010. Drie-en-negentig firmas het voldoen aan die vereistes om ingesluit te word in die steekproef van die studie. Al die geselekteerde firmas het doeltreffende vergoedingstrategieë in plek gehad om finansiële prestasie en groei in die firmas aan te spoor. Sekondêre data is vir die nege agtereenvolgende jare van die studie ingesamel. Veranderinge in regulasies voor en na die studieperiode het dit moeilik gemaak om periodes buite hierdie tydgleuf vir vergelykingsdoeleindes in te sluit.

Dit is belangrik om daarop te let dat direkteursvergoeding nie die enigste faktor is wat ’n firma se finansiële prestasie kan beïnvloed nie, maar slegs een van vele. In die lig hiervan, moet direkteursvergoeding en ander aansporingsmaatstawwe optimaal gebruik word om finansiële prestasie in firmas aan te moedig.

Om ’n duideliker skets rakende direkteursvergoeding te verkry, is vergoeding onderverdeel in vier sub-kategorieë veranderlikes. Die afhanklike veranderlikes van direkteursvergoeding is soos volg geklassifiseer: basiese salaris, bonusse (prestasie), opbrengste uit aandeelaankope en aandeleopsies en ’n laaste kategorie wat as “ander” vergoeding geklassifiseer is. Hierdie “ander” vergoedingskomponent het grootliks bestaan uit pensioen- en mediese bydraes asook motor-, en telefoonvoordele.

Ten einde die onafhanklike veranderlike, naamlik die finansiële prestasie van firmas, te meet, is die volgende mark- en rekeningkundige maatstawwe gebruik: omset, verdienste per aandeel (VPA), markwaarde toevoeging (MWT) en aandeelopbrengs. Met die ontleding van al die veranderlikes het beskrywende statistiek en inferensiële regressietoetse aangedui dat die data ’n merkbare skewe verspreiding het, maar dat finansiële prestasie in die firmas ’n beduidende faktor was wanneer direkteursvergoeding aangepas is.

Bykomende regressietoetse is gedoen om te ondersoek of daar vertragingstydperke was tussen die afhanklike veranderlike, naamlik direkteursvergoeding, en die onafhanklike veranderlike, finansiële prestasie van firmas. Hierdie toetse het die studie se bevindinge bevestig dat daar inderdaad ’n verwantskap bestaan tussen direkteursvergoeding en die finansiële prestasie van firmas.

Sleutelwoorde: direkteursvergoeding, finansiële prestasie, insentiewe, Nywerheid-sektor, aandeelhouerswelvaart.

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If God is your partner, make your plans BIG! ~ D.L. Moody

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CHAPTER 1: INTRODUCTION TO THE STUDY

1.1 INTRODUCTION

The remuneration of firm directors is an issue that has attracted considerable interest from shareholders, business groups and the wider community across the globe. Adapting to sustainable business practices and formulating strategic plans for proper director remuneration are becoming increasingly important in order to enhance performance growth and the profitability of firms. This study investigated the relationship, if any, between directors' remuneration and the financial performance of firms listed on the Industrial Sector of the JSE during the period 2002 to 2010.

The motivation for conducting this study is to assist management, shareholders, stakeholders and the general public to address the conflict between management and shareholders, and to find a balance to maximise both these parties' interests in the firm. These interests can be aligned by ensuring that shareholders have a better knowledge and understanding of the incentives and components of directors' remuneration. Directors' remuneration is often criticised and seen as one of the problem areas in a firm from an external point of view. This criticism is normally due to a lack of knowledge concerning how the remuneration is determined, who determines it and what the total remuneration for directors consists of. This study addresses all these matters by clarifying misconceptions, informing the shareholders and the public on the method according to which directors are remunerated, and investigating the relationship between directors' remuneration and the financial performance of firms.

The primary objective of this study is to investigate the possible relationship between directors' remuneration and the financial performance of the firms considered in the study. In this study, questions regarding possible overcompensation and the potential disconnect between how directors are remunerated and the financial performance of firms are investigated. By ensuring wealth creation for shareholders and by explaining the pay for performance method used to motivate directors, the agency theory problem may be minimised.

This study focuses on applying possible methods to determine the relationship between directors' remuneration and the firm's financial performance. The pre-selection of firms was important and entailed a sample of listed firms (those firms that

remained listed during the study period) and delisted firms (firms that delisted during the study's time period) on the Industrial Sector of the JSE. The Industrial Sector was selected due to various factors explained later in this study. One reason for not considering other sectors, such as the Financial Sector and the Basic Materials Sector, is that there are differences in the financial statements and business operations of firms operating in the different sectors, limiting their comparability.

The remainder of this chapter focuses on the background to the study and the relevant literature, which includes a discussion regarding the maximisation of shareholders' value, the agency theory, an overview regarding a firm's top management structure, determining remuneration for directors and concludes with similar research studies conducted in the field of pay for performance. The chapter then continues to identify the research problem, in order to develop the primary and secondary objectives of the study. The research method explains the process used for the data analysis and highlights the research design for the study. Among others, data capturing-, data processing-, descriptive and inferential statistical-methods all form part of the research method section. The chapter concludes with the orientation of the study and outlining its possible contribution to the field of study.

1.2 BACKGROUND TO THE STUDY

The literature review for this study comprises two main sections. In the first section the focus is placed on corporate performance. The section starts with a discussion of the concepts shareholders' value and shareholders' value principles. The section is followed by an overview of the agency problem that exists between the shareholders and the managers of a firm. For the purpose of this study, the focus is placed on its directors. Overall corporate performance is finally narrowed down to focus specifically on the financial and non-financial performance of firms.

The second section of the literature review examines remuneration in general and provides a breakdown of a firm's typical management structure. This is followed by a detailed discussion of the remuneration of directors, highlighting the typical strategy, structure and components of directors' total remuneration packages.

1.2.1 Corporate performance

(a) Shareholders' value maximisation

Shareholders' value maximisation should be the primary financial objective of all firms (Brigham & Daves, 2010:13). Shareholders' value is the value delivered to shareholders based on directors' ability to let the firm grow by means of operations. In other words, shareholders' value is the result of all strategic and managerial decisions that affect a firm's ability to efficiently increase the amount of free cash flow it generates over a time period (Simms, 2001:34). Therefore, it is important for directors to apply value based management (VBM) which states that management should first and foremost consider the interests of shareholders when making business decisions (Martin, Petty & Wallace, 2009:5) before considering their own situation.

Unfortunately, problems arise when directors are making decisions that negatively affect shareholders and shareholders' value in a firm. Shareholders need to be compensated as they are the owners of the firm and directors only control the firm on behalf of its owners (Sinha, 2006:2). Therefore, it is important that the directors of a firm should take its shareholders into consideration when establishing and implementing strategies and objectives. As mentioned, the shareholders are the investors who provide capital to the firm, while the directors oversee the overall wellbeing of the firm and appoint managers who manage the firm. Directors and managers thus also need to be remunerated and rewarded for how they manage the shareholders' investment. According to Tchouassi and Ouedraogo-Nosseyamba (2011:198), one of the reasons why the maximisation of shareholders' value is so important is that it helps to discipline management. If other metrics should be used to evaluate directors' performance and to determine directors' remuneration, it could only confuse management and make it easier for them to use their positions for their own financial interest above those of the shareholders. For this reason, it is suggested that management should receive appropriate incentives to reward them for maximising shareholders' value.

Increasing shareholders' value immediately creates a chain reaction in which a much broader spectrum of people could benefit from this wealth creation. Keown, Scott, Martin and Petty (1998:2) concurred with this view by stating that the goal of maximising shareholders' value will not only directly influence the shareholders of the

firm, but also provide benefits to society. They argue that scarce resources, such as competent directors, need to be directed to their most productive and useful use for firms to be competitive in creating wealth. Friedman (1962:133) asserted that management has a duty towards shareholders and all other stakeholders to create wealth and activities that will benefit all. Although shareholders' wealth is consequently the main guiding principle for the management of the firm, it is not always perfectly dealt with.

Arguments against shareholders' value maximisation emerge from the premise that it may not benefit everyone. Problems regarding shareholders' value maximisation have been widely voiced, especially after the global financial crisis in 2008 when unemployment, environmental and ethical issues emerged, but were neglected to ensure that shareholders' value increases (Aglietta & Reberioux, 2005:4). It is thus important to identify how maximising shareholders' value is achieved and what it entails before making decisions on whether shareholders' wealth creation is good or bad for all of the firm's stakeholders.

To maximise shareholders' value, directors can consider the following seven value drivers. This is a popular model used in the majority of large firms and focuses on the next factors (Bender & Ward, 2008:17):

- Revenue;
- Operating margin;
- Cash tax rate;
- Incremental capital expenditure;
- Investment in working capital;
- Cost of capital; and
- Competitive advantage period.

These seven value drivers could help to increase profit maximisation in conjunction with the maximisation of shareholders' value. These drivers are generally included in measures and ratios to determine the financial performance of firms and enable stakeholders to compare performance among firms and determine relationships between various variables like directors' remuneration in this study. In order to increase

profits and revenue, directors need to invest in projects that will promote shareholders' value and should not take unnecessary risks to achieve gains for their own interests, placing shareholders' value at risk.

Jesse and Curral (2011:2) identified four factors to assist directors and employees to create value in the firm more effectively, viz.:

- Discouraging to take taking long-term risks for short-term gain;
- Making it impossible to delay issues – problems get dealt with quickly;
- Largely removing the effect of industry cycles from the firm's valuation; and
- Supporting a focus on long-term value creation.

These four factors should ensure that sustainable value creation is possible for the firm. By implementing a proper set of values for the firm, proper incentives for directors in return could be ensured. The relationship between the shareholders and management needs to be respected to enhance shareholders' value maximisation. However, when management and shareholders differ regarding the control and management of the firm, it may lead to the agency theory problem.

(b) The agency theory

More than two centuries ago, Smith (1776:607) stated that although agents (managers) manage firms with other people's money, directors cannot be expected to watch over other people's money the same way anxious people watch over their own money. This results in a situation referred to as the agency problem, and forms the basis of the agency theory, as defined by Jensen and Meckling (1976).

The agency relationship stated by Smith (1776:607) can be defined as the contract between one or more persons (principal/s) that engage with another person (agent) to perform services on their behalf, which involves delegating some authority regarding decision-making to the agent. There is a good chance that the agents (managers), will not always act in the best interest of the principal. This may be due to a lack of incentives for the agents (managers), which easily drives agents to rather focus and promote self-interests above those of the shareholders (Appelbaum, Batt & Clark, 2011:3).

Fama (1980:288) placed the agency theory as the theoretical framework for corporate governance. An example like inside information, which is not known by shareholders, allows the management of a firm to pursue objectives that are in contrast with those of the shareholders. In this regard management focuses on self-interest above that of the shareholders, thus illustrating the agency problem and creating a corrupt agency relationship between the management and shareholders. The first alternative to ensure that the focus is placed on maximising shareholders' value and to solve the agency theory problem is to properly monitor managers managing the firm. This option, however, can become very expensive and might influence the trust relationship between the firm's management and the shareholders (Jensen & Meckling, 1976:305). The relationship between the shareholders and the directors of a firm plays an important role when the future of the firm is at stake.

To ensure sustainable performance over the long term, incentives for directors need to be adequate so that the directors will manage the firm in such a way that shareholders' value maximisation is enhanced. With the second option to solve the agency problem, the shareholders can use incentives to ensure that the directors are motivated to act according to the shareholders' interests. Payments to the directors can also be made to ensure that no unnecessary risks are taken to harm the shareholders. When resources are broadening, the shareholders will also be rewarded for such risk (Jensen & Meckling, 1976:306).

Directors' remuneration is a prominent topic in contemporary corporate governance. The general view that derives from the principal-agent framework is that well-designed remuneration contracts help to reward directors to enhance shareholders' value (Jensen & Murphy, 1990:225). Agents and principals could have divergence when it comes to decision-making, but in general both parties should experience positive outcomes when directors are remunerated sufficiently (Jensen & Meckling, 1976:306).

The agency relationship guidelines are well-known for the pay for performance incentive structure. According to White (1985:192), the remuneration aspect is at the core of the agency relationship. Structural contractual relationships (incentives) between the principal and agent will ensure that decisions made by the agent maximise the welfare of the principal. In this study, the possible relationship between directors'

remuneration and the financial performance of the firm is investigated. If a relationship exists it is suggested that a positive relationship might minimise the agency problem.

1.2.2 Scope of directors

In the previous section, the agency problem was highlighted and it was concluded that a thorough understanding of the agency theory relationship and the role of directors is important. Although a firm's shareholders are usually authorised by regulations to appoint directors, in practice, the board of directors appoints most directors. These appointments are confirmed at the first Annual General Meeting (AGM) after the nominations have been made (The Companies Act, 2008). Continuing downwards within a firm's management hierarchy structure, the directors will then appoint managers. These managers will play an active role in assisting the directors with the daily executive management responsibilities of the firm. It is vital to understand what the role of directors is, as well as what the responsibility, accountability and objective for each director entail.

In Section 71 of the Companies Act (2008) no precise definition of the term 'director' is provided; this Act merely states that a director i□cludes a□y perso□ that is occupyi□g the position of director or a director that rotates in a firm, by whatever title or name the person may be designated. The term 'board of directors' is the collective term used to designate the directors when they act jointly as a group.

A director's objective and role in the firm is to ensure its growth and success, by complying with the relevant legislature and regulations. These legislation and regulations include corporate governance, taxation, employment, and health and safety laws. Apart from these responsibilities, Thornton (2004) listed seven other general duties that directors should also comply with, namely:

- The duty to act within his or her power as a firm director;
- The duty to promote the success of the firm;
- The duty to exercise independent judgment;
- The duty to exercise reasonable care, skill and diligence;
- The duty to avoid conflicts of interest;
- The duty not to accept benefits from third parties; and

- The duty to declare interest in proposed transactions or arrangements with the firm.

These general duties are merely guidelines that assist directors to ensure proper management of a firm. To identify the duties of a director, the different categories of directors need to be identified. There are two main categories of directors, namely executive and non-executive directors. There are no legal distinctions between these directors. The only difference is that non-executive directors are not involved with the day-to-day operational running of the firm (Thornton, 2004).

Executive directors perform strategic and operational business functions such as managing the assets, human resource management, and ensuring firm performance in the daily operations of the firm. Non-executive directors are acquired for their experience and knowledge and are seen as independent advisers to the firm during strategising and decision-making. Generally, non-executive directors work part-time by attending board meetings and working on specific projects (Recruiting directors, 2012).

There is, however, a third category of directors called independent directors. The purpose of appointing an independent director is to make sure that the board includes directors who can effectively exercise their best judgment for the exclusive benefit of the firm; judgme□t that is □ot i□flue□ced or clouded by co□flicts of i□terest (Recruiti□g directors, 2012).

Directors are remunerated for what they are required to do, and receive incentives when they achieve goals set for them or the firm. This study focuses on directors in general, and continues by distinguishing between executive and non-executives with regard to a possible relationship between the remuneration these directors receive and the firms' financial performance (PwC, 2012:9).

1.2.3 Directors' remuneration

Currently, directors' remuneration is in the spotlight more than ever before, especially after the recent global financial crisis. The trust between shareholders and remuneration committees have plummeted to the lowest level ever due to misperceptions regarding the role that remuneration has played in the financial meltdown (Closer scrutiny of executive remuneration, 2009:18). Remuneration is defined in Section 71 of the Companies Act (2008) as encompassing fees, salaries,

bonuses, pensions, compensation for loss of office, details of service contracts and securities issued. It also includes financial assistance for the subscription of shares and any interest deferred, waived or forgiven in respect of a loan or other financial assistance provided by the firm to a director. The overarching principle is that a firm will acquire and retain a top executive director when the remuneration package is higher than the benchmark set in the industry (Mac Naulty, 2005:15).

According to Van der Walt (2003:23), directors' remuneration can be divided into two parts, namely a non-incentive and an incentive part. Non-incentive remuneration is the base or the fixed remuneration that is intended to maintain the director's standard of living, to commensurate the status and position held by the director as well as the size, scope of work, accountability and responsibility towards the firm and other benchmarks. The non-incentive remuneration also includes the duties that the director agrees to in the service agreement and what is expected of him or her. Due to the shortage of highly skilled directors in South Africa, it makes it possible for directors to demand higher fixed incentives than what firms can generally afford to offer.

More recently, firms have tended to shift more towards the incentive earnings part to provide the director the opportunity to earn more and to ensure that the firm has sound financial performance in line with the remuneration (PwC, 2012:6). Incentive-based remuneration is the variable part of remuneration. This part of the total remuneration package is earned by achieving or exceeding goals set for the individual or the firm. Incentive earnings are usually more measurable and are most likely based on profit and growth. Every firm has a unique relationship with its directors' remuneration packages and firms will usually differ from each other in this regard. Terms are normally discussed and negotiated prior to the appointment of a director to the firm.

The total increase in remuneration paid to directors of South African firms is generally smaller than in most Western countries (SAPA, 2010). During the global financial crisis period, PricewaterhouseCoopers (PwC) (2011) pointed out that the lower increase was still not helping to narrow the pay gap between large and small firms' director remuneration as well as the gap between an average employee's remuneration compared to the remuneration of an average director. The high remuneration for directors was nonetheless regarded as highly controversial in the global financial crisis period. South African directors are fortunate not to have experienced pay freezes and

cutbacks like some directors in other countries, especially in the United Kingdom. Tight financial constraints forced firms to stop high remuneration increases. Directors in the Financial Sector were targeted the hardest with remuneration restraints during the global financial crisis period. Research conducted at PwC (2011), however, showed that there was still an increase in the directors' annual remuneration (including basic salary, performance bonus and other benefits) of seven per cent for the Financial Sector in 2010 in South Africa. Although the percentage is much smaller than the twenty-three per cent increase before 2008, the remuneration was still escalating in South Africa. This tendency is seen as a source of concern by shareholders since many firms are still struggling after the global financial crisis.

Similar other important issues regarding directors' remuneration that need attention include the following (PwC, 2011):

- The executive directors' pay gap between firms and sectors;
- The non-executive directors' pay gap between firms and sectors;
- Factors that need to be considered when designing and establishing the remuneration structure (guaranteed and variable remuneration) for directors; and
- Corporate governance principles and regulations that should change executive remuneration structures in the best possible way.

According to Van der Walt (2003:1), the King II report stated that directors should primarily be rewarded on an incentive-based basis. This makes it easier to align the interests of the directors with those of the shareholders. This method of remuneration will ensure a sustainable business model. However, one of the concerns with an incentive-based package is that the directors might only see the firm from a specific shareholder's point of view, and that it could therefore be harmful for the firm and other shareholders over the long-term. This approach may cost firms dearly in future.

The King II report (2002) did not stipulate the precise composition of remuneration. The most common performance remuneration methods, however, are suggested to be share options and bonus schemes in return for sustainable financial performance. Gill Marcus, the prior chairperson of the Financial Services Board and president of the South African Reserve Bank, warned firms to reconsider and investigate their

remuneration packages to prevent directors from only producing gigantic unsustainable short-term profits to ensure big bonuses for themselves (Magnan, St-Onge & Gélinas, 2009:28).

This study's selected timeframe from 2002 until 2010 is based on the King II report. The reason for the selected timeframe is that some firms started to implement the King III report principles from 2010 onwards, and that financial statements may consequently differ in this respect. Therefore, comparable results in terms of the directors' remuneration and firms' financial performance could be obtained in this study by selecting the specific timeframe. According to the King II report, directors are held accountable for steering and controlling the firm directly for its shareholders and indirectly for its stakeholders, therefore it is vital to identify and discuss directors' remuneration. The King II report helps to improve the governance and accountability of firms, especially for top management (directors). The following director remuneration recommendations are highlighted by the King II report (Institute of Directors, 2009):

- Remuneration should be sufficient to attract and retain directors of suitable stature;
- Performance-related elements should be a large part of the total remuneration package;
- A remuneration committee should recommend directors' incentive packages on merit;
- A remuneration committee should consist mainly of independent directors and should make recommendations and advise the board regarding remuneration issues; and
- An annual report, disclosing all the members of the remuneration committee, is needed.

According to Thornton (2004), Section 75 of the King II report stated the declaration of individual directors' remuneration, share options and benefits, along with the remuneration philosophy statement explaining the general remuneration approach of the firm that needs to be supplied in the firm's financial statements.

Now that the background relevant to directors' remuneration has been explained, the focus can shift towards exploring the structure of remuneration, considering the total remuneration package, as well as identifying and discussing each component relevant to the total remuneration package directors receive. This will help to ascertain whether certain components may have stronger influences on the performance of a firm than others. The information will be used to identify direct and indirect relationships between remuneration for directors and the financial performance of the firm.

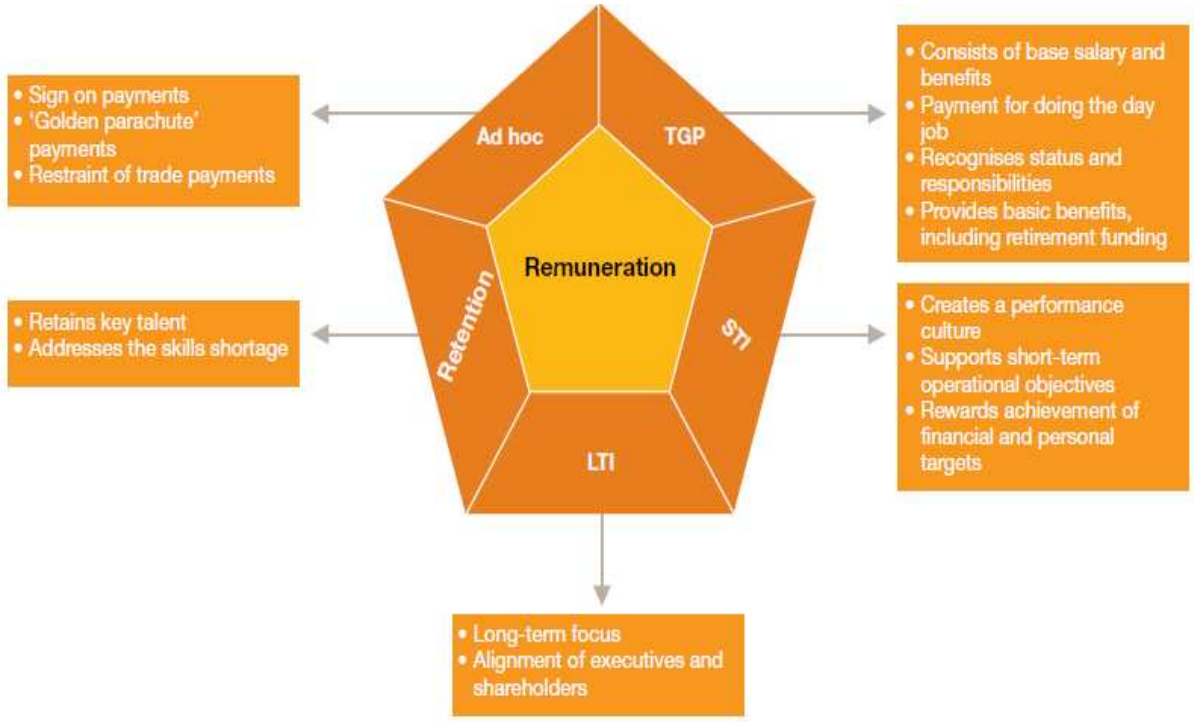
(a) Structure of remuneration

According to a PwC report (2011:8), the total guaranteed remuneration package (TGP) for executive directors refers to all the components, including a basic salary and monthly basic benefits (pension, medical, car allowance and others) that are guaranteed. Beside the TGP, there are short-term incentives (STI) that are paid to executives based on individual or firm performance when achieving goals and targets within 12 months. Long-term incentives (LTI) are referred to as equity-based rewards that are accrued based on director or firm performance for a period exceeding 12 months.

Important to note is that the variable pay component – an increasingly significant factor when it comes to executive directors' remuneration – consists of all the long-and short-term incentives combined. When referring to the total incentives a director receives, the phrase the total earnings is used and not the total remuneration, the latter including only TGP and STI. The total earnings consist of TGP, STI, LTI, ad hoc payments and retention incentives.

PwC (2011:7) released a report that focused on the vast majority of JSE-listed firms' remuneration structures. These remuneration structures comprised a mixture of TGP, STI and LTI incentives. The report's results have suggested that shareholders focused more on remunerating directors with variable pay than fixed pay, to ensure better financial performance. A comprehensive example of how remuneration packages are constructed is illustrated in Figure 1.1.

FIGURE 1.1: The components of remuneration



Source: Adjusted from PwC (2011:8)

Figure 1.1 illustrates five different components of remuneration for directors. TGP, STI and LTI are the more commonly known components and have already been discussed in the previous paragraphs. Ad hoc components are also seen as remuneration. Examples include when an incentive payment is made to a person when joining or leaving a firm. Lastly, retention remuneration is very popular in South Africa due to the shortage of skilled directors. This form of remuneration is paid to retain the best directors for the firm (PWC, 2011:9). When these five types of remuneration are combined, the total remuneration package can be calculated for a director in a specific year. It is crucial to understand that every director's remuneration structure will vary depending on the role and agreement between the director and the firm.

PwC (2011:19) advised South African firms to consider the following three steps when structuring the remuneration package:

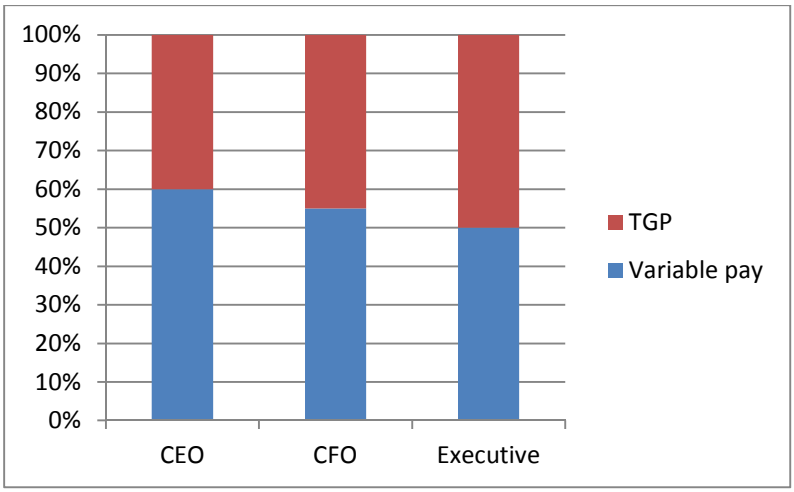
- Corporate management – Better relationships are needed between executives, remuneration committees and the shareholders;
- Incorporating risk in financial aims – Variable remuneration should be allocated according to the risk taken to generate profit for the firm; and

- Determining the remuneration package – All the relevant factors and functions should be taken into consideration when determining the total remuneration package. Long- and short-term, fixed and variable remuneration and "everything in between" should be stated to confirm the final package.

Today, more emphasis is being placed on variable remuneration to promote performance-driven directors in firms (PwC, 2011:9). This emphasis ensures that the remuneration bears some resemblance to the fortunes of a particular firm and its shareholders. Variable remuneration is divided into two main components, namely cash and shares.

By dividing the total remuneration into the two components, TGP and variable pay, it is easy to identify which part is fixed and which part of the remuneration is variable. Figure 1.2 is an example that illustrates how the composition of the total remuneration can differ for the different categories of directors in the firm.

FIGURE 1.2: An example of total guaranteed pay versus variable pay



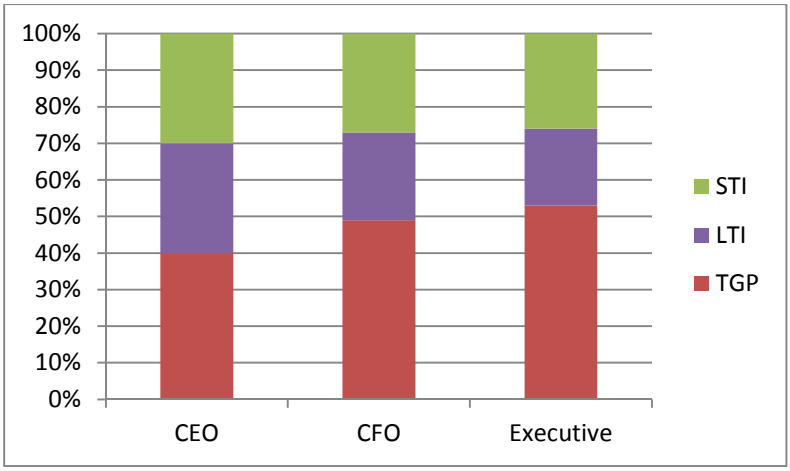
Source: Crafford (personal collection)

The percentage differences between the fixed and variable remuneration are influenced by the role that a director plays in the firm. Consider the difference between the Chief Executive Officer (CEO) and the Chief Financial Officer (CFO) as an example in Figure 1.2. The CEO is there to ensure that the firm grows and performs to be competitive and profitable. For this reason, the CEO will be remunerated based on the firm's financial and non-financial performance. The CFO has a larger fixed percentage

income due to the fact that no unnecessary risk should be taken financially by the CFO to increase his or her own income.

Factors as mentioned above influence the compilation of directors' remuneration. Short- and long-term incentives can have a significant influence on the financial performance of the firm. The following analysis is therefore of great importance when considering the sustainability and financial performance of the firm in relation to the remuneration of directors. The researcher will be able to divide the total remuneration into sub-components to illustrate which individual sub-components of a director's remuneration might have a significant relationship to the financial performance of a firm, and if so, the scope and strength of these relationships. These sub-components are demonstrated in Figure 1.3.

FIGURE 1.3: Sub-components in directors' remuneration package for various directors



Source: Crafford (personal collection)

Figure 1.3 provides an example of how the composition of remuneration for the three different categories of directors could be compiled. The STI, LTI and TGP remuneration package all form part of the total package directors receive. The reason for these differences between remuneration structures is that firms want to ensure sustainability over both the short and long term. As can be seen in the example in Figure 1.3, the CEO's remuneration composition is different from the CFO and that of other executive directors: by allocating a bigger portion of the incentives for the CEO to variable pay, and structuring half of that component to variable incentives over the long term, shareholders can make sure that the CEO create short-term performance to obtain a

higher income over the short-term, but can also ensure long-term sustainability and value for the firm and its shareholders.

Identifying all the different components of remuneration and understanding how the remuneration compositions for different directors are determined, assist to clarify the relationship between directors' remuneration and the financial performance of a firm. Remuneration is thus not a simplistic matter that the shareholders and board of directors of a firm can easily decide on. For this study, the total remuneration package will be divided into four sub-categories and additional motivations for selecting these sub-components are discussed in the methodology chapter, Chapter 4. In order to identify or develop the best suited remuneration package, the firm needs to acquire a competent remuneration committee.

(b) Remuneration committee

A remuneration committee is responsible for determining the remuneration, incentive arrangements, benefits and any other remuneration payments of the directors. The committee also determines the remuneration of the chairperson of the board. The committee monitors and approves the level and structure of the remuneration for top management (executive directors) who reports directly to the CEO, and the firm secretary. In addition, the committee reviews, monitors and approves or recommends share-incentive arrangements for directors (Swart, 2010:1).

According to Van der Walt (2003:53), the remuneration committee's responsibilities are divided into two parts. The first part is that the committee should identify the best remuneration strategy, plan and guidelines for the firm and its directors. Secondly, the remuneration committee needs to assess the performance of all the directors, to report back to the board regarding the motivation for the directors' remuneration. This is required to compare the remuneration to the goals and achievements set for them. Thus, the remuneration committee plays a vital role in determining the appropriate remuneration package and level of fixed remuneration in return for performance from the directors.

According to Hahlo (1991:275), top executives determine their own remuneration, since they agree upon the set performance objectives for what they are remunerated for.

Thornton (2004) referred to the King II report for guidelines regarding the remuneration committee. The King II report suggested that the remuneration committee should preferably consist of only non-executive directors, in order to ensure that there will be no conflict of interest when determining the remuneration packages for executive directors. CEOs are also only allowed to join the committee when invited and not when the committee is busy discussing the CEO's remuneration package.

Swart (2010:3) listed the following aspects when the purpose of the remuneration committee is defined in determining the firm's broad policy with respect to incentive arrangements, remuneration, bonuses, share options, compensation payments and pension rights. The remuneration committee should:

- Ensure effectiveness and satisfactory incentive schemes as well as reviewing and approving principles needed in this regard;
- Report on environmental, social and corporate governance issues;
- Consider the impact of performance objectives when making remuneration decisions;
- Assist the board in matters referred to the committee;
- Abide by and apply all the laws and codes when determining directors' remuneration; and
- Monitor and review the responsibilities of management in comparison to the remuneration paid from time to time.

According to the TTI Group (2012), the main role and function of the remuneration committee is to assist the board in developing and administering a fair and transparent procedure for determining the remuneration policy of the firm. When determining the remuneration packages for management the following are taken into consideration: the basis of their merit, qualifications and competence compared to the firm's operating results, individual performance and comparable market statistics.

The remuneration committee is always liable to state the reasons and motivate any remuneration decisions made by the committee. In general the remuneration committee is identified as a key factor to consider when a relationship between directors' remuneration and firms' financial performance is investigated.

One important aspect that the remuneration committee is responsible for, is to ensure that proper disclosure and transparency are adhered to.

(c) Disclosure and transparency of directors' remuneration

The disclosure of directors' remuneration is becoming increasingly important. According to Pile (2010:1), all the remuneration and benefits of directors that are audited, should be disclosed in the firm's financial statements in line with South Africa's Companies Act of 2008. For this study's timeframe the Companies Act of 1973 was still applied. Only the total remuneration (direct and indirect) had to be disclosed in the annual financial statements according to the Companies Act 1973.

A survey conducted by PwC (2010:10) indicated that an average JSE-listed firm's executive director earned 250 to 300 times more than the lowest paid executive directors. For this reason PwC believes that there is a legitimate requirement for firms to justify their decisions on directors' remuneration. Greater transparency should mitigate challenges regarding excessive payments to directors.

South Africa is known for the pay gap between firm directors. For example, if the pay gap is quoted at 300, it indicates that one person's remuneration is 300 times more than that of another. This large gap identified, makes disclosure regarding directors' remuneration even more important, due to the problems that arise from improper disclosure or insufficient transparency. However, there are advantages and disadvantages regarding these contentious problems mentioned in this section.

According to Retief (2011:2), Section 30(4) of the Companies Act (2008) outlines the following factors that must be included in the annual financial statements of a firm with regard to directors' remuneration:

- The remuneration and benefits received by each director as defined in Section 30(6);
- The amount of pension paid by the firm to the director or pension scheme;
- Payments made due to loss of office;
- Number of shares issued to a director by the firm; and
- Details of service contracts with regard to directors' agreements.

By ensuring proper disclosure regarding remuneration for directors, the firm could attempt to experience fewer agency problems and should be seen in a more positive light by the public and media. From the above discussion, it can be concluded that proper disclosure of directors' remuneration is an important aspect, especially when trading on the JSE and when the firm's reputation is at stake.

(d) Remuneration paid to directors and firm size

The size of a firm does not only influence the total amount of remuneration received by its directors, but also the ratio of sub-components allocated in the total remuneration package, for example the amount of fixed and variable incentives. A firm's size and type are also important factors when attempting to compare remuneration levels between firms in different sectors and when considering the market and the JSE as a whole.

Research conducted by PwC (2011:4) after the global financial crisis in 2008 already indicated a vast increase in remuneration for executives in the twelve months for 2010 compared to the same period in 2009. The results obtained from the study done by PwC (2011) suggested that directors received basic salaries comparable with firms of a similar size (benchmarking) and remuneration could even be compared with the international environment.

In this research study, the focus was on firms from the Industrial Sector. All firms that were listed on the Industrial Sector of the JSE during the period 2002 to 2010 were considered. Those that delisted were also included. Furthermore, firms had to comply with the additional requirements set in this study to be included in the final sample. By considering all firms in the sector, irrespective of their size, a potential size bias was reduced.

1.2.4 Remuneration and performance

Directors should be managing a firm in such a way as to maximise shareholders' value by managing the day-to-day operations as well as ensuring sustainable future growth. Therefore, when satisfactory financial performance is achieved by a firm, its directors should be compensated accordingly in terms of their remuneration (De Wet, 2004:13). Performance criteria will be instrumental to ensure that directors' remuneration is fair and appropriate for the job and in line with the results they achieved. Performance

criteria for directors are divided into three broad types of measures: market-based measures, accounting-based measures and individual-based measures (Greene, 2010). Forms of these three types of measures used to measure directors' performance include:

Market-based measures which focus on:

- Shareholder return;
- Share price (and other market-based measures); and
- Profit-based measures.

Accounting-based measures which address:

- Return on capital employed; and
- Earnings per share.

Individual-based measures which focus on:

- Individual director performance (in contrast to corporate performance measures).

The measures are used to evaluate financial performance (Mallin, 2009:254). When trying to find a relationship between directors' remuneration and the financial performance of a firm, the financial statements of firms can be very useful to obtain the necessary information. The total remuneration package for directors is usually easily accessible from financial statements when needed for research purposes. In this research study's case the total remuneration for each director was sub-divided, in order to assess the different sub-components and their relationship with the financial performance of the firm. The reason for sub-dividing the total amount of remuneration is that not all parts of the package may hold a relationship with the financial performance of a firm, and if so, the relationship type may vary between these sub-components. For instance, a specific incentive may be provided to achieve a specific performance objective of a firm. This may influence a specific sub-component in the total remuneration package.

Strong pay-for-performance sensitivity is seen as a key metric in aligning the differing objectives of directors and shareholders. Scepticism in this regard is often observed

due to the fact that compensation performance contracts are sometimes identified as greed instruments rather than an innocent incentive mechanism (Bebchuk & Fried, 2004:8).

When considering the immediate relationship between director remuneration and trying to identify results regarding profit maximisation and firm performance, it becomes almost impossible to draw definite conclusions. However, it is possible to pinpoint patterns in director remuneration to assist in determining whether profits are consistent when compared. Baumol (1967:46) hypothesised that executive directors' salaries are far more correlated to the scale of business operations than profitability.

According to Jensen and Murphy (1990:225), remuneration for directors shows small sensitivity to the overall performance of firms. This finding is in contrast to the agency theory. In the agency theory, an attempt to resolve the agency problem between shareholders and directors is exercised in the form of incentives. Designing an optimal remuneration package for directors to ensure and align mutual interest for both parties suggests that a relationship between directors' remuneration and the financial performance of firms should exist.

Other studies have also failed to show that the relationship between payment and performance is strong, such as Jensen and Murphy (2004:98) and Barkema and Gomez-Mejia (1998). A PwC report (2010) confirmed that there is no direct correlation between market capitalisation (calculated by the number of shares issued and prevailing share prices) and the remuneration of directors. Thus, not all the studies investigating the relationship between directors' remuneration and firm performance yielded the same findings and results.

A study conducted by Dommisse (2011:5) examined the total remuneration package of directors and compared it to the financial performance of a selected sample of firms listed on the JSE. This was done to ascertain whether there is a relationship between the total remuneration package and a number of selected financial performance variables included in the study. Turnover, income, and income before interest and tax (EBIT) were the performance factors used to compare financial performance with the total remuneration package. The study found significant relationships between the total remuneration for directors and the selected variables regarding the financial performance for the firms. A strong correlation of more than 80% was also observed

between total directors' remuneration and the variables selected for financial performance of the firms. Directors' remuneration only increased when there was a concomitant increase in turnover, income and profit. Only five of the 120 firms selected for the study showed a negative correlation, confirming a strong relationship between directors' remuneration and the financial performance of the firms. These research studies suggest that possible relationships between directors' remuneration and the firms' performance might exist, but the type of relationship, if any, is in most cases unknown.

Given the background provided in the previous section of this study, including previous research studies done globally in this field, the importance of this study is clear. The remainder of this chapter focuses on the research problem, research objectives, research design, hypotheses, orientation of the study and concludes with the necessity for research in the specific field.

1.3 RESEARCH PROBLEM

From a shareholder's point of view, any disproportion between directors' remuneration and the financial performance of a firm raised serious questions about the method according to which directors were rewarded. The relationship between total directors' remuneration and the financial performance of a firm will be investigated. Sub-components of directors' remuneration and types of relationships towards financial performance variables will also be analysed and tested. In addition to the various relationship tests, four debatable areas needed specific attention. These included:

- The overall level of total director remuneration and share options/share gains;
- The suitability of financial performance measures, based on their ability to motivate directors to act in a way to create shareholders' value;
- The role and independence of the remuneration committee in determining director remuneration; and
- Shareholder influence on the remuneration of the directors.

In this study, the sub-components of directors' remuneration are identified and compared to the financial performance variables selected for this study. Investigations like these may assist firms to set their remuneration for directors in a more strategic way and to ensure shareholders' value maximisation as well as the sustainable

financial performance of the firm. Findings from this study should assist and inform firms of the latest remuneration trends, in order to easily benchmark themselves to the industry and competitors. Furthermore, proper disclosure and enhancing transparency by means of implementing the required principles should be helpful in addressing the research problem.

1.4 OBJECTIVES OF THE STUDY

In order to address the research problem, the following primary and secondary objectives are formulated:

Primary objective:

- To investigate the expected relationship between directors' remuneration and the financial performance of a firm.

Secondary objectives:

- Identifying the different sub-components of the total directors' remuneration and their importance towards the firms' financial performance measures identified;
- Investigating the contribution of the various sub-components towards total remuneration;
- Investigating the relationship between the various sub-components of directors' remuneration and firms' financial performance variables selected;
- Comparing the total and the sub-component remuneration of executive directors with the financial performance variables of the firms; and
- Comparing total non-executive directors' remuneration with the financial performance of the firms.

This study focuses on the directors' full remuneration package as well as the remuneration per sub-component. All executive and non-executive directors of sample firms selected from the Industrial Sector are considered. Listed and firms that delisted during the timeframe 2002 until 2010 are included, provided that the necessary information is available. The directors' total remuneration package is divided into its sub-components, consisting of basic salary, bonuses, share options or grants exercised as well as other remuneration/allowances in order to identify the possible

relationship of each sub-component in the total remuneration package with the financial performance of a firm.

Four measures of financial performance were selected to investigate different aspects of a firm's sustainability and performance over the short and long term. To achieve the objective of this study, all relevant measures of financial performance were obtained from the firms' financial statements, and used to quantify financial performance. Short-term measures identified were turnover and earnings per share (EPS). The long-term measures considered were total share return (TSR) and market value added (MVA). These measures were selected due to the vast scope of financial coverage they provide, thus including accounting-, market- and individual-based measures.

By identifying a relationship between directors' remuneration and the financial performance of the firm, the shareholders and stakeholders can judge whether the supervision of the remuneration committee and the firm's current strategy, are sound and of a satisfactory standard. If there is no relationship between directors' remuneration and the financial performance of the firm, it could suggest excessive incentives for directors, thus not enhancing the overall performance of the firm.

Excessive remuneration would only be plausible when sound financial performance by a firm can be used as a motivation for the decision. Since directors' remuneration is currently a very sensitive and contentious issue, not only in South Africa but worldwide, this study also investigated the financial performance of firms paying very large amounts to their executives. If the firm's financial performance was in line with the remuneration that the directors received during the given timeframe, the positive relationship could be seen as justification for the high remuneration levels.

Based on past research, sub-dividing remuneration packages and identifying trends in fixed and variable incentives also provides an indication of the way that firms are structuring total remuneration for directors (Bognanno, 2010:2). As in a study conducted by Murphy (1999), remuneration was split into four categories, consisting of base salary, bonus, share gains and other incentives.

Based on the research problem and the objectives of the study formulated in the previous two sections, the hypotheses were developed.

1.4.1 Hypotheses

A hypothesis is an unproven proposition that tentatively explains a certain assumption. The null hypothesis (H_0) then, is a statement of the status quo, communicating the notion that any change from what has been thought to be true or observed in the past will be due entirely to random error (Zikmund, 2003:499). By means of statistical techniques, the researcher determines whether the empirical evidence confirms the theoretical hypothesis. The main objective of the study was to assess whether there is a relationship between the remuneration of directors and the financial performance of firms. The study did not only help to shed more light on the issue of overcompensation for executives, but also to solve the problem surrounding disclosure by investigating whether firms applied the principles of the King II report. Finally, it should ensure that remuneration committees use the appropriate strategy to set remuneration packages for directors.

Therefore, the following null and alternative hypotheses were formulated:

H_0: There is no relationship between directors' remuneration and the financial performance of firms.

H_1: There is a relationship between directors' remuneration and the financial performance of firms.

If the alternative hypothesis (H_1) is rejected, it could indicate that the shareholders, stakeholders and the general public may have the right to disagree on the excessive packages directors receive and that they may protest against these incentives. If a positive relationship is found and (H_1) is not rejected, the firms may justify and state that the remuneration for directors is acceptable, thus rejecting the null hypothesis (H_0). Having formulated the hypotheses, the research method is discussed below in Section 1.5.

1.5 RESEARCH METHOD

This study is based on data that were collected from listed and delisted Industrial Sector firms on the JSE during the period 2002 to 2010. The research is based on quantitative time-series cross-sectional data (panel data) by investigating all the individual firms' financial statements throughout the nine-year timeframe, focusing on

both the financial performance and the compilation of directors' (executive and non-executive) remuneration for each firm.

All the data required for the study were secondary data which were obtained from external databases. McGregor BFA (2012) and TimBukOne (2012) are research databases that specialise in the financial reports of firms listed on the JSE. McGregor BFA (2012) was used as the main source to obtain the data required for the measures and figures to evaluate the firms' financial performance. TimBukOne (2012) was the other main source used for collecting data about the directors' remuneration, as disclosed in the financial statements. The data were then converted into Microsoft Excel (2012) to be standardised for the study. All the data collected assisted with the descriptive and inferential statistics that were executed in SPSS (2012).

This study's research process commenced by formulating the relevant hypotheses, as mentioned in the previous section, followed by developing the research design and methodology in Chapter 4. The research process for this study consisted of ten steps. All the required information regarding the type of data used as well as identifying the dependent and independent variables are mentioned in this chapter and more comprehensively in Chapter 4. In this study's case the dependent variables are the directors' remuneration and its sub-components. The independent variables are the selected financial performance measures selected.

The data processing and analysis of the dependent and independent variables were considered separately at first. Both the variable types were analysed applying descriptive and inferential statistical tests. In the inferential statistic section, regression models are applied, thus trying to find the relationship between the dependent and independent variables. In instances where outliers were identified in the data set, trimming was applied in order to refine the results. If time delays between financial performance and directors' remuneration occur, lag testing would be helpful. Additional testing for lags between the dependent and independent variables are therefore also performed to determine possible relationships.

1.5.1 Research design

When considering the research design, it is important for the researcher to anticipate the appropriate research method to maximise the validity of the eventual results (Mouton, 1996:107). This study mostly employed secondary research methods.

(a) Secondary research and secondary data

Grinyer (2009) defined secondary research as the use of existing data collected for the purposes of a prior study, to peruse a distinct research interest from the original work. Secondary data are most commonly associated with quantitative data. According to Boyce (2002:94), one of the major rewards of secondary research is that it can offer the necessary background information to improve the researcher's perspective of the situation surrounding the current issues.

Secondary data can be obtained from internal and external sources. Internal, or in-house data, are secondary information acquired from within the organisation where the research is being carried out. External secondary data sources include books, journals, newspapers, internet websites as well as external databases (Boyce, 2000:96). For the purpose of this study, external secondary data were predominantly used.

To obtain the secondary data, the researcher first conducted a thorough literature review regarding firm performance, and narrowed it down to the financial performance of firms. Continuing with the literature review, remuneration in general and directors' remuneration including its sub-components in particular were discussed. Previous studies of a similar nature were also included to emphasise the significance of the study. Books, academic journals and other publications were used to identify the expected relationship between directors' remuneration and the financial performance of firms. Furthermore, prior studies and reading material with regard to remuneration and the factors that normally influence it, were analysed. Information relevant to this study was used and modified to apply it as part of the literature review and the research design of this study. All this information provided a solid theoretical background for the study.

External databases were used to obtain the data needed for the empirical analysis. The data required to measure financial performance were obtained from the McGregor

BFA (2012) database. The reason for using McGregor BFA as the main data source is because of its complete set of standardised financial reports for all the Industrial Sector JSE-listed firms. McGregor BFA (2012) is also a popular data source for researchers. Lastly, data regarding the remuneration of directors were obtained from TimBukOne (2012). The directors' total remuneration and sub-components were collected under the directors' shareholding and remuneration sources as stated on the financial reports for each firm.

As mentioned previously, the primary objective of this study was to determine whether the remuneration of directors had any relationship with the financial performance of firms. By applying regression analysis on these variables, the stigma regarding overcompensated directors could be addressed. Listed firms (those firms that remained listed during the study period) and delisted firms (firms that delisted during the study's time period, but existed for at least three consecutive years) on the Industrial Sector of the JSE were included. The time period for the study was 2002 until 2010. A large sample was selected in this study since the data for most firms were readily available. The Industrial Sector was selected due to its large size and the general nature of firms listed in this sector.

To be included in the study, a firm had to be listed on the Industrial Sector within the timeframe period for at least three consecutive years with the necessary information disclosed regarding its financial statements, remuneration paid to directors, the layout of the remuneration package given to the directors, and share price reports. To investigate this relationship, the following variables are discussed.

(b) Independent and dependent variables

The dependent variable for this study is the directors' total remuneration. This variable was divided into sub-components of directors' remuneration collected from the financial statements of the firms. The dependent variable's four sub-components are basic salary, bonuses, share options/grants exercised and other incentives.

An independent variable is a variable whose value is not determined by the value of other variable(s), but rather determines the value of those other variables (*Financial Dictionary*, 2012). The independent variables for this study are the various financial performance measures. In this study, these variables were quantified in different ways

to reflect different aspects of financial performance, and included in the statistical analysis to investigate their relationship with the dependent variable. The independent variables used in this study were turnover, earnings per share (EPS), total share return (TSR) and market value added (MVA).

1.5.2 Data processing and analysis

Data processing consists of at least two kinds of operations. The first operation entails the general method, during which the data are extracted to obtain the relevant required information, and then summarised in an appropriate form like a diagram, report or table. The second operation is by manipulating the input data with an application programme to obtain the relevant output as graphs, numbers or texts (*Business Dictionary*, 2013b).

As mentioned in the research design, McGregor BFA (2012) and TimBukOne (2012) were used as the primary sources for all the secondary data needed for the study. The data were analysed and converted to a useable format using Microsoft Excel (2012).

Data analysis comprises various steps and is used to examine each component of the data provided analytically and logically. Various sources of data are usually gathered, reviewed and analysed to form findings or reach a conclusion for specific research (*Business Dictionary*, 2013b). Generally, data processing starts by first analysing the data set in order to compile descriptive statistics, which is followed by inferential statistics.

(a) Descriptive statistics

Descriptive statistics are used to describe the basic features of the data in a study. They offer simple summaries about the sample and the measures included in the study. Together with a simple graphical analysis, they form the basis of virtually every quantitative breakdown of data (Williams, 2006). In this study, the following descriptive statistics were included:

(i) Mean: The mean is a measure of central tendency and it reflects all the values in a data set. All the values in a data set are added and divided by the number of values (Coldwell & Herbst, 2004:102) to determine the mean.

(ii) Median: According to Coldwell and Herbst (2004:103), the median is the middle observation of a data set. Values are ranked according to increasing sizes, and the middle value represents the median value.

*(iii) Standard deviation***:** DeFusco, McLeavey, Pinto and Runkle (2008:287) stated that the standard deviation measures the spreading of the mean. The mean and standard deviation are usually presented together when summarising data. The standard deviation explains the measure of dispersion within data.

(iv) Skewness: Skewness is described as an asymmetry from the normal distribution in a set of statistical data. Skewness can come in the form of "negative skewness" or "positive skewness", depending on whether data points are skewed to the left (negative skew) or to the right (positive skew) of the data mean (Cooper & Schindler, 1998:468).

(v) Kurtosis: Kurtosis is any measure of the "peakedness" of the probability distribution of a random variable. In a similar way to the concept of skewness, kurtosis is a descriptor of the shape of a probability distribution and, just as for skewness, there are different ways of quantifying it for a theoretical distribution and corresponding ways of estimating it for a sample from a population (Dodge, 2003).

All these descriptive statistic measures and their results assisted the researcher to select proper regression analyses and to identify other tests for the study, as discussed in the next section on inferential statistics.

(b) Inferential statistics

According to McDaniel and Gates (2001:413), the basic principle of statistical inference is that numbers can be different mathematically, but at the same time not significantly different statistically. In this study, a probability hurdle of .05 was used to determine whether a relationship between variables was significant or not. Less than .05 indicated a significant relationship and a probability larger than .05 indicated insignificance. A more thorough discussion on this topic is included in the research method chapter. In this study, regression analyses were most suited and performed to test the relationships between variables.

(i) Regression: Regression is a statistical technique that attempts to determine the strength of the relationship between one dependent variable (components of directors' remuneration in this study) and a series of other changing variables (financial performance measures in this study). Regression analysis considers a group of random variables, thought to be predicting the dependent variable, and attempts to find a mathematical relationship between them (Kruskal & Tanur, 1978).

For the purpose of this study, multiple regressions were conducted. Multiple regressions are applied when more than two independent variables are included. Since the study identified four independent variables, multiple regressions were required.

The data set for this study can be classified as panel data. Thus, the regression analysis techniques applied are more complex than for normal regressions. Panel data sets contain observations on various observed units over a time period for different firms (Keller, 2005:650). In this study's case the time period is from 2002 until 2010 and for each year a number of different variables were obtained for every firm that was listed in that year. In order to determine the most appropriate regression model to apply to the data set, the F-test for fixed effects and Hausman test for random effects had to be conducted to select either a fixed effects, random effects or pooled ordinary least squares (OLS) regression model. Additional tests, like the Breusch-Pagan test for heteroskedasticity, assisted to obtain more accurate results when data were not normally distributed. The regression tests, measures and models used and applied on the selected data set for this study are also discussed and motivated comprehensively in Chapter 4.

1.6 ORIENTATION OF THE STUDY

The outline of the study is as follows:

CHAPTER 1: INTRODUCTION TO THE STUDY

Chapter 1 provides a thorough background and outline of the study, setting and formulating the research problem, objectives, research methodology and discussing briefly the research methods that were employed in the study. A brief literature review on the key issues investigated in the study is also included. The chapter concludes by explaining the importance and contribution of this study in a South African context.

CHAPTER 2: FINANCIAL PERFORMANCE

This chapter starts with an overview of corporate performance in general, and then continues to discuss important aspects related to the financial performance of firms in particular. The concept of firms' performance in relation to shareholders' wealth is discussed in-depth, focusing on the advantages and disadvantages when creating shareholders' value. Other factors related to financial performance, such as the stakeholders' theory and the agency theory are also examined.

The last two sections in Chapter 2 focus on different evaluation measures employed by firms in order to estimate performance. The first section, where non-financial measures are discussed, is followed by the second section, which investigates financial evaluation measures. As this study focused primarily on the financial performance of firms, Chapter 2 concludes with an in-depth discussion of accounting- and market-based measures when evaluating a firm's financial performance.

CHAPTER 3: DIRECTORS' REMUNERATION

Chapter 3 covers all the key factors related to remuneration. Starting with a background, definition and an overall view of the concept of remuneration, the focus shifts to an in-depth analysis and discussion of directors' remuneration, including the following: the external and internal factors influencing directors' remuneration; the remuneration strategy and remuneration requirements; the structuring of directors' remuneration packages; the role and importance of a remuneration committee; the disclosure of directors' remuneration; and the psychological impact of remuneration on directors.

Chapter 3 also includes a separate section focusing on non-executive directors' remuneration. Since the roles and responsibilities of non-executive directors are different from executive directors, their remuneration structure also differs.

The final section in Chapter 3 concludes with an extensive literature review of previous studies done worldwide on the relationship between directors' remuneration and the financial performance of firms in order to highlight the importance of this research as well as to develop expectations about relationships between the variables included in the study.

CHAPTER 4: METHODOLOGY

This chapter focuses on the research methodology for the study. It starts with a definition of business research, a comparison of different business research methods and why a scientific research method was chosen. It also emphasises the importance of business research in terms of a firm's financial performance and maximising shareholders' wealth.

The remainder of Chapter 4 is based on the complete research process, as outlined by Lamb, Hair, McDaniel, Boshoff, Terblanche, Elliott and Klopper (2010:15). Each of the ten steps identified in this research process is explained and discussed in-depth, including the following: defining the research problem; identifying the research objectives; creating and developing a research design; conducting primary research; planning the research framework and design; collecting, analysing and interpreting the secondary data; compiling the research findings report; and follow-up and monitoring.

Very important decision-making regarding the entire research process took place in Chapter 4. These selections influenced the entire research process. First the data collection method was identified (secondary data) followed by selecting a sample. Other important choices included selecting and motivating the variables for the study and furthermore determining which variables represent the dependent and independent variables respectively.

The chapter concludes by explaining why it was necessary to use two types of statistical measures, namely descriptive and inferential statistics. The importance of motivating the validity and reliability of these measures, as well as that of the data used in the study, is also emphasised.

CHAPTER 5: RESEARCH RESULTS

In this chapter, data relating to the directors' remuneration and financial performance are analysed. This chapter provides the results as determined from the empirical analysis of the data. Tables and graphs are provided to explain the overall results for the descriptive statistics as well as the regressions analyses conducted as part of the inferential statistics section.

In Chapter 5 both the descriptive and inferential statistics sections display the results according to a specific pattern. Each section starts by first focusing on the dependent variables (total directors' remuneration results) and then the independent variables (firms' financial performance measures).

In terms of the dependent variables, the total remuneration for all directors is considered at first. Thereafter a distinction is made between executive and non-executive directors in order to more specifically focus on these two types of directors' remuneration results. Subsequent to the above, the directors' total remuneration is then categorised into the four sub-components selected in this study. Each one of these sub-components is then investigated to identify trends and possible relationships with financial performance.

Additional tests were completed when conducting the inferential analyses and reporting the results in Chapter 5 to increase the accuracy and usefulness of the information. Finally lag testing was conducted to test the possibility for time delays between firms performing financially and directors being remunerated afterwards.

CHAPTER 6: SUMMARY, FINDINGS AND CONCLUSION

The final chapter concludes the study by summarising the overall findings and extensively discussing how the findings can assist firms, shareholders, stakeholders and the general public. More specifically, it points out how the study's findings, combined with earlier research, can help with future decision-making in respect of directors' remuneration.

Chapter 6 concludes by acknowledging possible limitations of the study and suggested future research in the study's field.

1.7 THE CONTRIBUTION OF THE STUDY

The skewed income distribution in South Africa has been a major source of concern. According to Dommisse (2011:4) the country Gini-coefficient of 0.57 indicates that South Africa has one of the most skewed income distributions in the world. A value of 0 indicates that the income difference level is at the lowest possible level and a value of 1 indicates the most skewed distribution. This problem is one that not only appeared after the global financial crisis in 2008, but was mentioned long before 2008. This

skewed income distribution affects the entire country, and is also observed when considering directors' remuneration. The substantial difference between a normal employee's salary and those of directors in South Africa is often considered as a source of concern. The government, public and shareholders want to ensure that the remuneration paid to a director is appropriate, rather than excessive salaries being paid without proper motivation. Even trade unions are starting to investigate directors' remuneration, because they believe that their normal hardworking members are being exploited (Dommisse, 2011:12).

The study will further assist firms to understand how trends are changing with regard to directors' remuneration packages. The focus is not only on the total remuneration packages of directors, but also on the different components such as the guaranteed and variable parts of the remuneration package. In this study, directors' remuneration sub-components were identified as basic salary, bonus, share options/grants exercised and other remuneration/incentives. Finding the appropriate relationship between the directors' remuneration sub-components, the total directors' remuneration package and the financial performance of the firm, should help to identify potential problem areas, contribute towards the development of efficient remuneration strategies and ensure the sustainability and competitiveness of the firm.

Using statistical measures, tables and graphs, the relationship between directors' remuneration and the financial performance of firms is clarified, reducing the problem of misconceptions the general public and media might have of overcompensated directors. Lastly, the research may assist firms to plan their short- and long-term sustainability initiatives around directors' remuneration and the firm's financial performance.

CHAPTER 2: FINANCIAL PERFORMANCE

2.1 INTRODUCTION

The term 'financial performance' is defined as a particular measure of how a firm utilises its assets for the primary mode of business to generate returns (*Business Dictionary*, 2013a). Financial performance is generally regarded as a measure of a firm's total financial health over a given time period, and is used to compare similar firms in the same industry, or to compare industries or sectors with each other. The financial performance of a firm directly influences its shareholders by means of share value creation and capital growth in the firm. Therefore, this chapter commences by focusing on shareholders' value, shareholders' principles as well as advantages and disadvantages of maximising shareholders' wealth.

After a discussion of a firm's relationship with its shareholders, the literature review is also used to identify various other stakeholders, using the stakeholder theory as starting point. From here the focus shifts to the agency theory, providing support for a relationship between directors' remuneration and a firm's financial performance. By defining the agency theory, the study first focuses on the management of the agency problem, followed by a discussion of the conflict between the parties involved in the agency theory. Non-financial factors affecting a firm's performance are also considered.

The last section of this chapter focuses more specifically on literature pertaining to the financial performance of a firm. Various market and accounting measures that are commonly used to quantify the financial performance of firms in previous research studies are discussed. To conclude, this chapter identifies a set of financial performance measures that are relevant for this study. Each one of these measures are discussed individually to determine its importance, before concluding the discussion of the chapter.

2.2 SHAREHOLDERS' VALUE

The term 'shareholders' value maximisation', sometimes phrased as the 'shareholders' value model', is defined as the ultimate measure of a firm's financial performance in terms of shareholders' wealth. This measure is used to identify the primary financial

goal for a firm and to reward the shareholders with incentives such as dividends or increasing share prices (Welch, 2009).

Fernandez (2013:1) defined shareholders' value as the sum of all strategic decisions that affect the firm's ability to increase its free cash flow over time. This value is delivered to shareholders as a result of the ability of managers to grow earnings. Making wise investment decisions and ensuring healthy returns on invested capital are two core drivers in creating value for shareholders – the only important consideration is to be responsible when working with shareholders' capital. The opposite can also occur when mismanagement occurs by taking unnecessary risks or making poor decisions.

Shareholders' value is reflected by firms as the ultimate measure for determining the firm's success in the extent of enriching its shareholders. Shareholder value is the value enjoyed by a shareholder possessing shares in a firm. Typically when only one type of share is issued by a firm, the shareholders' value would be the number of shares outstanding multiplied by the current share price. Since firms belong to shareholders, it is only obvious that firms need to create value for them and that management may only spend funds if it is authorised or is in the best interest of shareholders. Firms first and foremost have a responsibility towards their shareholders. Shareholders' value maximisation is a controversial issue. In the ideal setting firms compensate their directors to pursue the firms' goals and to ensure performance from the directors for optimal value creation. Unfortunately this ideal setting is not always the case. Friedman (1970) made the statement that the "business of business is business" and that a firm's responsibility is to increase its profits. Maximising shareholders' value also helps to discipline managers to rather perform to increase the shareholders' value than to focus on their own interests.

According to Jensen (2001:297), the main goal of a firm needs to be the maximisation of its shareholders' value. If a firm does not pay attention to its shareholders and increase shareholders' value, the firm itself will not be able to maximise its own growth either. It is important to link the growth of a firm with shareholders' value maximisation to create synergy for all parties involved.

Maximising shareholders' value forms the foundation of value based management and is a key management principle that should first and foremost ensure that the best

interest of the shareholders is considered. Shareholders should be taken into consideration and be notified when business decisions are made that may influence their value in the firm. There is, however, no legal obligation for directors to maximise shareholders' value (Kennerly, 2010).

Martin *et al*. (2009:118) emphasised the importance of VBM. Their study supported the consistency between maximising shareholders' wealth and rewarding management for doing so. Their study suggested that the VBM relationship is critical to ensure that firms maintain a positive reputation. To promote the shareholders' interest and VBM in a firm, firms are requested to comply with a few value principles that will benefit the firm and at the same time maximise shareholders' value.

2.3 SHAREHOLDERS' VALUE PRINCIPLES

The general understanding is that shareholders' value maximisation should be the single, guiding principle of corporate governance. Enhanced investor control and oversight should be stimulated in this regard. There are, however, a few assumptions and beliefs regarding proper governance in firms. According to Blair (2003:53), the following set of fundamental beliefs are incorporated or implied by the shareholders' value principles of corporate governance:

- Maximising the value for shareholders of a firm is equivalent to maximising the overall wealth being created by a firm;
- Share price is a good performance measure, although financial markets also play a role;
- Managers are disciplined by being held accountable for maximising shareholders' value, and this ensures that they are forward-looking. Other metrics may confuse management and may lead to the misuse of their positions for their own interests rather than the interests of shareholders;
- Proper incentives, in the form of remuneration packages, will ensure that competent managers and directors are retained in the firm. This will encourage the latter to do a better job of maximising share value tied to share-price performance, such as share options;
- Directors and management should not be able to entrench themselves when outside investors want to take control of companies in hostile buyouts, by putting

up an impenetrable barrier. Proper governance ensure sustainability in the financial market; and

- Shareholder primacy regimes should be adopted to prevent management to deterring takeovers.

All these principles play an important role to ensure that shareholders' value is created in an efficient and effective manner, but both the advantages and disadvantages of shareholders' value maximisation need to be acknowledged.

2.3.1 Advantages of shareholders' value maximisation

When shareholders' value maximisation is mentioned, the average individual most probably immediately thinks of profits, higher returns and optimistic annual corporate reports. These are, however, not the only advantages when shareholders' value is maximised. Johnson (2013) listed a few other advantages when wealth for shareholders is created. These advantages include:

- When shareholders' value increase, a chain reaction occurs, benefitting more people and creating further wealth. Earnings, growth of the firm and share prices also increase;
- VBM is applied when managers strive for shareholders' value maximisation;
- Shareholders' value maximisation helps to discipline management and is an effective measure to evaluate managers;
- Shareholders' value is tightly linked to continued business expansion (capital and operations) and profits (sustainability);
- When shareholders are satisfied, they become loyal and the firm will have committed board members;
- The public reputation of the firm when obtaining media attention thanks to performance and satisfied shareholders can strengthen the firm's value even more; and
- Better long-term sustainability is possible when firms work towards maximising the value of shareholders.

Madden (2010:134) agreed with Johnson (2013) that maximising shareholders' value is not only beneficial for the obvious purpose, but also for the larger social community. When firms continually grow, invest or expand, long-term wealth is created for everyone. Unfortunately, not everything is perfect when firms only focus on shareholders' value; therefore the disadvantages regarding shareholders' value maximisation also need to be investigated.

2.3.2 Disadvantages of shareholders' value maximisation

Criticism against an exclusive focus on shareholders' value maximisation has greatly increased following the global financial crisis in 2008. This is partly because of a lack of social responsibility in terms of employment, environmental issues and ethical business practices. In general, management's sole intention is to increase shareholders' value, but this approach may negatively influence third parties in the process. Other critics claim that CEOs and other individuals in management positions enrich themselves at the cost of shareholders (Aglietta & Reberioux, 2005:4).

Martin *et al*. (2009) also suggested that firms need to shift their focus more towards corporate social responsibility in order to create a win-win situation for all stakeholders. Their study does not object to shareholders' value creation, but points out that shareholders' value creation should not be the only objective managers strive towards. A few disadvantages regarding shareholders' value are listed below (Martin *et al.*, 2009):

(a) A lack of transparency

Shareholders' value depends on how much profit a firm generates, since these financial results are usually reflected in the firm's share price. To achieve higher share values, some firms use methods to fraudulently increase the profits reported in their financial statements. To prevent these fraudulent activities proper disclosure and transparency are needed. With better transparency, it will be possible to distinguish between actual profits and fraudulent profits.

(b) Increased risk

In an attempt to increase short-term shareholders' value, some firms may take larger risks than usual. The stability and sustainability of the firm should be considered when

more debt and higher risk investments are realised. Taking large risks may attract investors and increase the share price, but could, at the same time, easily place the firm at risk of bankruptcy.

(c) Short-term strategy

Managers are sometimes so obsessed with shareholders' value that they do not focus on the long-term success of the firm. Short-term strategies to increase the value of share options might be beneficial for share option holders over the short term, but not for the firm's sustainability in the long term (Rappaport, 1998:13).

When comparing the advantages with the disadvantages associated with shareholders' value maximisation, it becomes apparent that most people do not agree with the theory of shareholders' value maximisation. Many academics argue for or against a consensus view that managers should strive to maximise shareholders' value, and by doing so, impact on the broader social welfare of others. For this reason, it is important to take the stakeholder theory into consideration to understand this integrated relationship in the firm.

2.3.3 Stakeholder theory

The stakeholder theory is defined as the theoretical framework of business ethics and organisational management which focuses on the moral and ethical values of the management of a firm (Freeman, Wicks & Parmar, 2004:364). The stakeholder theory argues that managers in a firm should make decisions so as to take account of the interests of all stakeholders in a firm (Jensen, 2001).

In the last three decades, awareness of shareholders' protection and rights became more evident as shareholders are the owners of a firm (Gugler, 2008:3). Therefore, a firm had a duty to put shareholders' needs first, that is, to increase their value. However, the stakeholder theory argues that there are also other parties involved such as trade unions, communities, creditors, debtors, employees and customers.

Value creation is an inevitable part of doing business when considering the stakeholder theory. A shared sense of value is created in a firm and managers must use value creation as the core aspect when bringing the stakeholders together. When managers

know how they want to do business and what the firm's needs are, a proper relationship can be formed between stakeholders and the firm (Freeman *et al*., 2004:364).

Martin *et al*. (2009:118) suggested that a firm's cultural mind-set needs to be transformed towards corporate social responsibility and needs to consider the impact of a firm's operations on all stakeholders. Their study's evidence emphasised the critical importance of stakeholders for a firm's long-term sustainability as well as for sustainable value creation.

Criticism also exists against the stakeholder theory. Blattberg (2004:172) criticised the stakeholder theory, arguing that the interests of different stakeholders can be offset or compromised against one another. Blattberg (2004:173) commented that conflict can easily occur when applying the stakeholder theory, because not all stakeholders will ever benefit equally.

Although researchers have different views as to whether the stakeholder theory should be applied or not, it is difficult to ignore the relationship between the shareholders, managers and other stakeholders of a firm.

As seen from the section above, focusing exclusively on shareholders' value maximisation may negatively impact on a firm's other stakeholders. In addition, the managers and shareholders of a firm may have different objectives, which are not always aligned with each other and which may negatively influence the relationship between these two groups. This complex relationship between shareholders, stakeholders and managers is considered as part of the agency theory.

2.4 THE AGENCY THEORY

2.4.1 Introduction

The agency problem is the result of differences in the objectives of management and shareholders. Adam Smith already identified the agency problem a few centuries ago in his book "The wealth of nations" (1776:607):

"The directors of such companies, however, being the managers rather of other people's money than of their own, it cannot be well expected, that they should watch over it with the same anxious vigilance with which the partners in a private co-partnery frequently watch over their own. Like stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give

themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company."

Since Roman times, firms and their management started to protect the interests of shareholders (referred to as principals and capital providers) (Lipman, 2010). During the late 19th century, managers were referred to as directors of the firms (acting as agents). Mismanagement and directors' abuse of power for their own benefit lead to the agency problem. To prevent agency problems from occurring, a number of corporate governance measures were implemented (Carlos & Nicolas, 1996:916). The agency theory suggests that the optimal remuneration package for directors is one that links directors' remuneration to some measures of the shareholders' value and thus mitigates agency costs (Devers, Cannella, Reilly & Yoder, 2007:1016; Murphy, 1999).

According to Appelbaum *et al.* (2011), the agency theory refers to the contract between persons, principals and agents. The agent performs a service for the principal and receives authority to make decisions for the principal on his/her behalf. The agent is compensated in return by looking after the interest of the principal. Although this sounds like the ideal solution for the agency problem, there is a good chance that the agent will not always act in the best interest of the principal, but may want to promote self-interest instead. This might be due to a lack of incentives or other personal reasons. Dalton and Daily (2001) recognised the agency theory as the most recognised theoretical perspective applied in corporate governance. Their study describes the fundamental agency problem within firms, where separation of ownership and control exists.

2.4.2 Agency problem management

To solve the agency problem, proper monitoring of management's activities is needed. Initiatives in this respect can become very costly not only in financial terms, but also with regard to other factors like relationship and trust issues.

Firms can manage the agency problem by focusing on how performance is promoted and rewarded. According to Ibrahim and Samad (2009), agency costs occur from the misalignment between shareholders and the firm's managers. One of the core reasons for this conflict is due to excess cash and cash equivalents. Singh and Davidson (2003:793) and Florackis (2008:37) also revealed that small-sized firms have a

significant positive influence on asset utilisation efficiency, reporting that higher asset utilisation efficiency leads to lower agency costs.

The board size of a firm can also negatively influence the relationship to asset turnover, indicating that more board members are less efficient (Beiner, Drobetz, Schmid & Zimmermann, 2006:249).

To assist in solving the agency problem, non-executive directors are included in the board of directors. When firms apply this governance mechanism, questions arise whether non-executive directors align themselves with shareholders to promote their interest, or with top management that influences the board. In most cases, it was found that the non-executive directors will align themselves with management rather than with shareholders (Long, Dulewicz & Gay, 2005:671).

According to Hambrick and Jackson (2000:108), directors in general are suitably motivated when performing their required duties to ensure they adhere to act in the best interest of shareholders. Unfortunately, directors and shareholders do not always have the same view on certain issues as far as managing the firm and management practices are concerned.

A common example where agency conflict occurs between managers and shareholders is time horizon differences. Managers in general have a shorter horizon than that of the firm and its shareholders. Another example of agency conflict is the difference in risk averseness that may exist between managers and shareholders (Ryan & Wiggins, 2001). The lack of incentives for managers are thus a key problem associated with monitoring management in an effective manner, especially when addressing agency problems.

When remunerating directors with equity, Feltham and Fu (2001:7) recommended that shareholders distinguish between share option plans and full-value share unit plans. The reason is that when remuneration committees implement incentive-efficiency models, firms should rather remunerate their agents (directors) with full-value shares. The reason is that the directors manage the firm's daily operating running and risk factors, thus motivating directors to work harder for share growth. Full-value shares are also preferred by directors as remuneration, as this option offers directors a longer horizon than the usual share options that expire at a certain time. This type of

remuneration could be used by a firm to ensure sustainability over the long-term (Magnan *et al*., 2009:28).

Recently in the United States, a few public firms' directors failed in their task in the aftermath of the Sarbanes-Oxley Act (also known as the 'Public Company Accounting Reform and Investor Protection Act'). Directors' tasks and responsibilities that consist of financial reporting, risk oversight, internal governance, strategic decision-making and planning for sustainability were not met. Shareholders should ensure that directors perform their tasks effectively. One way to ensure performance is by implementing a proper remuneration strategy that will in return ensure benefits for the shareholders (Magnan *et al*., 2009:28).

According to Warren Buffet, quoted in the Berkshire-Hathaway Annual Report (2009), directors have long benefited from the "oversized financial carrots" (rewards). He proclaimed that "meaningful sticks now need to be part of their employment picture" (consequences). Crutchley and Minnick (2011:907) stated that monitoring by shareholders is designed to reduce the agency conflict that results from the separate control and ownership of a firm. Barriers such as conflicts of interest obstruct effective monitoring of agency problems and negatively influence a firm's performance over the long term.

A study by Barber, Ghiselli and Deale (2006:65) found that directors had personal objectives in conflict with those of shareholders. This led to the perception that there may be a weak relationship between a firm's financial performance and its directors' remuneration. They concluded that the agency problem can be resolved by aligning the remuneration of directors with the interests of shareholders, thus creating value for the shareholders through the pay-for-performance relationship. Nevertheless, the relationship between pay-and-performance is not necessarily a simple matter.

2.4.3 Conflict of interest between directors and shareholders

A director's main role in the firm is to make the critical decisions and steer the firm in the right direction. The directors' responsibilities include mergers and acquisitions, capital expenditures, monitoring and assessing manager effectiveness, deciding on compensation, and setting strategies to ensure sustainability for firms. These are only

a few of the important responsibilities and roles directors are accountable for and which could influence the firm's performance positively or negatively.

According to the Companies Act (2008), directors are defined as members of the board of a firm or an alternate director of a firm and include any person occupying the position of director or alternate director, by whatever name designated. Directors must exercise his or her power and perform his or her functions as follows:

- In noble devotion and for a good purpose;
- In the best interest of the firm; and
- With a degree of diligence, care and expertise that may be expected of a person carrying out the equivalent functions and having the general understanding, ability and experience of that director.

The Companies Act (2008) prevents a director from using the position of executive, or obtain any information while acting in the capacity of a director, to gain an advantage for himself or herself, or for any other person (other than the firm or a wholly-owned subsidiary of the firm), or to knowingly cause impairment to the firm or a subsidiary of the firm.

Directors must also avoid any conflict of interest with the firm where possible. South African law states that the director should always place the interest of the firm before the individual's personal interest. Section 75 of the Companies Act (2008) specifically makes provision for dealing with directors that use information of the firm to gain personal wealth. This section clearly states that a director will be prohibited from having any say or influence in respect of using the firm's information to gain personal wealth.

Section 75 of the Companies Act (2008) seems to impose a strict duty not to allow personal financial interest to impact, in any way, on the dealings with the firm. In addition, where a director or member of a board committee has a conflicting personal interest in respect of a matter on the board's agenda, he or she has to state that personal interest and immediately leave the meeting. Such a person is also prohibited from any action that may influence or attempt to influence the discussion or vote by the board, and is banned from executing any document on behalf of the firm in relation to the matter, unless explicitly requested to do so by the board.

It is important that all directors and prescribed officers comply with the conflict of interest declaration provisions, as non-compliance may render certain transactions and agreements void.

The conflict of interest provisions apply equally to persons related to the director, prescribed officer or member of a board committee. Thus, where a director, prescribed officer or member of a board committee knows that a related person has a personal financial interest in a matter to be considered at a board meeting, or knows that a related person has acquired a personal financial interest in a matter, after the board has approved that agreement or matter, he or she should disclose that fact to the board (Section 75 of the Companies Act, 2008).

According to Bebchuk and Fried (2003), there are two contrasting views on the relationship between remuneration and the agency problem. The more accepted view is the ideal contracting approach, which sees remuneration as a “cure” for the agency problem. The other view is the decision-making power approach, which views remuneration as “part” of the agency problem. In order to discourage conflict and to ensure that a good relationship exists between shareholders and directors, the “carrot and stick" method are often be used as a strategic tool in firms.

The so-called “carrot and stick” method is very popular to encourage directors to enhance and strive towards performance of the firm. According to the Cambridge dictionary (2012) the “carrot and stick approach” refers to a strategy of offering a combination of rewards and punishments to encourage behaviour. It is named with reference to a cart driver hanging a carrot in front of a mule while holding a stick behind the mule. The mule would move towards the carrot because it wants the reward of food, while also moving away from the stick behind it, since it does not want the punishment of pain, thus pulling the cart. This is exactly what is being done when remunerating management for good performance, namely setting goals (performance targets) and having consequences if they do not perform. A system like this motivates directors and should contribute towards maximising shareholders’ value.

Martin *et al*. (2009:118) highlighted the relationship between management and shareholders, and suggested that VBM might be the solution. Similar to the carrot and stick method, VBM also reward management for performing well or punish

management for not performing as expected. Activities performed by management that contribute towards shareholders' wealth creation, need to be rewarded.

In order to resolve the agency problem and to apply VBM in a firm, performance measures need to be identified to compare the performance of a firm to the remuneration paid to directors. There are two main types of performance indicators used in a firm. These two types of performance indicators can be used when evaluating directors' performance, namely non-financial and financial indicators.

2.5 NON-FINANCIAL FACTORS WHEN EVALUATING DIRECTORS' PERFORMANCE

'Financial Performance' is defined as the accomplishment of a given task measured against presently known standards of accuracy, completeness, cost and speed (*Business Dictionary*, 2013a). In a contract, performance is deemed to be the fulfilment of an obligation over and above that what was demanded in the contract (Hansen & Wernerfelt, 1989:399). To measure whether obligations are met, relevant performance indicators need to be identified.

According to Corsi, Dale, Daum and Schoppen (2010) a board of directors needs to acknowledge five non-financial factors when evaluating a firm's performance. These five factors are discussed in more detail in the following sections.

2.5.1 Effective board leadership

To ensure effective leadership the combination of knowledge and experience among the directors, the value of information they receive and their ability to operate as a unit are important factors to consider. The CEO who manages the firm dynamics should maintain regular contact with directors between meetings. Highly operational boards often rotate meetings between different firm locations to educate directors about different facets of the firm and ensure communication access to other executives. Directors must be invited to attend all operational and strategically orientated meetings and should be encouraged to ask questions in order to promote overall performance management. The board of directors should not only assess the performance of the CEO, but also evaluate their own work to improve and develop their fields of expertise and knowledge. Transparency is an important principle for sustainable effective board management.

One problem that arises when striving for performance is the top-heavy facts and figures that are usually backward-looking, and that are not sufficiently focused on strategic issues and planning for the future. A method to ensure effective management is to assist directors by means of well-planned induction programmes, offering them continual opportunities to increase their business skills and understanding what will keep directors up-to-date with changes in legislation compliance or governance codes. Finally, effective management accentuates good communication, whether with board directors, key executives or shareholders when discussing feedback of meetings or remuneration packages.

2.5.2 Strategy

Strategy gives a competitive advantage to a firm and plays a vital role to ensure continuous progress in performance. Properly addressing and handling of strategies from the developmental to implementation and monitoring stages is vital. It is the responsibility of the non-executive and executive directors to develop the correct strategy whereafter the board of directors will fine-tune and oversee the execution of the strategy by management. Measuring the directors' performance against a set of agreed-upon key performance objectives will assist performance evaluators when the directors' progress is evaluated for a specific timeframe. The most common process method for the yearly review is where the CEO and the board of directors revisit the firm's annual strategy by analysing the set of strategic options, identifying and evaluating their competitors' strategy and then making recommendations and adjustments to their existing strategy. Strategic decision-making will influence the firm's success and should satisfy shareholders. Every director must be fully engaged and competent to ensure maximum performance in strategy. Absolute clarity is needed when the requirements and expectations of a strategy are proposed and implemented (Corsi *et al.,* 2010).

Non-performance can only improve when the board of directors and the rest of management work collectively and create a strategy that benefits all stakeholders. Better understanding and valuable suggestions are contributed when sharing thoughts. Debating is also healthy among directors and management who want to make positive, valuable contributions to strategy development that will enhance the directors' performance in the firm.

2.5.3 Risk versus initiative

Following the start of the 2008 global financial crisis, boards of directors have adjusted their approach to risk oversight and assessment. In general, risk responsibility still tends to lie with the audit committee, where the majority of time is spent on financial risk. Risk is not only applicable to financial matters. Issues such as health and safety, the environment, IT security, internal processes, industrial relations and corporate reputation can also have an impact on the overall performance of the firm. Setting the optimal structure and procedures for risk management between directors and management will help to clarify responsibility and accountability issues for effective risk management.

Firms' and directors' risk appetite or averseness needs regular reviewing. Directors' personal attitudes and interests influence their decision-making when risks are identified, evaluated and controlled. Thus, directors should always act in the interest of shareholders and not react based on personal interests and emotions. The agency problem therefore does not only apply to financial performance factors, but also to non-financial performance factors (Corsi *et al.,* 2010).

Recently, the focus has shifted more towards downside risk than upside risk due to increased risk aversion. The board of directors will acknowledge that risks are internally inherent in any firm and often create long-term value to its shareholders. The board of directors must, however, always be optimistic when evaluating new opportunities.

2.5.4 Succession

Most firms would agree that future succession planning is of significant importance. Most directors acknowledge the importance of succession planning and admit that more needs to be done by a firm's board to establish an accurate process to ensure the continuation of competent leadership. The lack of readiness by boards when unpredicted changes occur in management, such as the resignation or change of a CEO, can influence the performance of a firm and usually alarms the market, diminishing the share price. All similar occurrences and changes in emergencies should be handled discreetly and effectively. Success is directly connected to the

overall performance of the firm and can only flourish when good governance and leadership are visible.

2.5.5 Sustainability

Directors have an obligation to increase and protect long-term shareholders' value and to ensure that short-term decision-making does not negatively influence the sustainability of the firm. In South Africa, the notion of sustainability is linked to the Constitution and affects every listed firm on the JSE (King II report, 2002). All forms of resources, whether it is financial, human, natural or social resources, are essential to value creation. The only way to ensure performance throughout in terms of value creation is if it can be accomplished in a sustainable manner.

The non-financial factors discussed in the sections above, in conjunction with financial performance, have an impact on the financial prosperity and sustainability of a firm. High turnover, good financial ratios and improving figures on financial statements, will only be feasible when non-financial factors such as proper leadership, risk management and sustainability plans are implemented. Various researchers regard firm performance from other angles and thus have different viewpoints measuring performance. In general, non-financial performance factors are difficult to calculate and compare.

Non-performance information is scarcely available and difficult to obtain. Comparing firms and sectors with each other will almost be impossible due to limited standardised non-financial measures that are available for comparison, as well as information that might not be accurate. In most instances this will not be the case with financial performance measures. In this study the focus was therefore solely on the financial performance of firms.

2.6 FINANCIAL PERFORMANCE

Financial performance can be defined as measuring the results of a firm's policies and operations in monetary terms. These results are reflected in the firm's turnover, return on investment (ROI), return on assets (ROA), earnings per share and various other financial measures (IBM, 2013). In short, financial performance is a measuring tool to determine how a firm utilises its assets when doing business to generate revenue. In general, a firm's overall financial health is measured over a given period of time, and

can be compared to similar firms in the industry or to industries in aggregation. In previous studies researchers utilised various financial measures and approaches in order to evaluate a firm's performance.

According to Carton and Hofer (2006), financial performance is a core element in empirical research. These researchers identified 88 different indicators to measure financial performance. These indicators were divided into three main sections, namely growth, profitability and market-based indicators. They stated that financial performance should be analysed by using more than one of these factors.

Ashley and Yang (2004:380) stated that management can gather useful information by examining the income stream of a firm, to determine the remuneration directors can receive. This information will also indicate performance measures that can be implemented to ensure growth and the sustainability of the firm.

A study conducted by Kato, Kim and Lee (2007:37) proved that accounting and sales measures did not have a significant impact on the setting of remuneration for directors in Korea. In Korea, the directors' remuneration was linked to stock market performance (shareholders' return) to ensure that directors act in the best interest of the shareholders. Using accounting and sales measures to determine financial performance is however a popular model which is used globally.

According to Basu, Hwang, Mitsudome and Weintrop (2004:70), growth opportunities and firm size need to be taken into consideration when assessing financial performance. The remuneration directors receive is then determined by their duties at the firm depending on the firm's size and growth opportunities.

Ruth (2005) concluded that a firm's share price is the most important factor for a shareholder. This important element will ensure that the remuneration directors receive is in alignment with the performance expectations set by the shareholders. However, it is vital to remember that the share price should not be seen as the only measure when determining the remuneration of directors, due to the fact that the share price can create long- and short-term performance opportunities that determine the sustainability and remuneration for directors.

Other measures like returns on assets (ROA) and earnings per share are also relevant when determining the performance of a firm. These measures were used in many similar studies due to the fact that they are simple to calculate and concise.

It is apparent that diverse opinions exist on how to evaluate and manage corporate performance, and no measure can be considered superior to the others. However, some measures are definitely more preferred and accurate for performance evaluation.

Venkatraman and Ramanujam (1987:109) stated that financial performance should be measured by only focusing on two factors: growth and profitability. Profitability measures include ROA, return on equity (ROE), and ROI, while growth can be measured by the growth of sales (turnover). In a related study conducted by Van der Linden (2007:21), the Du Pont analysis was used for financial performance measurement. The Du Pont analysis method, also known as the "Du Pont identity", was developed by the Du Pont Corporation in the 1920s. The Du Pont analysis estimates a firm's profitability by decomposing its ROE into a number of factors, and considering their contribution to the overall ROE. These factors are illustrated in the following equation:

ROE = Net Profit Margin × Total Asset Turnover × Equity Multiplier

Net Profit Margin = Net Profit/Sales

Total Asset Turnover = Sales/Total Assets

Equity Multiplier = Total Assets/Equity

The Du Pont analysis indicates that ROE is affected by three factors:

- Operating efficiency, which is measured by the profit margin;
- Asset use efficiency, which is measured by the total asset turnover; and
- Financial leverage, which is measured by the equity multiplier.

In the first part of the Du Pont model, the total asset turnover is multiplied by the net profit margin (this is also known as the firm's ROA). The total asset turnover reflects how effective the assets are being utilised in order to generate more revenue, while the net profit margin measures its operating efficiency. The last part of the Du Pont

equation looks at the degree of financial leverage, determining how the assets were utilised given the equity provided in the firm. Comparing a firm's ROE (and the components that contribute to its overall value) from one year to another or with other firms that operate in the same industry can be used to explain differences in the values of the ratio.

The Du Pont analysis provides a comprehensive measurement of financial performance, since important ratios are incorporated in its equation. This analysis is very helpful when a firm's ROE is unsatisfactory, since the Du Pont analysis can easily assist in locating the part of the firm that is underperforming.

The Du Pont model is considered as a reliable measurement tool to identify whether the performance of a firm and the remuneration of its directors are aligned, as well as the impact this measurement tool has when determining remuneration packages for directors. However, it is important that the correct balance of measures is used when evaluating a firm's performance. Accounting and market measures may possibly ensure that most factors influencing a firm's financial performance, directly and indirectly, are taken into consideration when evaluating its financial performance. Eriksson and Lausten (2000) agreed that a firm's performance should be measured using market indicators (e.g. share returns) and/or accounting earnings measures (e.g. turnover).

2.6.1 Accounting and market measures of financial performance

A firm's financial performance is of vital importance to all stakeholders, as performance also measures the firm's daily operations. Generally, a firm's performance is defined as operational effectiveness, and achieving economic goals and organisational survival tactics (Yuki, 1994).

To assess the financial aspects of a firm's performance, researchers usually apply accounting-based measures. These measures include profitability measures such as ROA, ROS and ROE. The relationship and differences between accounting-based and market-based measures can be defined as follows: accounting-based measures are a reflection of the past and short-term financial performance of the firm, while market-based measures focus more on the long-term and future performance of the firm (Hoskisson, Johnson & Moesel, 1994:1027).

Both accounting-based and market-based measures have certain advantages and disadvantages. Accounting measures are an effective way to compare consecutive yearly performances, identify trends and highlight problems. Information is readily available for accounting measures. Due to the uniformity of data presented in the financial statements along with a strict set of rules, and the application of generally-accepted accounting principles (GAAP), it is relatively easy to measure financial performance by means of accounting measures. Unfortunately, accounting measures only focus on a single limited aspect of a firm's financial performance. These measures might also be subject to managerial manipulation. For these reasons it is more effective to include market measures that cannot be as easily manipulated (Gentry & Shen, 2010:514).

Market-based performance measures also have positive and negative aspects associated with them. While market-based measures incorporate all relevant information when measuring the performance of a firm, it also limits the exposure to differential accounting procedures and manipulation. Market-based measures represent investors' evaluations of a firm's ability to generate earnings in future, rather than considering the past performance of the firm. Disadvantages regarding the use of market-based measures include the assumption that investors' valuation of a firm's financial performance is a proper performance measure in general. Some researchers remark that investors' evaluations may not be sufficient, especially when evaluating the entire firm. According to Farris and McDermott (2006), financial performance measures must:

- Align with shareholders' interest;
- Be clearly definable;
- Be easily measurable;
- Be controllable; and
- Be easily communicated and understood.

These criteria also assisted in assessing and selecting potential performance measures appropriate for this study. Joskow and Rose (1994) used both accounting- and market-based measures in their pay-for-performance relationship study.

Measures used in their study included total share returns (market-based) and sales (accounting-based).

Both accounting- and market-based variables are included in this study. Various types of accounting- and market-based measures are identified below to gain an understanding regarding the overall financial performance of a firm.

a) Accounting measures

Three accounting measures are addressed in the next sections.

(i) Return on equity (ROE)

Van der Linden (2007:21) used the Du Pont analysis in order to calculate the ROE for a firm. According to this approach, a firm's ROE is calculated by multiplying the ROA ratio with the leverage factor (total assets in relationship to equity). The Du Pont equation calculates the profitability and degree of financial leverage for the firm in a specific timeframe. This has an influence on the ROA ratio and influences the financial performance of the firm. This accounting measure could be helpful when determining a relationship between financial performance and directors' remuneration, since changes in ROA or ROE can be compared with the change in directors' remuneration for the same period.

(ii) Turnover growth

To ensure growth in turnover, a firm requires additional funding. More inventory and increased credit sales are usually the two factors that result from sales growth. Furthermore, to ensure turnover growth, firms must be willing to increase their overhead costs, which do not directly generate turnover, such as advertising, awareness campaigns and sponsorships (Joskow & Rose, 1994). It is important to acknowledge the availability of funding when determining the possible growth and performance of a firm. In a perfect world, increased turnover lead to larger profits, and ultimately increased remuneration of directors based on the improved financial performance of the firm. For this research study, the turnover of a firm was selected as one of the financial performance measures.

(iii) Price earnings ratio

The price earnings ratio is an equity valuation multiple and can be calculated by taking the current market price per share divided by the earnings per share (McClure, 2013). By analysing the market's valuation of a firm's shares relative to the earnings it generated, a firm with higher earnings growth usually has a higher price earnings ratio than a firm with low or no growth. When the price earnings ratio increases or decreases, it can be utilised to establish directors' remuneration.

These accounting measures are often focused on internal financial performance criteria, which can be partially influenced by management within a firm. When external and market factors have a significant impact on a firm, market-based measures may be more appropriate to use as financial performance measures.

(b) Market-based measures

Two market-based measures are addressed in the following sections.

(i) Market value added (MVA)

Stewart (1991:153) contended that market value added (MVA) is an appropriate market-based metric for ranking firms based on how much value they have added to (or subtracted from) their shareholders' investment. MVA measures the difference between a firm's fair market value (of its total debt and equity capitalisation) and the economic book value of capital employed in net assets (Venanzi, 2011:17). Increasing the MVA of a firm should be an important objective for any firm since it increases shareholders' wealth; however, most firms do not utilise the measure. According to Bistrova and Lace (2012), MVA is one of the ratios that directly influence shareholders' value, making the ratio relevant when determining the relationship between financial performance and the remuneration paid to directors.

(ii) Total share return (TSR)

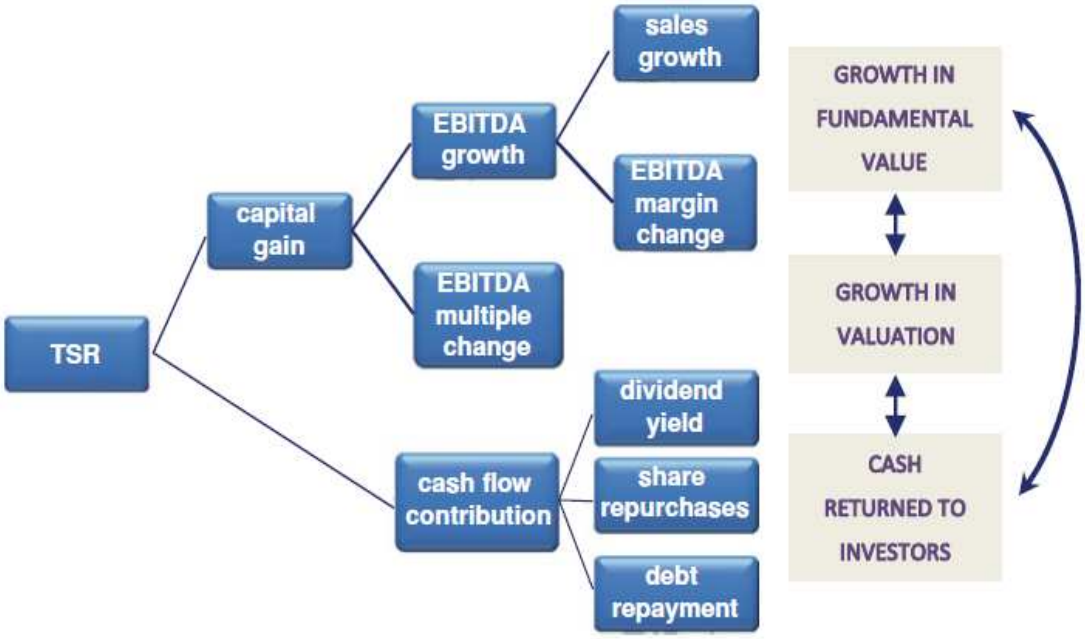
There has been an increased emphasis on market value measures as the most appropriate metrics for value creation. The Boston Consulting Group (2008) provided the following advantages of using TSR as a market-based measure:

- It incorporates the value of dividends and other cash pay-outs;

- It integrates all the dimensions of the value creation system; and
- The minimum appropriate TSR goal is easy to establish: it will be set by either the firm's cost of equity or the expected average TSR of its peer group.

The Boston Consulting Group (2008) designed an exhibit (Figure 2.1) that explains why TSR as a measure is so important when evaluating a firm's financial performance.

FIGURE 2.1: Financial components influencing the total share return (TSR)



Source: The Boston Consulting Group (2008)

Figure 2.1 illustrates all the financial components that are included when using TSR as a measuring tool of the financial performance of a firm. These components focus on the creation of shareholders' wealth and the growth of a firm.

Identifying and applying appropriate and effective financial performance measures may look like a daunting task, but are essential for accurate results. Therefore it is important that financial performance measures and incentives are selected that will support and be fair to both shareholders and directors.

2.7 CONCLUSION

The main purpose of management is to create shareholders' wealth in a firm, thus Chapter 2 commenced with a discussion regarding shareholders' value. The second

section of the chapter then identified all a firm's role-players (shareholders, stakeholders and management). These role-players all have different objectives and relationships, thus directing the study towards the stakeholder theory and the agency theory. This chapter continued to unravel the possible agency problem between management and shareholders by looking at the "carrot and stick" method.

Chapter 2 also investigated VBM, and discussed how this management approach could be applied to ensure sustainable value creation for the firm and all its stakeholders. It became evident that firms are shifting their focus towards the ideal of total value creation and sustainability rather than focusing solely on shareholders' value creation.

In order to measure whether there is a relationship, if any, between management's remuneration and shareholders' value, a set of appropriate performance measures had to be identified. Previous studies done in this field of financial management assisted in determining relevant financial performance measures. Two broad types of performance measures were identified, namely non-financial and financial performance measures. Financial performance measures are used in most research studies due to their availability, accuracy and comparison ability.

In this research study financial performance measures were used, and the relevant measures were identified and investigated. The selected financial performance measures were picked based on the criteria that both accounting and market measures for financial performance had to be included. The financial performance measures selected for this study were a firm's turnover, earnings per share (EPS), MVA and TSR.

Since only the relevant financial performance measures were investigated and identified in this chapter, the measurement of remuneration had to be addressed in the next chapter in order to achieve the primary objective set for this study, namely to determine the relationship between a firm's financial performance and directors' remuneration. Remuneration, more specifically directors' remuneration, is therefore the focus of Chapter 3.

CHAPTER 3: DIRECTORS' REMUNERATION

3.1 INTRODUCTION

Directors' remuneration has been in the limelight for the past two decades, especially following the global financial crisis that occurred between 2007 and 2009. However, the issue regarding directors' remuneration increased during the crisis when shareholders and other stakeholders noted the excessive remuneration directors received contrasted against the decrease in firms' financial performance. In South Africa, a few firms have been under scrutiny during the past decade. Examples include the power giant Eskom, and Sasol, a leading manufacturer of petroleum. Both cases resulted in an upsurge in media attention regarding the high incentive packages of their executive directors.

Fortunately, there are continuous improvement regarding regulations and legislation on remuneration for directors, and shareholders are becoming more aware and informed regarding their rights in this regard than previously (Morrissey, 2009:22). In South Africa, firms are regulated by the principle guidelines contained in the King reports. These principles assist firms in terms of corporate governance, disclosure and transparency. The Companies Act (2008) also assists in ensuring that firms are responsible and abide by the law in South Africa.

Chapter 3 commences by defining remuneration in general followed by a more narrow approach focusing on directors' remuneration. In order to define the remuneration for directors, remuneration strategies, structures, remuneration committees, financial disclosure as well as the psychological impacts around remuneration are addressed. This chapter concludes by discussing the relationship between financial performance and directors' remuneration.

3.2 REMUNERATION

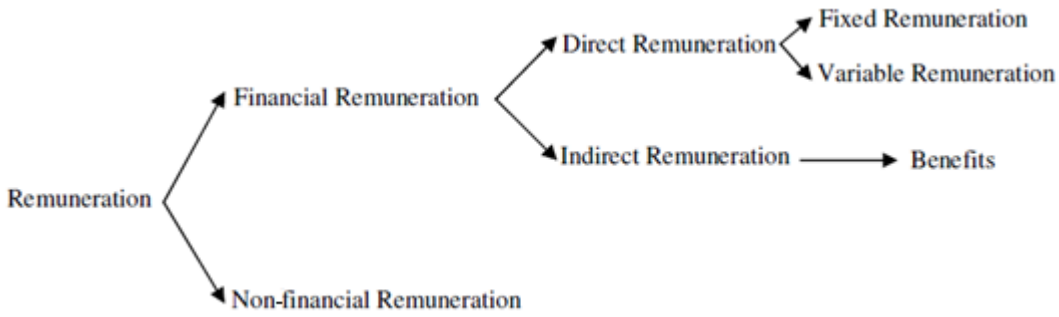
The term 'remuneration' can be defined as the reward for employment in the form of salary, payment or wages, and includes benefits and allowances such as medical, vehicle and pension, bonuses, cash incentives and non-cash incentives (*Collins English Dictionary*, 2009).

Remuneration schemes are the methods of payment available to firms and organisations by which they remunerate their employees. Remuneration schemes vary from fixed monthly or weekly wages, regardless of output, to payment for additional duties completed in a period. Different remuneration schemes are also used whereby a person is remunerated individually, compensation as a group (departments) or even the entire firm achieving targets as a whole. Levels of remuneration should be sufficient to attract, retain and motivate directors to run a successful firm. When focusing on directors, a significant portion of remuneration is usually structured towards individual or corporate performance (AECI, 2013).

The design of the remuneration scheme might directly influence the performance by the employees in the firm. Remuneration is therefore seen as a psychological motivator for employees to perform and ensure that firms are also sustainable (Rynes, Barry & Minette, 2004:381). The main concern regarding remuneration is that current incentives and reward strategies might be inadequate in the future when employees are continually raising their sights and higher remuneration levels are achieved (Ibbetson & Whitmore, 1977:12).

Figure 3.1 gives an overview of the concept of remuneration and its different categories.

FIGURE 3.1: The concept of remuneration



Source: Krauter and de Sousa (2009:165).

Figure 3.1 represents the components of remuneration. Considering remuneration and focusing mainly on the financial aspects, Figure 3.1 clearly indicates the sub-categories of which the total remuneration package might consist.

Dutra (2002:181) stated that financial remuneration (the compensation for a person's work) can be divided into two segments: direct and indirect remuneration. Direct remuneration focuses on the cash incentive received by an employee for work done. Fixed and variable remuneration fall in this category. All other benefits such as allowances are included under indirect remuneration.

Employee remuneration and benefits can be divided into four basic categories (Dutra, 2002:181), viz.:

- Fixed pay – cash reward paid to an employee by an employer based on an agreement between them. The most common form of guaranteed remuneration is the basic salary;
- Variable pay – cash reward paid to an employee by an employer that is dependent on performance, discretion, and results achieved. The most well-known form is a cash bonus;
- Benefits – programmes that the employer uses to improve employees' remuneration, such as paid leave, medical insurance, car allowance; and
- Equity-based compensation – a plan where the employer would use shares as incentives for employees. The most common example is share options.

In recent years, firms have also been incorporating non-financial rewards into the remuneration package for employees (Hanzlick, 2013:51). Career and professional development are two of the most crucial non-financial factors that are taken into account when setting the total remuneration package for employees.

All the remuneration types, as already mentioned above, can mainly be influenced by two types of factors, namely internal and external factors. Internal remuneration is influenced by business objectives, internal equity, labour unions, organisational structures and culture. Looking from the outside, external remuneration is influenced by the economy, inflation, unemployment rate, labour market, laws, taxes and industry trends (benchmark) and habits (Dutra, 2002:183).

Now that remuneration has been defined and the main categories thereof identified, the focus will shift more specifically towards directors' remuneration.

3.3 DIRECTORS' REMUNERATION

The remuneration of directors has been discussed widely in the past twenty years. The *Business Dictionary* (2012) defines directors' remuneration as follows:

> "Executives and non-executives may be compensated by salary, fee, usage of a firm's property and other benefits. Amounts for remuneration are usually limited not to exceed those specified in the articles of association, and shareholders may sue directors if they do not abide by the rules. Shareholders usually have a big influence (approval) on the remuneration paid to directors in the firm."

According to Section 66 of the Companies Act (2008) No 71, directors' remuneration is defined as:

- Fees paid to directors for services rendered by them to or on behalf of the firm, including any amount paid in respect of directorship;
- Salary, bonuses and performance-related payments;
- Expense allowances, to the extent that the director is not required to account for the allowance;
- Contributions paid under any pension scheme;
- The value of any option or right given directly or indirectly to a director, past director or future director, or person related to any of them;
- Financial assistance to a director, past director or future director, or person related to any of them, for the subscription of shares; and
- A loan or other financial assistance by the firm to a director, past director or future director, or a person related to any of them, or any loan made by a third party to any such person.

The term directors' remuneration is also used when executive and non-executive directors are remunerated by fee, basic salary or the use of a firm's property as agreed (*Business Dictionary*, 2012). The remuneration amount may not exceed the amount specified in the contracts and shareholders may oppose any amount that exceeds the agreed amount. Shareholders must always approve any remuneration paid to directors when loss of office occurs.

From an organisational perspective, it may be extremely difficult to remunerate a director solely based on the firm's financial performance. There are various external factors that may also influence directors' remuneration. Examples include benchmarking, market volatility and governance-related factors. Frequently in firms, directors will be remunerated with specific types of remuneration depending on the type of factors influencing the firm's performance as in the study of Stobaugh (2000) below.

Stobaugh (2000) identified eight major benefits that add value to the remuneration package, namely share grants or share options, which are seen as the most expensive benefit; retirement programmes; matching directors' gifts to universities and colleges; cash remuneration until retirement; grants to charity; medical insurance; payment of spouse's travel expenses and benefits paid in case of death or illness. Although this is already a large number of benefits, directors may receive additional benefits over and above those mentioned here.

Stobaugh (2000) wanted to emphasise that the total value of a director's remuneration package must be declared to the shareholders and that both directors' and shareholders' financial interests should be aligned to accomplish the firm's financial goals. Unfortunately directors' remuneration has been identified as a problem since the early 1990s. Shareholder groups suggested that there is no relationship between directors' remuneration and the firm's financial performance (Bebchuk & Fried, 2003). Since a firm's financial performance is not the only factor influencing the remuneration a director receives, it is important to identify and evaluate all other measures that might also play a part in remuneration decision-making.

3.3.1 Factors influencing directors' remuneration

Bender and Porter (2003) identified the following factors influencing directors' remuneration:

- Share gains and share options awarded to directors;
- Size of the board of directors in a firm;
- Role and importance of corporate governance in the firm;
- Executives' risk awareness or appetite;

- Future growth and opportunities for the firm;
- Benchmarks from the industry and market;
- Sensitivity to the current market and economic conditions;
- Remuneration committees' methods and consistency in selecting a remuneration strategy;
- Ownership in firms (directors' shareholding); and
- Influence of shareholders on the firm.

These factors may have a big influence when decisions about remuneration are made. The data gathered from these factors will ultimately provide the required results firms need to set the adequate remuneration package for directors. Although these measures are not the only factors that influence the remuneration of directors, they do provide sufficient evidence on how the remuneration model is composed for directors.

Factors influencing remuneration are divided into internal and external types as listed below (Aswathappa, 2005:278):

(a) Internal factors influencing directors' remuneration

The internal factors are addressed in the following sections.

(i) The influence of the size of the board of directors on remuneration

A study conducted in the United Kingdom and Japan indicated that a smaller-sized board of directors, in conjunction with using more non-executive directors, resulted in lower remuneration for executive directors. This study also revealed that where boards of directors owned more shares, the remuneration was seemingly higher. This also holds true when considering firms where family influences are high (Kubo, 2000:51).

(ii) Corporate governance and future opportunities

An academic paper presented by Ozkan (2005:15) confirmed that corporate governance does have an influence on directors' remuneration. Larger firms with more growth opportunities remunerate their directors more than average firms. The study also revealed that firms with more non-executive directors are willing to remunerate with cash salaries rather than equity.

(iii) Committees influence tailoring risk-adjusted incentive remuneration packages

According to Lipman (2010:55), there are two categories of risk-need assessments when setting performance remuneration for directors, namely accounting risk and structural risk. Before discussing these two risks, firms need to acknowledge whether they are rewarding directors for risky behaviour or not. To determine this, the risk managers of the firms should be consulted before deciding on any remuneration packages.

When considering accounting risk, firms should be careful when implementing performance contracts that are based on bonus pay-outs. In prior instances where accounting fraud occurred, the problems were only noticed years later. In general it is difficult for firms to retrieve their money from directors, even if “claw-back” policies are included in the contracts. To prevent occurrences like these, better planning is needed to ensure the sustainability of firms. Setting risk periods and withholding bonuses for a time period, or creating deferred bonus plans, can assist in this matter before directors are remunerated.

The second risk is structural risk where all non-accounting risks are used to adjust directors’ remuneration towards firms’ financial performance (Lipman, 2010:55). Turnover and services rendered often contain hidden risk factors. An example is credit sale transactions that influence the turnover and are used to evaluate the firm’s performance and may influence directors’ remuneration. In later years, the financial statements may be adjusted for income not received. This means that at the time of acknowledging the sales, the directors received remuneration for future cash inflow that did not realise, meaning directors’ remuneration did not contain the risk factor of this risk realising.

As mentioned earlier in the discussion on accounting risk, the bonus paid to a director must be delayed until the risk period is over, or the risk factor should be incorporated when the performance bonus is structured. Lipman (2010:56) stated that a five-year risk period will be a sufficient time period to take the risk into consideration before rewarding directors for their performance. This will mean that directors will be remunerated in year six for year one’s performance, and year seven for year two, and

so forth. Lipman (2010:56) also suggested three action plans. Firstly, that remuneration models should include the risk and long-term stability of the firm; secondly, that boards of directors should assess remuneration policies regularly; and finally, that the timing of firms' financial performances should be aligned with the incentives paid to directors.

Research conducted in Japan indicated that directors' remuneration is designed and structured to create value for shareholders. It was also noted that no share options were used in this regard to remunerate directors for the increase in the firms' financial performance (Kato, Lemmon, Luo & Schallheim, 2005:460). There are, however, external factors also affecting directors' remuneration.

(b) External factors that influence directors' remuneration

To eliminate unnecessary problems regarding unfair judgment of directors' remuneration, a few external factors should be taken into consideration (Lipman, 2010:57). Firstly, proper market data should be compiled to evaluate directors' long-term risk-taking standards in similar firms; secondly, remuneration benchmarks are needed in the industry; and thirdly, the directors' employment contracts need to be evaluated. Benchmarking against other firms has become a popular method to ensure proper management and performance, but it is not always the case that the benchmark is set correctly in the industry. To provide a better understanding of the concepts, benchmarking and remuneration contracts are explained as follows:

(i) Benchmarking

Benchmarking is probably the most popular method globally when setting directors' remuneration. According to Garvey and Milbourn (2006:224), benchmarking is extremely popular in specific industries like the Industrial and Financial Sector, where benchmarks are set rather high. Consistency is crucial when selecting external benchmarks, but in order to ensure that the firm's financial performance and directors' remuneration are still aligned, is also critical. In examples where the correlation between the firms' financial performance and directors' remuneration decreases instead of increases or the relationship between firms' financial performance and directors' remuneration is negative, problems might occur due to focusing on benchmarks and not on the firms' performance.

When firms decide not to use the benchmarking method due to the expensiveness or impracticality of the method, firms should always try to be consistent with remuneration decisions even though markets may fluctuate up or down (Garvey & Milbourn, 2006:224). Consistency often ensures that directors have more to gain in markets that are tumbling than in markets that are rising under certain circumstances.

(ii) Remuneration contracts

According to economic literature much has been written on the topic of designing an optimal directors' remuneration contract (Bebchuk & Fried, 2006; Conyon, 2006). The importance of a contract derives from shareholders that monitor directors by means of remuneration for work or services rendered relating to financial performance. Contracts in general ensure that directors act in the best interest of the shareholders (Rosen, 1992:181). Jensen and Murphy (1990:225) argued that firms should create a contract that link directors' remuneration to share market performance (shareholders rate of return). Adequate remuneration contracts in general should encourage directors to act in the best interest of shareholders.

Although each sector and every firm within that sector have their own view, the model and structure regarding the calculations for directors' remuneration, general standard benchmarks and similar firms' contracts are good indicators of proper remuneration paid to directors. Generally, internal and external factors influence firms' considerations when the overall structuring of directors' remuneration packages takes place. These internal and external factors that are used to determine the remuneration for directors can also negatively influence the perception around directors' remuneration.

3.3.2 External and internal factors responsible for directors' remuneration status

As mentioned earlier, it is impossible to ignore the controversy regarding directors' remuneration compared to firms' financial performance as well as to read a financial magazine or a paper without noticing what large remuneration packages directors are earning.

Stakeholders allege that directors are over-compensated, thus suggesting directors' remuneration is not in line with the firms' financial performance. Furthermore the gap

between directors' remuneration and the financial performance of the firms appears to be continuously widening (International Labour Organization, 2008:20). According to Graham, Roth & Dugan (2008:6), there are ten factors that contribute to directors' over-compensation. These factors are discussed in the following sections.

(a) Directors in the media

Cashing lavish pay cheques and multi-million Rand share options that the media just cannot wait to report on, are a major cause of the perception that directors are over-compensated, especially now that firms are becoming more transparent and financial statements are so easily attainable to anyone. Often, the media only focuses on the directors' remuneration and rarely takes factors such as firm size, turnover and firm growth in relation to the remuneration into consideration.

(b) The economy

Firms that implemented the pay-for-performance strategy did not specifically stipulate that the financial performance should be linked to the directors' performance, and not the overall performance of the economy. Frequently, firms do extremely well but not due to improved management strategies and tactics, but rather due to the economy or a certain industry that performed well. Nevertheless, the directors still claimed their performance pay and bonuses. These types of occurrences have an immense influence on over-compensation that occurs in some firms (Morgenson, 2013).

During the global financial crisis of 2008, the interest in executive remuneration intensified due to the decrease in shareholders' wealth and poor performance of the firm. Demands were made by shareholders to adjust directors' remuneration to be aligned with the firm's financial performance during periods of economic difficulty, but firms differed in this regard and some even continued to increase the remuneration as usual.

Faulkender, Kadyrzhanova, Prabhala and Senbet (2010) had concerns regarding the structure of directors' remuneration packages especially after the dot-com crisis and the 2008 global financial crisis period and proposed a revision with regard to the size and structure of executive pay plans.

(c) Economists

Economists started to analyse directors' remuneration by developing models to understand the compensation directors receive. In these models a few factors such as talent and skills of the directors, firm size, and earnings on market capitalisation were taken into account. These models then started to justify the remuneration in an unfair manner and added to the over-compensation problem (Faulkender *et al*., 2010).

(d) Government and selected government agencies

The government never identified share options as an expense, but as capital to protect the stakeholders with the necessary laws and regulations to prevent unrealistic taxable earnings out of these options. The general accounting system and the lack of disclosure of share options and share gains in the past have been identified as some of the biggest contributors to over-compensation, adding to the outrage against excessive directors' remuneration.

(e) Board of directors

The board of directors has the power and responsibility to decide and manage all the remuneration and management actions of a firm. Boards thus play an important role and need to be pro-active at all times. If not, they can be seen as the source of over-compensation.

(f) Stakeholders

Stakeholders need to stand up and protest for what they believe in. When investors and buyers are not happy with how things are executed or handled in a firm, the stakeholders need to stop supporting these firms.

(g) Institutional investors

Institutional investors, like big pension and mutual fund managers, often do not play an active role to prevent the over-compensation of directors in the firms that they invested in. They need to first and foremost look at the interest of their shareholders.

(h) Lawyers

In most prominent cases where directors were allegedly over-compensated, a lawyer was involved to assist his/her client to secure the best deal, no matter what the effect would be on other shareholders and stakeholders. Although lawyers' involvement is not blamed directly, the lawyers themselves benefit from this dilemma.

(i) Human resource departments

Human resource management needs to be transparent in everything they do and carry the responsibility not to hide information from the board of directors and stakeholders' committees. Too many incidents occur where a lack of transparent information was provided to committees regarding remuneration packages for directors.

(j) Consultants

The biggest problem with external consultants is that they are "blind" to see what is happening in firms. It appears that a conflict of interest for consultants can play a big role in the decision-making regarding directors' remuneration.

To conclude, it can be assumed that there is enough blame to place on many role players. In some instances, directors' remuneration is allegedly aligned or linked to firms' performance, but when investigating the financial performance of the firm, the results do not always correspond with how the directors are remunerated.

All the role players and factors mentioned in the preceding discussion influence directors' remuneration directly or indirectly. A proper remuneration strategy is needed in every firm to justify and balance the total remuneration package paid to each director.

3.4 REMUNERATION STRATEGY

The need for a strategy and systems for remuneration has never been greater than now. Remuneration never stands alone, but is included in other management processes, such as the performance management process, the overall policies and the integrated plan of a firm. In order to develop a comprehensive remuneration strategy, various factors and requirements need to be identified.

3.4.1 Total rewards strategy

According to Graham *et al.* (2008:67), there is no simple one-size-fits-all strategy in terms of total remuneration rewards. This makes strategising very challenging due to the uniqueness of each firm. To ensure that a firm's reward strategy works well, much tailoring and alterations are needed. Therefore it is important to understand the specific business remuneration components, as well as how the firm's performance management operates, in order to develop the optimal strategy.

A reward strategy generally consists of three core factors namely vision, mission and values (Owen, Mundy, Guild & Guild, 2001:10). These factors will assist in clarifying misconceptions regarding the remuneration and the firm's financial performance.

(a) Vision

A vision statement enables a firm to plan for the future and set realistic goals to achieve. Even with a good vision statement obstacles and challenges occur that the directors should be able to deal with, therefore the vision must inspire directors to take proper action even if it affects them personally.

(b) Mission

Purpose and values are the core aspects when identifying the mission of a firm and should always remain permanent, even though strategies might be adjusted to meet requirements. The mission statement guides the firm to be sustainable and take responsibility in everything it does. Therefore, a mission must be simple and state a positive, clear view. Motivation plays a vital role to apply what the mission statement requires on a daily basis, and highlights the importance of remunerating directors for following the mission set for the firm.

(c) Values

Beliefs and values are at the heart of the firm. Although there is no fixed set of rights and wrongs, it enables the firm to set boundaries and develop core values for themselves. Values ensure that directors focus on the core vision and business decision-making. Firms known for having good values often force their management

to maintain the firm's good reputation, thereby decreasing the possibility of directors making decisions to potentially benefit themselves.

The problem with all three of these factors is that it is somewhat difficult to always link the vision, mission and value principles to directors' remuneration, since the vision, mission and values in some firms' statements are generally poor and misleading (Graham *et al.*, 2008:72). Therefore it is suggested that specific remuneration requirements are determined for setting remuneration packages in firms.

3.4.2 Remuneration requirements

High remuneration rewards have been given to directors since the early 1990s. The question still being asked after more than two decades, however, is whether or not the directors' remuneration is justified by the firms' financial performance. There is much speculation on this subject, due to the fact that the entire remuneration process is not as transparent as shareholders would like it to be. Deciding what the remuneration should be is a more complicated issue than what the media, for instance, makes of it.

Magnan *et al*. (2009:28) recommended the following requirements in terms of directors' remuneration to ensure sound performance and top-quality directors:

- Director remuneration must be satisfactory to attract high calibre directors to the firm. The remuneration must also be in line with the responsibilities and accountability required for the position;
- When setting the remuneration package for the directors, the decision-making must be transparent with the correct objectives in mind. Having clear benchmarks to use as an indicator may be of good use for the firm;
- A large portion of the remuneration package should be kept as long-term remuneration for directors to ensure the sustainability of the firm; and
- Remunerating directors must be based on the long-term goals of the firm, and not only on short-term success; this helps reducing the risk factor when striving to increase the firm's performance.

After identifying requirements for directors' remuneration, the process for structuring and compiling the optimal remuneration package can commence, since the

requirements set are seen as a foundation on which the remuneration structures are constructed.

3.5 STRUCTURING DIRECTORS' REMUNERATION

When compiling the directors' remuneration, all the sub-components of the entire package must be identified individually and those affecting the compilation of the package should be addressed. Furthermore, the different types of directorship also play a vital role when structuring an adequate remuneration package. This highlights the importance of compiling the most appropriate remuneration package for each director (Design of directors' remuneration packages, 2010).

3.5.1 Establishing the remuneration package

Throughout the decades, firms have revised their strategies to optimally remunerate directors as well as to ensure firms' financial performance (PwC, 2011). Additions to improve this relationship included setting remuneration committees, adding non-executive and independent directors, adapting the governance process, share ownership guidelines and fees for attending meetings. The question, however, still remains how firms should determine directors' remuneration and whether a relationship, if any, exists between firms' financial performance and directors' remuneration.

How much and how do firms remunerate directors? According to DeFond and Hung (2004:269), directors' remuneration must be determined by considering the directors' roles in the firm. They identified three roles, namely monitoring, strategic resource and fiduciary.

(a) Monitoring

Monitoring is one of the core responsibilities of the board of directors (PwC, 2011). All decision-making by management that may have an impact on the firm or shareholders must be monitored by the board of directors and remuneration committee. It is important to ensure that directors are adequately remunerated when performing well – either by basic salary, share options or other incentives to promote effectiveness and growth for the firm. Share options are generally used for long-term growth and are critical for investors to ensure long-term sustainability. Firms should always be cautious

when setting performance-based remuneration. Directors might start taking unnecessary risks by engaging in speculative and manipulative behaviour. Situations as mentioned above may lead to conflict of interest as discussed in Section 2.2 of Chapter 2.

(b) Strategic resources

In modern times, firms acknowledge directors as valuable resources for a firm. Directors have business and political connections, experience, unique expertise as well as good reputations that increase the credibility of firms and, in effect, increase value for shareholders. Firms can therefore not only remunerate directors by analysing and monitoring the firm's financial performance, but need to evaluate the directors as valuable resources and assets of the firm (Coombes, 2008:70).

(c) Fiduciary role

Preventing fraud and promoting proper risk management are only the tip of the iceberg when considering directors' legal duties and obligations. Currently, directors' responsibilities are rapidly expanding, and they are held more accountable for the financial resources of shareholders than ever before (PwC, 2011). In this respect, the directors' remuneration should also be evaluated by measuring the fiduciary duties and responsibility they have in a firm.

A recent study conducted by PwC (2012) states that most firms only focus on the monitoring aspect when setting the remuneration package for directors. Although there is no denying that directors should always act in the best interest of the shareholders by spending time and effort to ensure good governance together with monitoring management, other factors as mentioned above in Chapter 3 also play a vital role in setting accurate and adequate remuneration packages for directors (Le Blanc, 2004:1). Furthermore, it is important to identify all the remuneration sub-components when conducting remuneration package structuring for directors, since this enhances transparency in the firm.

3.5.2 Directors' remuneration sub-components structure

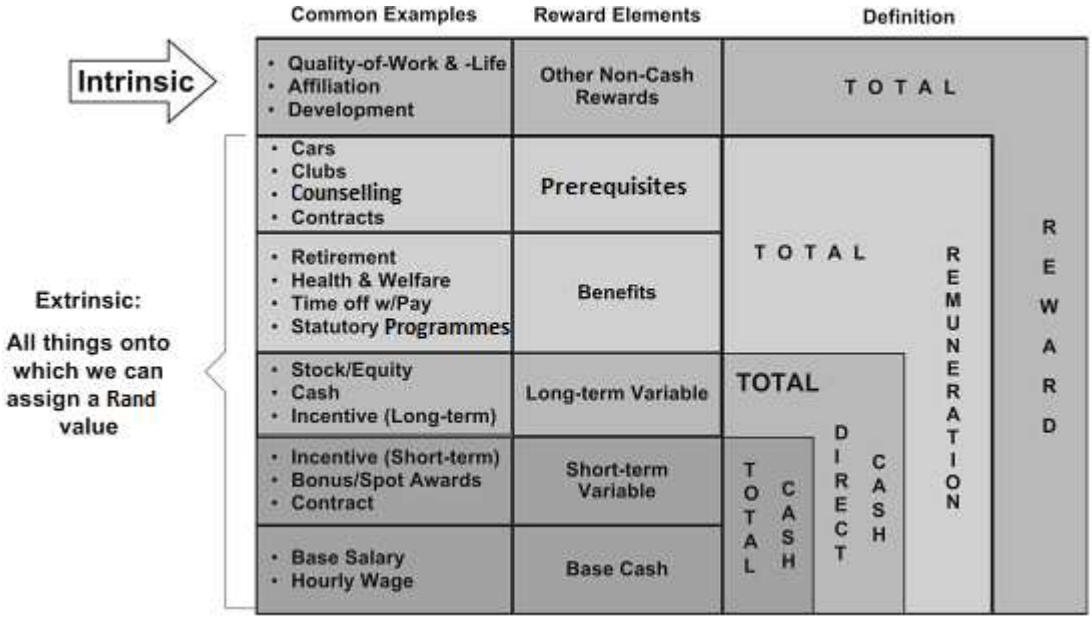
Many firms approach directors' remuneration packages on the basis of a 'total remuneration' package, instead of focusing on each sub-component individually

(Ebert, Torres & Papadakis, 2008:11). While cash incentives are important, it is not the only sub-component when remunerating directors. Various other sub-components also contribute towards the total remuneration package.

Within the financial remuneration structure for directors, the direct financial remuneration is split into two types, as illustrated in Figure 3.1, namely fixed and variable remuneration components. The composition ratio between these two types of direct directors' remuneration differs from individual to individual. Generally the variable portion is more short-term-based when designing the remuneration package.

Figure 3.2 clearly illustrates what a director's full package may consist of. When compiling the remuneration package, every category forming part of the overall remuneration package, is identified. Figure 3.2 is a good starting point for this study, since all the important remuneration sub-components are mentioned.

FIGURE 3.2: Directors' full remuneration package possibilities



Source: Adapted from Manas (2000:220).

Figure 3.2 illustrates the various possibilities of selecting sub-components to create a remuneration package best suited for individual directors. It must be noted that for this research study the main focus was on total remuneration. Non-incentive rewards were thus excluded and the focus was not placed on the total rewards package, but the total remuneration package received (extrinsic values).

Since various sub-components are added together in order to create the total remuneration package, the most important remuneration sub-components need to be identified and discussed. The four sub-components considered in this study, namely basic salary, bonuses, share gains and other incentives are discussed in greater detail in the following sections.

(a) Basic salary

According to Graham *et al.* (2008:250), the basic salary component is most probably the one sub-component that is regarded as the biggest problem by stakeholders and forced many firms to rethink and adjust their remuneration strategy to a more performance-based one. In general, shareholders feel that directors are being over-compensated in terms of their basic salary. The size of a firm usually influences the basic salary directors receive. A firm's growth and turnover also influence directors' remuneration. New proposals however suggested that remuneration should be determined by the market value of a firm instead of its turnover.

According to Linger (2013) firms devote little attention in calculating the base salary sub-component of the remuneration package. Many firms only use the current benchmark in the sector when it comes to base salaries because it is the easiest way to set a market-base salary.

(b) Short-term incentives

Short-term incentives are generally implemented for a period no longer than a year and are performance-driven to motivate directors. This type of incentive plays a vital role when base salaries are not important. Performance-based incentives can be for the individual director or for the entire board of directors to ensure that the firm moves forward, growing and performing at its best. Van den Linde (2009:15) contended that although remuneration is not always linked to market fluctuations, the directors should at least be remunerated by means of a (short-term incentive) performance bonus, when the firm's performance and growth increase.

Firms use short-term incentives to achieve short-term objectives and to focus on important areas. By implementing an effective short-term remuneration reward strategy, the directors are motivated to advance much faster to achieve goals which are set for the short term.

According to Graham *et al.* (2008:266), short-term incentives can be divided into the following three sub-components:

- Discretionary: Directors are rewarded for past behaviour and the incentives are not fully linked to a motivation reward;
- Pool: Directors are remunerated with a percentage of performance in a project. This type of incentive is very popular and self-explanatory. The better the director performs, the bigger the bonus will be; and
- Target: Directors have been given set measures regarding performance that need to be achieved. This type of incentive can be combined with discretionary and pool incentives.

These three forms of short-term incentives are implemented to ensure that directors increase the firm's financial performance and in return receive remuneration for achieving the stated objectives.

(c) Medium-term and special incentives

These types of incentives are implemented relative to a three- to five-year timeframe, usually in those cases where directors are remunerated for achieving goals set for a comparable period. Although most firms classify these incentives as long-term, it is actually incorrect, because a period of five years is generally a relatively short period of time compared to the entire lifetime of a firm. The medium-term timeframe is usually used to execute business plans and increase effectiveness and efficiency in the firm itself. Directors usually do not focus much on this timeframe as it falls between the short- and long-term views. It may however still be important to use medium-term incentives in order to ensure that directors pay attention to this time period in the firm's lifespan (Graham *et al.,* 2008:252).

(d) Long-term incentives

The duration of long-term incentives falls within the five- to ten-year bracket of the firm's lifetime. These long-term remuneration incentives are classified as the most important incentives paid to directors, since it promotes continuous sustainability and secures the longevity of a firm (Graham *et al.,* 2008:252). At present, share options, an important example of a long-term incentive, are regularly associated in the media

with being corrupt. When directors receive share options, they could be tempted to immediately start to capitalise the capital of the firm back into the share price and immediately increase their own benefits. Shareholders would then lose value by receiving fewer dividends, thus less return on their shares. Above all, directors usually prefer this timeframe due to the fact that they have sufficient time to implement and witness the results from strategies and business models developed in the firm (Graham *et al.*, 2008:253).

It is crucial that firms link the correct objectives and their timeframes with the most suitable remuneration sub-component in order to achieve the firm's long-term financial objectives. The following factors need to be investigated when structuring the long-term incentives for directors to ensure that the firm's long-term objectives are sustainable:

- Directors' interest is aligned with those of the stakeholders, linking remuneration with performance;
- Directors are attracted and retained to ensure sustainability of the firm;
- Long-term thinking is endorsed with long-term plans;
- Long-term success of the firm is shared with the directors; and
- Wealth accumulation programmes are created as long-term incentives.

Firms' financial objectives can be achieved when using long-term incentives. One of the most popular long-term incentives for directors is share options or share gains. In various countries qualified incentive share options and non-qualified share options are used by many firms as an equity remuneration type for directors to motivate them to perform in the shareholders' best interests (Design of share incentive plans, 2010). The qualified share options provide tax benefits, but also contain complicated tax consequences. In South Africa the non-qualified share options have the disadvantage that taxable income is stated at the time non-qualified options are exercised whether the shares are sold or not. Moreover, the income from these share options may be taxed as ordinary income and not as long-term capital gains (Sigler, 2011:2).

Equity-based remuneration is most often used to ensure long-term firm performance. Share options are the most popular sub-component used by firms as a remuneration tool. According to a study by Magnan *et al*. (2009:28), equity-based remuneration

translates into value creation and the overall performance of a firm. This is mainly achieved by increasing the directors' focus on the monitoring aspect in the firm. Clementi, Cooley and Wang (2006:2213) also identified share options or any share gains as a commitment device. This raised the issue about the risk appetite of the director when selecting projects and comparing risk to the remuneration received for the financial performance results.

Other studies have shown that executive share options reduce excessive risk aversion by giving the directors an incentive to increase the firm's risk by accepting risky profitable projects instead of avoiding them (Sigler, 2009; Grasselli & Henderson, 2009). Risk is one way to increase the value of share options, thus increasing the volatility of a firm's profits and performance.

Within the different time periods, namely short-, medium- and long-term, there are different types of incentives used to remunerate directors. There are however other incentives that are not fixed to a time period, or just added perks a director might receive. These other forms of incentives are discussed below.

(e) Other incentives

In this study, directors' remuneration was divided into four sub-component categories, namely base salary, bonuses, gains on share options or share gains and other remuneration. As part of other remuneration, items like medical aid, pension contributions, travel and cell phone allowances and car allowances are included. These are only a few general examples of items that will be classified as part of the other incentives a director could receive. Some firms try to combine some of these incentives with the performance of the firm. One such example, where firms try to apply this method by linking an incentive for the individual towards the financial performance of the firm, is the retirement fund contribution. In the example below, the individual refers to an executive director.

(i) Retirement fund incentives

In general, retirement plans are not connected to the financial performance of a firm, but constitute a large part of the remuneration directors receive. Graham *et al*. (2008:233) developed a performance-based wealth accumulation programme. This model measures sustained performance over the long term when contributing to a

director's retirement fund. Models like these usually have termination penalties to prevent a director from leaving before the contract expires. Firms want directors to tie their own long-term success to that of the firm.

(ii) Additional forms of incentives for directors

Director remuneration does not only come in the form of money or equity. Being a director of a specific firm may also enhance the reputation of the director. Directors build networks and create opportunities; they have more social interaction with each other; they gain knowledge about specific markets and sectors to create value and have the use of the firm's workforce and other resources at their disposal. All off these are examples of non-financial incentives and in most instances may exceed the normal remuneration indicated on the financial statements of the firm (Magnan *et al*., 2009:30).

All the sub-components of directors' remuneration combined create the total structured remuneration package of directors. It is important that the remuneration package as illustrated in Figure 3.1 is balanced and properly structured to promote the best financial performance for the firm. This will mean that directors are properly remunerated for achieving the firm's objectives, thus attempting to ensure that a positive relationship exists between directors' remuneration and firms' financial performance. As discussed later in this chapter, the remuneration committee of a firm will play a big role in ensuring that directors' remuneration and financial performance are linked. It must be noted that this study will solely focus on the remuneration package and not the total reward package for directors. The difference was clearly explained at Figure 3.2 earlier.

Structures and models used by firms may vary from time to time, especially depending on the economic climate. Financial crisis, hyper growth periods and other external factors may influence remuneration package structuring directly or indirectly. It remains important to see what impact some of these external factors may have when structuring and setting directors' remuneration packages. External factors may easily influence a firm's financial performance. Unfortunately directors can do little to influence these external changes in the markets, especially in economic downturn periods.

Three issues regarding the composition and structuring of directors' remuneration, which in most instances lead to agency problems, are discussed below. The first issue

is remuneration during a period of global financial crisis. A previous study conducted in United Kingdom by Gregg, Machin and Szymanski (1993:255), indicated that even during global financial crisis periods, directors received high remuneration irrespective whether their firms performed or not. This was a big concern for shareholders and other stakeholders. The general view is that firms will not lower the remuneration of directors in global financial crisis periods, but can easily increase these remuneration packages during boom periods in the economy.

The second issue arises from remuneration sub-components. All incentives are not always appropriate for directors and a firm's financial performance. All the sub-components mentioned in the previous sections (cash, bonus incentive plans, share options and share gains) may lead directors to engage in activities that create enormous problems and risks for the firm. Undesired behaviour may be encouraged when rewarding directors with cash bonuses. Examples include accounting manipulation to maximise pay-outs to directors, as well as only focusing on short-term goals, which is detrimental to the long-term sustainability focus of the firm (Gregg *et al*., 1993:256).

The third issue is that remuneration by means of share options or share gains for directors may not necessarily increase the efforts of directors to improve the financial performance of the firm. Share gains and share options may increase or decrease due to market fluctuations, but the directors are rewarded by the changes in the share price. This could suggest that directors are not working as hard, owing to the fact that the market forces may work for them (Gregg *et al*., 1993:256).

The bundling of the different sub-components of remuneration into a complex remuneration package for directors allows the shortcoming of one element to be offset by the strength of another. It is thus important that a proper evaluation of the firm's financial performance and directors' performance is conducted accordingly to ensure that the appropriate remuneration structures are set (Sigler, 2011:4).

The previous sections primarily focused on executive directors, who are directly involved in managing the firm and its daily business. The following section will shift the focus to non-executive directors, investigating their roles, responsibilities and how their remuneration structure works.

3.6 NON-EXECUTIVE DIRECTORS' REMUNERATION

Non-executive directors are seen by investors and the media as people who protect shareholders' interests in the firm. Furthermore non-executive directors need to be devoted to sufficiently fulfil their responsibilities. Non-executive directors are remunerated for services rendered, responsibilities held and the role non-executive directors generally play accordingly. Thus non-executive directors in general do not receive basic salaries, bonuses or share options and grants as in the case of executive directors (Davies, 2000:11).

The level of remuneration is generally determined by the non-executive director's role, time commitments and responsibilities in the firm. The various forms of remuneration paid to non-executive directors can be divided into the following categories (PwC, 2009):

- A basic fee;
- Fees for responsibilities such as chairing a committee;
- Committee membership (e.g. remuneration, nomination or audit committee); and
- Attendance fees (meetings).

Non-executive directors' fees may also be benchmarked against similar firms, where time commitments, roles and responsibilities are comparable (Out-Law, 2013). Normally, the directors' knowledge, experience and skills are used to effectively help the firm to grow and perform.

At this point, both executive and non-executive directors' remuneration has been discussed. The focus now needs to shift towards the remuneration committee, since the appropriate remuneration paid to all directors is determined by this committee. Therefore, in the next section the importance and responsibility of a firm's remuneration committee follows.

3.7 REMUNERATION COMMITTEE

The importance of a remuneration committee has grown significantly over the past few years. This is because the corporate governance requirements regarding directors'

remuneration became instrumental in setting and managing remuneration. According to PwC (2009), the remuneration committee plays a far bigger strategic role than imagined. In the past the committee only dealt only with legal matters, especially with the disclosure of remuneration. Currently, the committee is also very much part of determining the structure of remuneration.

According to PwC (2009), a remuneration committee's responsibilities include:

- Regulating and approving the firm's remuneration policy;
- Setting and preparing the annual remuneration report;
- Reviewing the performance and approving annual total remuneration packages (guaranteed pay; short- and long-term incentives);
- Determining and setting performance measures for incentive plans; and
- Communicating with shareholders on directors' remuneration.

The above-mentioned responsibilities are not the only duties of a remuneration committee, but they are identified as the core key performance areas for the committee. According to Sigler (2011:5), a remuneration committee's responsibilities are defined by governance rules, and consist of the following:

- Assess and approve corporate goals and objectives relevant to directors' remuneration;
- Evaluate the performance of the directors with regard to the above goals and objectives;
- Determine and approve, either as a committee or with other independent directors, the remuneration levels on the basis of this assessment;
- Make recommendations to the board of directors with respect to non-executive directors' remuneration, incentive plans and equity-based plans; and
- Produce the report on executive remuneration required to be included in the proxy statement.

According to the governance rules prescribed by the King Committee on Corporate Governance (2002), a remuneration committee must have the sole authority to preserve, dismiss and reward a consulting firm to assist in evaluating a director, CEO

or any other senior executive's remuneration. Another important factor the remuneration committee must see to is the disclosure of directors' remuneration, which is cohesive with the King II report principles and good corporate governance guidelines as prescribed in the King Committee on Corporate Governance (2002).

3.8 DISCLOSURE OF DIRECTORS' REMUNERATION

According to Section 30 of the Companies Act (2008), information regarding the remuneration paid to directors should be disclosed in the annual financial statements of a firm. The Companies Act (2008) differs from the previous Companies Act (1973) in mainly three areas with regard to directors' remuneration. Firstly, the Companies Act (2008) requires disclosure on an entity basis (not collectively); secondly, disclosure of previous directors' remuneration is required; and lastly, the remuneration of all prescribed executives must be disclosed. The King reports and good governance principles are thus important tools to ensure proper disclosure in a firm.

The agency problem led to a growing distrust and scepticism towards firms' executive directors, which resulted in the development of corporate governance principles (McConvill, 2001:4). The King Committee on corporate governance was established in 1993 to promote good corporate governance. An improvement in corporate governance requirements can improve the link between executive directors' remuneration and a firm's financial performance (King Committee on Corporate Governance, 2002). The King II report (2002) stated that performance-related elements of remuneration should constitute a substantial portion within the total remuneration packages executive directors receive. The King II report also stated that a formal and transparent procedure for developing a policy on all directors' remuneration should apply. This should be supported by a remuneration viewpoint in the annual report.

In addition to the requirement that the normal remuneration of prescribed directors be disclosed in the financial statements, the Companies Act (2008) also obliges the disclosure of other remuneration received by executive directors. Furthermore, the Companies Act (2008) requires approval by special motions when the firm plans to issue shares to executive directors as well as when the firm renders financial assistance to executive directors. The Companies Act (2008) also calls for disclosure in the annual financial statements on an individual basis of remuneration paid to

directors. Executive and non-executive directors need to be informed of the fact that their remuneration will be disclosed.

According to Bussin, Blair and France (1998), failure to disclose over the past few years has resulted in increased pressure on firms to get their corporate governance in order. The King II report required firms to disclose the necessary information as prescribed in the King II report (2002) ensuring proper transparency regarding directors' remuneration. The problem emerged that if a firm disclosed all its remuneration information, the firm may in effect lose its competitive advantage by revealing it to the general domain. In this argument, the question about where the balance lies between transparency and a competitive advantage becomes important.

Bussin *et al*. (1998) identified the following requirements when a disclosure strategy is planned to ensure that a firm's competitive advantage regarding the remuneration strategy remains intact:

- The remuneration report should include the firm's policy regarding directors' remuneration;
- A detailed performance summary with share options and long-term incentives for each director must be included;
- The selection of specific performance conditions must be justified;
- Methods to determine whether performance targets are met and motivations why these methods are selected, should be identified; and
- External factors that may influence the performance conditions of firms in an industry should be identified.

These requirements could hold negative consequences for a firm. If a firm discloses its entire remuneration policy it will lose its competitive edge and it may not be able to attract and retain directors. The firm's business strategy is also exposed when performance remuneration is disclosed, thus placing the shareholder in a difficult dilemma when deciding between extensive disclosure of directors' remuneration as part of the financials and having a competitive edge.

Scholtz and Smit (2011:22) developed a figure to demonstrate the similarities and differences between directors' remuneration requirements, according to the Companies Act of 2008 and the JSE listing requirements, as seen in Figure 3.3.

FIGURE 3.3: Directors' remuneration requirements

Companies Act 2008	JSE listing requirements
➢ The following must be disclosed separately • Remuneration,* • Benefits,* • Pension, • Payments to pension funds on behalf thereof, • Compensation for loss of office, • Securities issued, and • Service contracts ➢ Remuneration includes: • Directors' fees for services to or on behalf of the company , • Salary, bonuses and performance related payment, • Expense allowances for which the director need not account, • Contributions to any pension scheme not otherwise needing separate disclosure. • Options or rights given directly or indirectly, • Financial assistance for the subscription of options or securities or the purchase of securities, and • Any loans and any other financial assistance ➢ Remuneration and benefits must be shown for: • Services as director of the reporting company, and • All other devices while being a director of the reporting company.	➢ Disclosure should be made of each individual director's emoluments, including directors who have resigned. ➢ An analysis in aggregate and by director of emoluments paid for the current financial year as well as the preceding financial year, distinguished between executive and non-executive directors: • Fees for the services as director, • Management, consulting, technical or other fees, • Basic salary, • Bonuses and performance-related payments, • Sums paid by way of expense allowance. • Any other material benefits received. • Contributions to pension fund, and • Commission, gain or profit sharing arrangements.

Source: Adapted from the South African Companies Act, 2008 and JSE Listing requirements (2010)

Firms listed on the JSE must ensure that they comply with all the directors' remuneration disclosure regulations and requirements, not only with respect to the Companies Act (2008), but also to the requirements mentioned for listed firms on the JSE, as shown in Figure 3.3.

It is, however, important to note that there is a psychological side to remuneration for directors as well, whether it is regarding the financial remuneration paid to the directors or whether directors are only motivated when being paid by the firm. These issues can only be analysed when the psychological impact on directors is examined more closely.

3.9 THE PSYCHOLOGICAL IMPACT OF REMUNERATION ON DIRECTORS

There is an on-going debate about directors' remuneration in Western economies as to whether shareholders are getting what they deserve and whether directors' remuneration is acceptable to stakeholders (Larkin, Lamar & Francesca, 2012:1194). Unfortunately, little regard has been given to perhaps the most important constituency – the directors themselves.

For several years firms believed that directors are only motivated by financial remuneration received for performance and growth in firms. Recent studies reported that this might not always be the case. Psychological and sociological factors and motivation methods also need to be included as not all directors are motivated in the same way.

A recent study conducted by PwC in Australia (2012:6) investigated the psychology of incentives and found the following:

- Directors are more risk averse, meaning that they would rather take a lower fixed salary than performance bonuses;
- Directors much rather prefer a clearer pay package above a complex one with more value;
- Directors value deferred pay significantly below its economic or accounting value, since the longer the directors have to wait for bonuses, the less it is worth to them;
- Directors want to be paid more than their peers, even if it is lower in absolute terms;
- Directors don not just work for money; factors like an ideal job also play an important role; and
- The majority of directors believe that their long-term incentives are not effective, thus it does not motivate them to perform.

In recent times the question has been asked whether the 'old' remuneration strategy is still effective. Shareholders are of the opinion that firms invest too much money in long-term incentives for directors with little performance to show for it (PwC, 2012:29).

Remuneration is inherent to a firm's strategy. Firms use various remuneration strategies and have the discriminatory advantage in selecting their pay-for-performance policies (Gerhart & Milkovich, 1990:669). Risk attitude and behavioural biases play a major role in the decision-making processes of directors when being remunerated in these firms depending on the role the director has in the firm as well as the opportunity costs involved.

It is important for firms to be able to identify the elements that influence directors' behaviour, since a firm's performance depends on it. Remuneration strategies currently focus mainly on two mechanisms when it comes to a firm's financial performance and directors' remuneration. In the first instance, provision for effort and personnel economics are identified as in the case of Jensen and Meckling (1976:305), where powerful insight into the strategic role of remuneration for performance is identified by clearly defining the mechanisms used that affect employee efforts to enhance firm performance. Secondly, the economic theory of effort, skill and output utilised by the firms to improve operating performance.

There are, however, more factors influencing remuneration and a firm's performance such as psychological factors that are largely neglected in the economy. These factors include psychology of information and focusing on social and overconfidence costs. These factors influence not only the behaviour of the director, but also the decisions and actions of other employees (Larkin *et al*., 2012:1194).

Focusing on the psychological factors, Branca and Imelmann (2009) stated that behaviour is defined as the way directors act as a result of a particular remuneration package. The literature in economics mainly focuses on behaviour in terms of the firm's performance. In contrast to that, social and/or psychology literature focus on the intrinsic (doing an activity for its own sake) or extrinsic (doing an activity for an instrumental reason) motivations of director behaviour.

Other factors, such as corporate culture, fame, awards and social groups also need to form part of factors when modern remuneration packages for directors are compiled. When psychological and social factors as mentioned in this section are incorporated in the agency theory, as was the case in the study conducted by Gagne and Forest (2008:225), these factors assist researchers to move closer towards explaining the effectiveness of the various methods influencing behaviour, motivation and retaining

key talent when remunerating directors. These factors cannot always be calculated in monetary value towards remuneration, but are also important factors that might indirectly influence firms' performance.

Researchers could also investigate the relationship between the psychological remuneration of directors and a firm's financial performance. For more detail, industrial and organisational psychology (also known as IO psychology or work psychology) could be considered. Organisational psychology is the scientific study of the employee, workplace environment, and the organisation (Anderson, Ones, Sinangil & Viswesvaran, 2002:424). Industrial and organisational psychologists contribute to the organisation's success by means of the performance, satisfaction, safety, health and well-being of its employees. It is therefore important to not only focus on cash-based incentives when remunerating, but to also focus on the directors' behaviour and attitudes, and how these can be developed and improved by means of hiring practices, training programmes, feedback, and management systems (Building better organisations, 2013).

Section 3.9 identified the psychology underpinning "financial" remuneration. The directors' attitudes towards typical current remuneration models that only focus on monetary value benefits were revealed. Furthermore, the emphasis could be on industrial psychology when remunerating packages for directors are structured. There are various types of incentives and factors that motivate directors, not only financial incentives. The current general remuneration model may need adjustments as it may no longer be adequate.

This study will however focus on the remuneration paid during a specific period selected, thus not being able to adjust the remuneration packages, but to evaluate the current compilation and the possibility of a relationship towards firms' financial performance. Before stating the problem relevant to this study, a few similar studies conducted in the field of directors' remuneration and firms' financial performance internationally are listed and the most relevant studies are briefly discussed in the next section.

3.10 THE RELATIONSHIP BETWEEN FINANCIAL PERFORMANCE AND DIRECTORS' REMUNERATION

Many studies worldwide have analysed the determinants of directors' remuneration, particularly in the United States and in the United Kingdom. These include Coughlan and Schmidt, 1985; Jensen and Murphy, 1990; Gibbons and Murphy, 1990; Cosh and Hugh, 1997; Conyon, 1998; Zhou, 2000; Grunditz and Lindqvist, 2003; Bebchuk and Fried, 2004; Gregg, Jewell and Tonks, 2005; Lee, Lev and Yeo, 2008; Crutchley and Minnick, 2012 as well as Larkin *et al*., 2012, to name but a few. These authors reviewed much of the literature pertaining to corporate financial performance and directors' remuneration.

Murphy (1985:11) wrote one of the most influential papers on pay for performance when he compared a firm's performance and the remuneration of its directors by measuring shareholders' return. Building on this study, Jensen and Murphy (1990:225) compared the directors' wealth with those of the shareholders and found no significant relationship in this regard. Further studies followed and yielded different results. These studies were conducted all over the world in different sectors and using different performance measures to compare with the remuneration of directors. Diverse findings were gathered depending on internal and external factors of these firms and the industries considered for the studies.

A study conducted in the United States by Core, Holthausen and Larcker (1999) investigated the pay for performance for CEOs and also found a significant relationship between the financial performance measures used and the remuneration of the CEOs. The study focused only on the basic salary component and total remuneration paid to the CEOs and measured it against ROA, share returns, turnover and investment opportunities.

In Australia, Windsor and Cybinski (2007) aligned executive directors' remuneration with firm performance. The study investigated the top 50 largest publicly-listed firms in Australia over a period of two years. The dependent variable used for the study was executive directors' remuneration that comprised fixed pay, superannuation, bonuses and fringe benefits. The study concluded that different measures used had different relationship outcomes.

A Korean study done by Kato *et al.* (2007:37) suggested that the remuneration of a director might be linked to the financial performance of the stock markets. This study compared the sensitive relationship between directors' remuneration and the performance of the firms in Korea, to those of the United States and Japan. Accounting measures had less impact on the remuneration of directors in Korea than those in the United States and Japan. The study used the stock market as a measure because a change in share price is a reasonable indicator to measure a firm's growth as it is used internationally.

According to Krauter and De Sousa (2008:193), who investigated 28 manufacturing firms in Brazil, executives' remuneration and a firm's financial performance do have a positive relationship. The Mann-Whitney test was used in the study, and the results suggested that there is a relationship between variable salaries and financial measures, namely ROE and return on sale (ROS). Another positive relationship was found between other remuneration types and the financial measures ROE, sales growth, and ROS. When the study used the Pearson's correlation test, no significant linear relationships among variables were pointed out.

A study done by BDO International (2010), the 5th largest network of accounting firms in the world, relationship links between the remuneration of directors and performance of firms all over the United States were found. From most of these studies, a positive return for shareholders leads to an increase in remuneration, while the opposite reaction applied when performance decreased.

Dommisse (2011:1) studied the top 120 JSE-listed firms in South Africa, investigating the relationship between the total remuneration of executive management and firms' financial performance. Dommisse used income, turnover and earnings before tax and financing cost as financial performance measures. These measures are short-term figures and can be tested against firms' financial performance. The study indicated a strong relationship between the total directors' remuneration and firms' financial performance.

Another South African study done by Bradley (2012) also determined that no linear correlation between CEO compensation and the performance of firms existed. The study investigated the 40 largest listed firms on the JSE. He did however suggest that

econometric models show correlation between certain variables such as age and experience of directors to compensation.

All the studies listed in Section 3.10 assisted in setting the context and highlighting the importance of this research study. These studies are only a small portion of current studies done globally and confirm the immense importance of this issue regarding overcompensation and the lack of a relationship between directors' remuneration and a firm's financial performance. By expanding the research in the field and conducting valid studies around this issue, all stakeholders can be rightfully informed. Shareholders and stakeholders would obtain a better understanding and improved insight on the matter and agency problems may decline or even disappear.

Chapter 2 and Chapter 3 provided the necessary literature and background for this study. A conclusion for the literature chapters follows.

3.11 LITERATURE CONCLUSION

As mentioned in the two literature review chapters, Chapter 2 and Chapter 3, directors' remuneration is still a high-profile issue. Almost daily, articles and various newspapers and business magazines highlight the concerns about the amounts of cash and equity remuneration paid to the directors of firms. The biggest concern is that directors are remunerated independently from a firm's financial performance. These arguments lead to the perception that directors become wealthy at the expense of a firm's shareholders.

In a business context, the vision is that directors' remuneration should stay closely linked to shareholders' value creation by means of comparing it with a firm's financial performance. Effective performance measures and governance principles will ensure that directors' remuneration programmes are linked to the remuneration directors receive and that shareholders are treated justly.

The primary objective of this study was to determine whether there is a relationship between the remuneration paid to directors and the financial performance of the firms selected in this study. This study's objective will directly influence the shareholders' value maximisation issues and investigate whether or not directors are being over-compensated.

In this study, the different sub-components of directors' remuneration are identified to highlight the areas where directors are remunerated for their work and performance. These sub-components were compared to the firms' financial performance to ascertain whether any relationship between sustainable performance and wealth creation for shareholders are observed based on the remuneration directors receive.

The secondary objectives for this study included the following aspects:

- Identifying the different sub-components of the total directors' remuneration and their importance in relation to the firms' financial performance measures identified;
- Investigating the contribution of the various sub-components towards total remuneration;
- Investigating the relationship between the various sub-components of directors' remuneration and firms' financial performance variables selected;
- Comparing the total and the sub-component remuneration of executive directors with the financial performance variables of the firms; and
- Comparing total non-executive directors' remuneration with the performance of the firms.

All these objectives are investigated when descriptive and inferential statistics are applied for this study, as discussed in Chapter 5. However, for this to be conducted, the methodology for this study is first developed in Chapter 4.

CHAPTER 4: METHODOLOGY

4.1 INTRODUCTION

As highlighted in the previous two chapters, financial performance varies depending on the type of firm as well as the sector it operates in. In the case of this study, Industrial Sector firms listed on the JSE during the period 2002 to 2010 were considered. The remuneration paid to the various directors in the industry is influenced by factors that were discussed in depth in Chapter 3. By investigating previous empirical studies, the researcher identified four financial performance measures for this study and divided the total remuneration of directors into four sub-components.

All the financial information, reports and other prior studies indicated that a possible relationship between the financial performance of the firms and directors' remuneration may exist. The primary objective of this study was therefore to investigate the relationship between directors' remuneration and the financial performance of firms listed on the Industrial Sector on the JSE. Five secondary objectives were also formulated and listed again in Section 4.5 of this chapter.

In Chapter 4, a broad overview of research in the business environment will be given, followed by a detailed explanation of the comprehensive research process that was employed in this study. This research process was adopted to ensure that all steps and aspects of the methodology for this study are addressed. The research process starts with defining the research problem, followed by identifying the objectives for the study and developing the research design. After these steps are explained, the chapter continues to discuss the data collection method used; the primary and/or secondary research conducted; the research framework chosen; how the data were collected; and explaining the descriptive and inferential statistics that were used to test the hypotheses.

4.2 BUSINESS RESEARCH

Business research is a systematic and organised attempt to investigate specific problems encountered in a firm's setting that need solutions. Business research is also defined as the entire research process from the starting phase, acquiring the necessary data; analysing the research data; separating the relevant data; converting

the collected data it into useful information and using the findings for better decision-making, guidance and planning for future problem-solving in the final phase. Overall, business research helps to improve performance in a firm and should contribute to maximise shareholders' value (Cooper & Schindler, 2006:4).

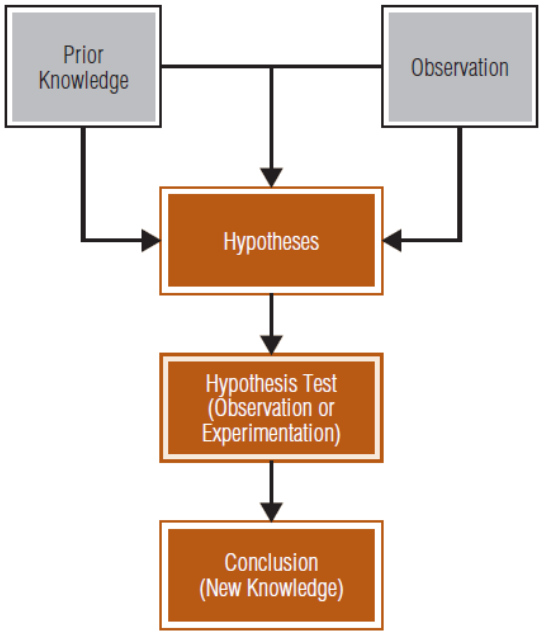
The following quote motivates the reason for business research:

"Every business issue ultimately boils down to an information problem" (Doyle & Griffin, 2010:6).

It is always important to state the purpose of the business research before selecting the type of research that will be conducted. There are various business research methods to use, such as descriptive versus analytical, applied versus fundamental, quantitative versus qualitative, conceptual versus empirical. For the purpose of this study, the scientific method approach was used. The process of this method is illustrated in Figure 4.1.

The scientific method focuses on the system or technique used by researchers to use prior knowledge and evidence to achieve objectives in a firm. According to Doyle and Griffin (2010:6), the core of research, whether basic or applied, lies in the scientific method used.

FIGURE 4.1: The scientific idea development method



Source: Doyle and Griffin (2010:6)

With the scientific method, there are various ways to develop ideas. It is important that these ideas can be converted and stated into researchable terms. By being able to convert these terms, the hypothesis stage is reached. The next step involves testing the hypothesis against empirical evidence (which are facts from observation or experimentation). With hypotheses, the results may either be rejected or not rejected. By formulating the findings, new knowledge is generated and developed.

4.3 THE RESEARCH PROCESS

According to Cant, Gerber-Nel, Nel and Kotze (2003:27), a research process can be defined as a series of steps in the methodical collection and analysis of data. For the purpose of this study, the research process consisted of ten steps as illustrated in Figure 4.2.

FIGURE 4.2: The research process

Source: Adapted from Lamb *et al*. (2010:151)

A thorough discussion of each of the steps outlined in Figure 4.2 will follow in this chapter, in order to explain how the research process was applied for this particular study.

4.4 STEP 1: DEFINING THE RESEARCH PROBLEM

The research process begins when the researcher is confronted with an opportunity or a challenge. This opportunity or challenge is usually acknowledged for the first time and is not clearly defined. For this reason, it is crucial that the researcher addresses the research matter with proper and prompt decision-making. This is an important step, due to the fact that the entire research process will follow according to the decision made. If the research problem is inadequate or weak, the findings of the research might also be of little value. One cannot design a research plan without a very clear idea of what needs to be accomplished (Coldwell & Herbst, 2004:36). Bertrand Russel, a well-known British author specialising in mathematics and philosophy, quoted the following regarding the research problem:

"The greatest challenge to any thinker is stating the problem in a way that will allow a solution" (Tao, 2005:129).

Before one can understand how to develop a well-defined research problem, it is important to know what the goal or outcome of the process will be. According to Strangman (2012), the goal of defining the research problem is to create research questions and hypotheses that are:

- Measurable – quantifiable/testable;
- Well-defined – no ambiguous language;
- Useful for decision-making or finding a solution;
- Directly connected to one another – the hypothesis is not only a plausible answer to the research question, but completely answers the research question as well; and
- Taking the full scope of the problem into consideration – have all the important and relevant questions been asked?

The most important reason why a research problem must be defined before continuing with the steps that follow below, is that the researcher must first define the "destination"

before starting the research “journey”. This helps to determine what will be done, whether it will withstand scientific scrutiny, how it will be done and what may be achieved by conducting the research (Sage, 2012).

According to Gerber-Nel (2004:167), it is not only important to obtain an answer or solution as mentioned above, but to obtain these answers in an effective and efficient manner. Therefore, in the case of this study, it was vital to properly acknowledge the problem or opportunity confronting firms to do proper research in order to find sufficient solutions and results.

As highlighted in the previous two chapters, directors’ remuneration has been a high-profile issue for the past few decades. Shareholders want to be better informed about whether directors’ remuneration packages are in line with the performance of the firms, or whether they are earning big incentive packages without any obligation towards shareholders or being required to ensure an acceptable level of performance in the firms. This issue was used to develop the research problem for this study, and furthermore, to determine whether there is indeed a relationship between directors’ remuneration and the financial performance of firms. Once the research problem has been identified, the research objectives can be formulated.

4.5 STEP 2: IDENTIFYING THE RESEARCH OBJECTIVES

After defining the research problem, the primary and secondary research objectives need to be developed to continue with the research process. The main purpose of the research objectives is to provide relevant information, and to obtain results and answers for the research study.

According to Wiid and Diggines (2013:2), this step answers what the purpose of the research is, as it is impossible to formulate these objectives before the research problem has been identified. These research objectives are guidelines to what the researcher would like or hope to achieve in the study. The research objectives will in general correspond to a large degree with the information required to solve a problem or utilise an opportunity. Therefore, it is important that the research objectives are formulated in an accurate, relevant and specific manner.

When formulating research objectives, the researcher divides general questions into more focused and specific questions. These questions are then used to set the primary

and secondary objectives of the study. A primary objective is defined as the statement of the main relationship or association that the researcher seeks to identify or establish (Farrugia, Petrisor, Farrokhyar & Bhandari, 2010:278). The primary objective set for this study was to determine whether there is a relationship between directors' remuneration and firms' financial performance.

Secondary objectives are defined as specific aspects in the research topic that the researcher wants to investigate in the main framework. The following secondary objectives were formulated for this study:

- Identifying the different sub-components of the total directors' remuneration and their importance in relation to the firms' financial performance measures identified;
- Investigating the contribution of the various sub-components towards total remuneration;
- Investigating the relationship between the various sub-components of directors' remuneration and firms' financial performance variables selected;
- Comparing the total and the sub-component remuneration of executive directors with the financial performance variables of the firms; and
- Comparing total non-executive directors' remuneration with the financial performance of the firms.

These objectives were formulated to strengthen and support the primary objective of the study. According to Lamb *et al*. (2010:152) the research objectives should ensure that the problem statement is addressed and assist with the relevance of the measuring instruments that will be used to assess the empirical results from the data analysis.

4.6 STEP 3: CREATING AND DEVELOPING A RESEARCH DESIGN

After the research problem has been identified, and the research questions and research objectives have been formulated, the research design can be developed. The research design is the method/plan that sets out how the research will be conducted.

Wiid and Diggines (2013:54) described the research design as a blueprint and a framework design for the researcher. The design is the plan and structure that will

enable the researcher to increase the ultimate validity of the research results and findings. To compile the research design, the researcher needs to establish a few key factors in advance, namely:

- The type of data;
- Where the data will be collected or obtained from;
- What data collection method and technique will be used;
- Who or what is targeted; and
- How the data will be analysed.

These factors are examples of what may be required to compile a proper research design. Lamb *et al*. (2010:152) stated that the research design is not only a plan to implement the research project, but also a tool to prevent any misunderstandings and a guide to work from.

According to Mouton (1996:107), a research design is a set of guidelines and instructions that need to be followed in order to address the research problem and the research objectives. The design illustrates all the elements of the research. These include samples, methods, programmes and measures.

The research design will vary depending on the type of research conducted. For this reason, the researcher must ensure that the research objectives stated in the previous step can be achieved by selecting the correct and relevant data sources from where the needed data can be collected. There are two types of data sources when collecting data, namely secondary and primary sources. According to Grinyer (2009:2), secondary data sources include data that were generally collected for previous research and/or already exist. Secondary data sources are most commonly associated with quantitative data. In contrast, primary data sources are documents or records containing first-hand information or original data on a specific topic. The researcher will first try to solve the research problem by using secondary research data, and only if it is not possible to solve the research problem this way, will the researcher conduct primary research.

4.7 STEP 4: COLLECTING SECONDARY DATA AND RECONSIDERING THE OBJECTIVES

Secondary data refer to information that has been collected for some other purpose and is readily available (Gerber-Nel, 2004:11). Secondary research is described as the most widely used method for data collection. The secondary research process involves accessing data and information that have been gathered or originate from previously conducted primary research (Prescott, 2008). Secondary research also includes collecting information from third-party sources such as websites of firms, accounting and sales reporting, magazine articles as well as previously gathered information used internally or externally by an analyst.

According to Prescott (2008), there are many advantages to using secondary research data rather than conducting primary research. One significant advantage when using secondary data is that the data can provide background information regarding the research study and could strengthen the final results. Other advantages of secondary data include (Prescott, 2008):

- Ease of access;
- Low cost to acquire;
- It helps to clarify and/or answer the research questions; and
- It may eliminate the difficulty to conduct primary research.

Prescott (2008), however, stated the importance of also mentioning the negative aspects regarding secondary research data. These include:

- The quality of research may be inadequate;
- It may not be specific to the researcher’s needs;
- The information gathered from previous research may be incomplete; and
- The research may be untimely or outdated.

Overall, there are significant advantages for researchers to conduct secondary research. It is the responsibility of the researcher to clarify and manage the disadvantages accompanied with secondary data.

Another important aspect to acknowledge when working with secondary data is the difference between internal and external secondary data. Internal data can be divided into four broad reporting categories and are obtained within an organisation. The four areas can be classified as accounting reports, sales force reports, miscellaneous records and internal experts (Abhijeet, 2010). External data are recorded, created, conducted or generated by entities other than the researcher or the organisation conducting the research. This type of data is usually collected from external databases or published data (Cant *et al*., 2005:71).

For this study, secondary external data were collected. McGregor BFA (2012) and TimBukOne (2012) were chosen as the main external databases for the study. These databases provided all the information regarding the remuneration of directors as well as the financial performance of the selected firms for the study's timeframe. Firms' public websites were also used to obtain and ensure correct data and information.

4.8 STEP 5: CONDUCTING PRIMARY RESEARCH

According to Jones and Gratton (2010:8), primary research is defined as data observed or collected from first-hand experience. Primary data have not been previously published. An example will be data that derive from an original or new study. As mentioned earlier, primary research is usually only conducted when secondary research is not adequate or cannot solve the research questions. According to Wiid and Diggines (2013:85), primary data can be obtained from observation, experiments and surveys. Every method used to collect primary data will use alternative techniques, as no perfect single method exists to conduct primary research. It all depends on the experience of the researcher. The type of research selected for the study will definitely influence the method, objectives and other factors of the study; therefore it is important to also highlight the advantages and disadvantages of primary research, similar to what has been discussed in terms of secondary research in the previous paragraphs.

According to Dickie and Dubey (2008:2), the advantages of primary research include that:

- It is an original source of data;
- It is possible to capture the changes occurring over the course of time;
- It is flexible;

- It is to the advantage of the researcher; and
- Extensive research studies are based on primary data.

Dickie and Dubey (2008:2) did not only identify the advantages of primary research, they also acknowledge the disadvantages of primary research that include that:

- Primary data is expensive to obtain;
- It is time-consuming;
- More resources are required; and
- Inaccurate feedback may occur.

When conducting primary research, the researcher must compile and design the needed research by collecting data and converting it into the required information to address the research question. Before starting with a primary research investigation, it is important to first compile the research framework as will be discussed in the next section.

4.9 STEP 6: PLANNING THE RESEARCH FRAMEWORK

During this step of planning the research framework, the researcher identifies the selection of subjects and the respondents (individuals) that will participate in the study. The terms population, sample and census are used to identify and measure the elements selected for the study to address the research question.

According to the Australian Bureau of Statistics (2013), a population may be studied using one of two approaches: taking a census, or selecting a sample. It is important to note that irrespective of whether a census or a sample is used, both provide information that can be used to draw conclusions about the whole population.

Easton and McColl (2010) defined a population as an entire collection of people, animals, plants or things from which data may be collected. In this study, the researcher was interested in firms listed in the Industrial Sector of the JSE and wanted to draw conclusions regarding the entire group selected.

A sample is defined as a group of units selected from a larger group (population). By using a sample, it is expected that valid conclusions about the larger group (population)

can be drawn. The reason for using a sample rather than the entire population is generally due to the large size of the entire population. The best way to solve this problem is by doing random sampling on the population. This method is used to best represent the larger group or population. The researcher should note that even when only selecting a sample, it is important to thoroughly define the population as well as including the description of the requirements to be included. It is also important to note that the targeted population will always be identified prior to selecting a sample from where the data for the study will be gathered (Roxy, Olsen & Devore, 2008:32).

An alternative way to conduct research is by way of a census collection. A census is defined as a procedure of systematically acquiring and recording information regarding the elements of a given population (Arthur & Sheffrin, 2003:334). The Australian Bureau of Statistics (2013) defined a census as a study of every unit, everything or everyone in the population identified. This is known as enumeration, which means it is a complete count. Data collected with this method are far more accurate than selecting a sample that represents the entire population.

In this study, a sample was used to obtain the relevant information due to specific requirements. All firms listed on the Industrial Sector of the JSE from 2002 until 2010 were identified to address the research problem, namely the relationship between directors' remuneration and the firms' financial performance. This makes it clear that the target population selected for this study was the Industrial Sector firms listed on the JSE. The criteria and requirements identified for the research study were selected to include most of the population by selecting specific data required from every element in the population. After identifying the population, additional requirements were considered to determine the sample group. One of these requirements was that a firm had to be listed for three consecutive years. By selecting such a large sample of firms, findings are more accurate for the entire population. Table 4.1 illustrates the advantages and disadvantages of selecting the sample.

TABLE 4.1: Advantages and disadvantages of a sample selection

Advantages of a SAMPLE	Disadvantages of a SAMPLE
• Costs would generally be lower than for a census. • Results may be available in less time. • If good sampling techniques are used, the results can be very representative of the actual population.	• Data may not be representative of the total population, particularly where the sample size is small. • Often not suitable for producing benchmark data. • As data are collected from a subset of units and inferences made about the whole population, the data are subject to 'sampling' error. • Decreased number of units will reduce the detailed information available about sub-groups within a population.

Source: Australian Bureau of Statistics (2013)

4.9.1 Setting the data set

All JSE-listed and delisted Industrial Sector firms, listed during the nine-year time period, were identified for the study and formed part of the target population. The firms that complied with the criteria and requirements for this study were included by means of a sample selection. As mentioned in Step 4 of the research process, McGregor BFA (2012) and TimBukOne (2012) were used to collect the required data for all the firms. All the firms' financial reports and results were available in standardised financial reporting format. By having standardised financial statements, the data set used in this research study are more reliable than using various reporting formats all together.

All the firms listed during the given timeframe were considered for inclusion if they remained listed for more than three consecutive years. If not, it would not be possible to formulate trends or draw comparisons with the rest of the Industrial Sector's firms. This requirement unfortunately did expose the study to potential survivor-bias selection, which means that only firms that "survived" for longer than a three-year period were included in the sample for the study (Elton, Gruber & Blake, 1996).

One of the main reasons for selecting the Industrial Sector is that it consists of a large and diverse group of firms, with some firms only operating in South Africa while others are doing business in the international environment. Another reason for not considering other sectors, such as the Financial Sector and Basic Materials Sector, is the difference

in the financial statements and business operations of firms operating in the different sectors, limiting their comparability.

If this study only focused on the listed firms in the Industrial Sector, it would have narrowed down the data set significantly and would have investigated only the successful firms. A large number of firms delisted during the period selected for numerous reasons. Firms that could not commit to their financial obligations and failed financially or cases where firms were restructured were observed. The following two reasons were identified for including those firms that delisted during the period used for the study and were listed for at least three consecutive years:

- By including listed and delisted firms with a lifespan of longer than three years, the study would have a more fair and just representation of the industry growth, performance and trends. By only selecting the surviving firms, the outcomes/results of the study would have appeared better than in reality; and
- The findings and results of this research study would be inconsistent and unreliable when considering the Industrial Sector as a whole for the timeframe being researched if only listed firms were used or only firms that existed for the entire time period.

As mentioned above, a firm was only included in the study when three or more consecutive years of data were available for that specific firm. The type of data obtained for research purposes was panel data, which included time period dimension data (time-series) as well as cross-sectional dimension data. Whenever these two dimensions are used together, it is categorised as panel data. According to Diggle, Heagerty, Liang and Zeger (2002:2), the term ‘panel data’ refers to multi-dimensional data frequently involving measurements over time. Panel data contains observations on multiple phenomena observed over multiple time periods for the firms or individuals. By only considering firms that existed for at least a three-year period, the reliability of the study increases.

To summarise, the study included all firms listed and delisted, having at least three consecutive years of data available in the period set for this research study. The period selected for the study was 2002 until 2010 (nine years). The reason for this unusual time selection was that the King III report was published after 2010, and that financial statement standardised format guidelines changed, affecting the consistency factor

between firms that did not all change immediately to comply with the new requirements of the King III report. Most importantly, the over-time factor comparability in the study would have been jeopardised by extending the period. First, a total of 126 firms were identified, consisting of listed and delisted firms on the JSE's Industrial Sector. These firms were identified as the population for the study. After applying the criteria of a three-year existence requirement, 27 firms were eliminated and an additional six were excluded for not having or complying with the relevant data and information needed in the study. The remaining 93 firms' financial data were available and complied with the prescribed requirements to be included in the study. The remaining 93 firms were included in the sample for this research study.

4.10 STEP 7: COLLECTING THE DATA

This phase is where the application of the methodology takes place. In this step, the data are physically collected and analysed. The method selected for the study and instruments that will be used to do the analysis in the study are identified in order to obtain the necessary results. The collection of data entails the actual collection of primary and secondary data from the selected target group, population, sample or census selected.

The collection of data is known to be the most expensive aspect of the entire research process and increases the possibility of making mistakes considerably. The researcher must have the knowledge, skill and insight to obtain the correct data for the research. This step must be planned thoroughly, with clear instructions and methods for collecting the data. To start with the planning, the type of data collected must be identified first. As mentioned previously, there are two types of data: primary and secondary data. Within each of these two types there are two main types of data that can be collected for a study namely quantitative and qualitative data. The term 'quantitative' refers to an information type that is based on quantifiable data (objective properties) or quantities, whereas the term 'qualitative data' refers to apparent subjective properties (qualities) including mass, time or productivity (Trochim, 2006).

Secondary data were used for this study, because the data existed prior to the study. All the secondary data collected were not in the correct usable format for the purpose of the study. It had to be reclassified and converted into the necessary format, by compiling new data sheets on Microsoft Excel (2012).

Quantitative data were collected to achieve the objectives formulated for the research study. The reason for selecting a quantitative data approach can further be motivated by the fact that the remuneration of directors as well as the performance, financial ratios and financial amounts of the firms were displayed in a measurable format on the financial and annual reports and/or statements of the identified firms. All the numerical data were used to address the primary and secondary objectives.

As mentioned above, the performance of these firms was quantified by means of investigating relevant financial ratios and measures. The financial ratios were used as measurements to calculate the financial performance of the firms. These financial performance measures were identified as the independent variables. Instances did occur where disclosure was not provided or not in the correct format for the requirements of the research study. The reason for this could be that the financial reports were not published, or that the reports were published, but were not complete with all the relevant required information needed for the study. The same data collection requirements mentioned for financial performance data were applied for collecting directors' remuneration data.

The financial information was obtained from the income statements, balance sheets and ratio reports from two external databases, McGregor BFA (2012) and TimBukOne (2012), which contained standardised reports and statements. All the remuneration reports were also obtained from these databases.

The financial performance data and ratios used as measurement instruments included the following aspects:

- Turnover;
- Earnings per share;
- Total share return; and
- Market value added.

The directors' remuneration data were divided into the following four sub-categories:

- Basic salary;
- Bonuses;

- Share options exercised or share gains; and
- Other remuneration (e.g. medical, pension, motor and telephone allowances).

Table 4.2 provides the dependent and independent variables that were used in this study. As observed in Table 4.2, the independent variables were divided into two types, namely market and accounting measures. All these independent variables were linked to the measuring method in the table for the research study.

Directors' remuneration was selected as the dependent variable, and was further sub-divided into four components, namely the basic salary of directors, the performance bonus paid, gains directors made in terms of share options exercised or received from the firm, and lastly, other remuneration that mostly consisted of pension, medical and vehicle allowances.

The independent variables identified in Table 4.2 include market and accounting measures that were used to measure the financial performance of the firms. Four important measures were selected for this purpose. All these variables mentioned above including the composition of these amounts and ratios are discussed in depth in the sections that follow.

TABLE 4.2: Dependent and independent variables

IDENTIFIED	MEASURED
Dependent variable	
Directors' remuneration • Basic cash salary • Performance bonus • Gain on share options • Other	Remuneration data collected from reports and financial statements were converted into Excel sheets for this research study. In addition, executive and non-executive directors were identified and classified accordingly next to every director's details for each year the firm was included in the study.
Independent variables	
Financial performance of firms	
Accounting measures	
Turnover	Statement of comprehensive income
Earnings per share (EPS)	$\text{EPS} = \frac{\text{Net Income after tax} - \text{Dividends on Preferred Shares}}{\text{Avg Outstanding Shares}}$
Market measures	
Total share return (TSR)	$\text{TSR} = \frac{\text{Price(end)} - \text{Price(beginning)} + \text{Dividend}}{\text{Price(beginning)}}$
Market value added (MVA)	Firm's market value – invested capital

Source: Crafford (personal collection)

4.10.1 Dependent variables

As illustrated in Table 4.2, the dependent variable selected for this study was the directors' remuneration. All the sub-components of the dependent variable were investigated for both executive and non-executive directors. The study focused on these sub-components and compared them with the financial performance measures

selected for the study. The data were collected from the financial reports and statements published by all firms included in the sample during the study's timeframe and complying with all required criteria.

The sub-components of the dependent variable are discussed below:

(a) Basic salary

Basic salary is a fixed form of remuneration and is normally calculated depending on the skills and experience of directors. Sirkin and Cagney (2006:20) defined basic salary as a fixed amount of money paid to the employee in return for work performed. Basic salary does not include bonuses or any other benefits seen as potential compensation from employers.

(b) Bonus/Performance bonus

A performance bonus is defined as remuneration given for work performed above and beyond normal or expected duties. This type of remuneration is often used as incentive to increase the productivity of a team, department or an individual in an organisation. Performance bonuses are usually predetermined for executive directors at large firms as reward for meeting a certain target or goal. There are, however, regular occurrences when performance bonuses are awarded to employees for recognition of exceptional work even though the employer has no contractual obligation to do so (*Business Dictionary*, 2013c). The general assumption is that the bonus component of directors' remuneration will be directly related to the performance of the firm.

(c) Share option or share gains

It is important to note that not all firms in this study differentiated between share purchase options and shares given to executive directors by the firm, by focusing more on the profit made from the shares sold or options exercised by the directors. For the purpose of the study, no distinction was made between the two options. Most firms disclosed share gains made by directors or indicated when directors sold their shares to calculate the amount of value gained from these transactions. The number of shares given or options exercised by directors in a specific year was calculated by taking the average share price for that year and using it as a measure to determine the remuneration of the directors for the period. The reason for placing a value on these

options or share remuneration is because the firms were willing to compensate the executive director with the amount in the given year. However, it is important to note that all firms did not disclose the shares granted or share options given to directors, thus not being as transparent as others. Too many previous studies excluded this important method of remuneration. This type of remuneration may influence findings substantially if it is excluded.

(d) Other remuneration

The most common benefits included in this category when considering executive and non-executive directors' remuneration were medical and pension contributions, vehicle, telephone, and travel allowances. It is important to note that remuneration paid for services rendered by non-executives for attending meetings and other duties will be allocated in the other remuneration sub-component section. Fringe and other benefits including superannuation payments were not fixed to any performance criteria and their relative amounts. These varied depending on the remuneration structure of a firm. However, from a shareholder's perspective, these fixed forms of remuneration should not be excessive when compared to the size or performance of the firm.

Having defined and explained the dependent variable and its components, the next section will focus on the independent variables.

4.10.2 Independent variables

The independent variables for the study included a set of selected financial performance figures and ratios that were collected and quantified from sample companies' financial statements. Two measuring methods are identified for financial performance in this research study. The first method is to use each individual independent variable separately. According to Carr (1997:6), individual financial performance measures should be used independently, due to the fact that they may be highly correlated since most of them derive from the same financial data. In terms of the second method, the researcher could include all four independent variables in one regression test. An example is when testing inter-correlation variables on two selected financial performance measures; one internal ratio and an external measure that will not necessarily have significant correlation, thus making it possible to use these measures together in a multiple regression model. Using these two performance

measures may identify the effectiveness in the firm, comparing and aligning the performance of the firm to the remuneration of the directors. In this research study, particular variables were selected to compare to the dependent remuneration variable. The financial ratios and figures were identified as accounting- and market-based measures and included turnover, earnings per share (EPS), total share return (TSR) and market value added (MVA). These four independent variables will be discussed and explained in more detail in the sections to follow in order to refer to the composition of the ratios or the calculation of variables selected for this study.

(a) Turnover

In a South African context, the word turnover is synonymous with revenue. IFRS IAS 18 (2009) defines revenue as gross inflow of economic benefits during the period arising in the course of ordinary activities of an entity. These inflows result in increases in equity, other than contributions from equity participants. Turnover is the amount of money received by a firm in a specific period reflecting the sales of goods or services. Turnover or revenue can be calculated by multiplying the price at which goods or services are sold by the number of units or amount sold. Turnover is also an important measure to determine the growth, financial performance and size of the firm. Comparing consecutive years' turnover could be used to reflect the performance and/or growth of the firm (Conyon, 1998:485).

(b) Earnings per share (EPS)

Earnings per share are generally abbreviated as EPS. IFRS IAS 33 (2009) defines EPS as the ratio that defines the entity's profitability and to value the firm's earnings added from outstanding ordinary shares. EPS is calculated in the context of ordinary shares. EPS is calculated by dividing the profit or loss for the period between the attributable ordinary shareholders. The worth of the earnings attributed to each ordinary share for a year is measured in this ratio. EPS is the portion of a firm's profit allocated to each outstanding ordinary share, and is used as an indicator of how profitable the firm is. EPS can be calculated as follows:

$$EPS = \frac{Net\ Income - Dividends\ on\ preferred\ shares}{Weighted\ average\ \#\ Outstanding\ ordinary\ shares} \qquad \text{(Equation 4.1)}$$

When calculating EPS, the time-weighted average number of ordinary shares outstanding over the reporting period must be used, due to the change in the outstanding number of shares over time. Data sources can simplify the calculation by using the number of ordinary shares outstanding at the end of the period. McGregor BFA (2012) already calculated the EPS for each firm in the industry used in the study.

According to Chapman-Blench (2012:47), EPS is considered to be the single most important variable in determining an ordinary share's price. It is a major component used to calculate the price-to-earnings valuation ratio. Therefore, Chapman-Blench suggests that EPS be included when evaluating the financial performance of the firm.

(c) Total share return (TSR)

Total share return (TSR) (or simply known as total return) is one of many measurement tools used to determine the performance of firms' shares over a time period. TSR combines share price appreciation and dividends paid to show the total return to the shareholder, calculated as an annual percentage. TSR is calculated by measuring the growth in share price from its purchasing price (paid for the ordinary shares in the beginning), assuming that dividends are always reinvested when paid.

One important advantage of using TSR as an indicator of financial performance in a firm is that the measure allows the financial performance of firms' ordinary shares to be compared even though some of the shares may have a high growth and low dividend rate, while others may have a low growth and high dividend rate.

The formula to calculate TSR is as follows:

$$TSR = \frac{P(end) - P(beginning) + Dividend}{P(beginning)}$$ (Equation 4.2)

(d) Market value added (MVA)

Gallagher and Andrew (2007:108) defined MVA as the difference between the market value of a firm and the capital contributed by investors, but clarify more specifically that the MVA is the sum of all capital claims held against the firm plus the market value of debt and equity. All contributions by investors (shareholders and bondholders) and market value of all debt and equity capital claims form part of the invested capital in Equation 4.3.

The higher the MVA, the better for the firm owing to the fact that a high MVA indicates that the firm has created substantial wealth for its shareholders. On the contrary, a negative MVA means that the value of management's actions and investments is less than the value of the capital contributed to the firm by the capital market. This means that wealth and value have been destroyed. The equation for MVA is as follows:

$$MVA = Firm's\ market\ value - Invested\ capital \quad \text{(Equation 4.3)}$$

Once the dependent and independent variables have been defined and discussed, the research process can continue. The next step in the research process is to analyse and interpret the data, as discussed in the next section.

4.11 STEP 8: ANALYSING AND INTERPRETING THE DATA

Following the collection of primary or secondary data, the processing of the data can begin. The researcher's task is to analyse and process the data to convert it into the information relevant for decision-making purposes. Data processing can be done by using raw data and converting it into relevant and meaningful information usable in a research study. There are a number of data analysis methods to use, ranging from highly complicated and refined methods to multivariate analysis techniques. The planning of the data analysis technique already occurs when compiling the research design and deciding what the requirements of the data should be.

McGregor BFA (2012) was used to convert the raw data obtained from the financial statements and directors' remuneration reports, to Microsoft Excel (2010). There are two types of research available when processing and analysing data, namely descriptive statistics and inferential statistics. These two types of analyses are discussed separately in the following sections.

4.12 DESCRIPTIVE STATISTICS

Descriptive statistics is the discipline of quantitatively describing the main features of a collection of data (Blank, 1968:2). Descriptive statistics are divided into three categories for this study, namely central location measures (mean and median), measures of dispersion (range, variance and standard deviation) and normality testing (skewness and kurtosis).

For the purpose of this study, it was important to identify trends in the data, focusing on the remuneration of directors over a given time period, compared to how the firms performed during the same time period, as well as gathering information to determine which descriptive models will be best suited for the data set. The following main descriptive statistics were included in the study:

4.12.1 Mean

The arithmetic mean, also known as the average, is the most popular and useful measure of central location. It is computed by simply adding up all the observations and dividing them by the total number of observations:

$$Mean = \frac{Sum\ of\ observations}{Number\ of\ observations} \qquad \text{(Equation 4.4)}$$

The mean is appropriate for describing measurement data, e.g. remuneration paid to all directors. It is important to note that a mean can be seriously affected by extreme values called “outliers”. A typical example is when large international industrial firm invests in South Africa and the firm’s South African directors are being compensated in relation to the firm’s other directors globally. The average remuneration paid to the top ten directors in South Africa may increase the mean beyond what it was previously, due to the large pay gap between local South African firms and a global firm’s remuneration differences.

4.12.2 Median

The median is calculated by placing all the observations in ascending order, and the observation that falls in the middle of all the other observations reflects the median. The median was selected rather than the mean due to the fact that firm sizes in the Industrial Sector differed substantially in the data set, thus providing a better overview of the total trend in the sector for the time period. The median is also less sensitive for outlier values than the mean. Another reason for selecting the median instead of the mean in the data set is because of the possibility that the distribution of the data set may be skewed and not normally distributed.

4.12.3 Range (Minimum and maximum values)

The range is the simplest measure of variability, calculated as:

$$Range = Largest\ observation - Smallest\ observation \qquad \text{(Equation 4.5)}$$

The major advantage of the range is the ease with which it can be computed. Its major shortfall is the failure to provide information on the dispersion of the observations between the two end points. Therefore, one needs a measure of variability that incorporates all the data and not only two observations (Dummit & Foote, 2004:119).

4.12.4 Variance and standard deviation

Variance and its related measure, standard deviation, are arguably the most important statistics of dispersion. These measures are not only used to measure variability, but they also play a crucial role in almost all statistical inference procedures. The equation to determine these measures is as follows:

Sample variance is denoted by: σ^2

The variance of a sample is: $s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \mu)^2$ (Equation 4.6)

where:

s^2 = variance;

xi = each value in the data set;

μ = population mean; and

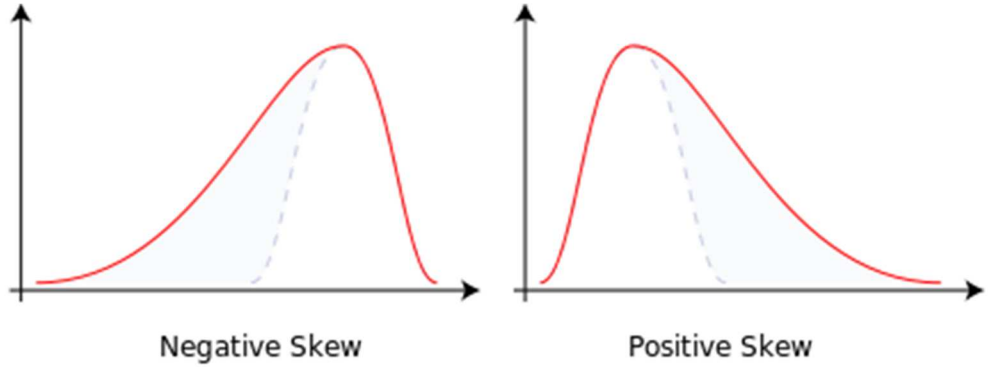
n = total number of values in the data set.

The standard deviation is simply the square root of the variance. The standard deviation is used to compare the variability of several distributions and to determine the general shape of a distribution.

4.12.5 Skewness

Skewness is a probability theory statistic that measures to what extent a probability distribution of a real-valued random variable "leans" towards one side of the mean (Dean & Illowsky, 2012). Skewness can be positive or negative as illustrated in Figure 4.3.

FIGURE 4.3: Positive and negative skewness



Source: Von Hippel (2005)

Although the qualitative interpretation of the skewness is complicated, positive skewness indicates that the tail on the right side is longer or fatter than the left side and conversely, negative skewness indicates that the tail on the left side of the probability density function is longer or fatter than the right side. When in certain occurrences the one tail is long and the other tail fat, the skewness does not comply with either of the above-mentioned. In the case of multi-model distributions and discrete distributions, skewness may also be difficult to interpret. Skewness enables the researcher to determine whether a given value in a set of data is more or less than the mean, however, skewness does not determine the relationship of the mean and median (Von Hippel, 2005).

Furthermore, it is essential to perform these tests in the study, because some of the data have historically been found to be non-normally distributed (skew), for instance, TSR (Gregg *et al*., 2005).

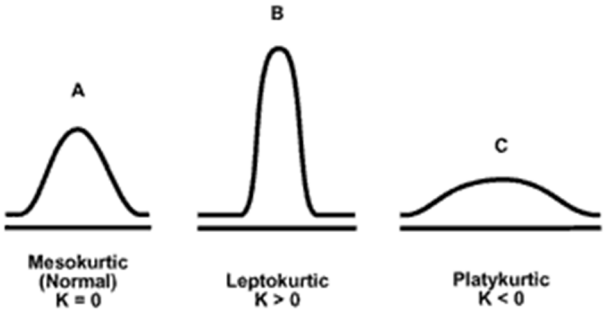
4.12.6 Kurtosis

Kurtosis is defined as a shape measure that illustrates the peakedness or flatness of a distribution compared to the normal distribution. The distribution can be more peaked than normal (leptokurtic), or a wider and lower peak around the mean (platykurtic) or normal (mesokurtic). Kurtosis, in combination with measures of skewness, is used to identify deviations from the standard normal distribution (Cleary, 2001).

It might be possible that remuneration variables have very large values, such as salaries and bonuses, whereas share profits might be more evenly distributed. Figure

4.4 illustrates the various types of kurtosis that might exist within a data set regarding the distribution of values.

FIGURE 4.4: Types of kurtosis



Source: Cleary (2001)

Descriptive statistics provide a general overview and indication of the nature of the data set, but can only be used to provide a general summary regarding the data. For a more thorough investigation within the data, as is the case for this research study, inferential statistics must be conducted to identify and assess the significance of a relationship between directors' remuneration and a firm's financial performance.

4.13 INFERENTIAL STATISTICS

Inferential statistics, better defined as mathematical methods, use probability theory for assuming (inferring) the properties of a population based on a sample. Generally, the researcher is testing a hypothesis, therefore, drawing conclusions about a population, based on the researcher's sample. Measure tests like ANOVA, t-tests, Chi-squared tests, confidence intervals, and regressions are all statistical inferential tests. After compiling the descriptive statistics, identifying and summarising all the trends and findings on the data set, a good indication is available for selecting the proper measurement tools and models to utilise and apply the most accurate testing on the selected data set.

In this study, the researcher tested the possible relationship between directors' remuneration and firms' financial performance, thus first formulating a hypothesis, followed by selecting an appropriate regression model by considering the type of research data used in the study, and finally conducting the regression analysis. Furthermore, the researcher may need to identify any outliers in the data set, and if necessary, to apply trimming in order to correct the data set. To perform all the required

statistical tests, SPSS Statistics (2013) was used. SPSS Statistics is a popular software package used for statistical and research analysis.

Shareholders and directors have various interests and objectives. Shareholders are more focused on value maximisation, whereas directors may focus more on personal benefit and welfare (minimising efforts for maximum leisure). As mentioned previously in the study, this gives rise to the agency problem (Jensen & Meckling, 1976:305). Using various types of remuneration for directors could help to align the interests of shareholders and directors. Against this background, the following hypotheses were formulated for the study:

H_0: There is no relationship between directors' remuneration and the financial performance of firms

H_1: There is a relationship between directors' remuneration and the financial performance of firms

In order to test these hypotheses, all the data collected for this study had to be compiled, converted and interpreted to conclude whether the null-hypothesis could be rejected or not rejected.

4.13.1 Regression analysis

According to Sykes (1992:1), a regression analysis is a statistical tool when investigating the relationships between variables. The nature of a regression analysis is summarised as the relationship between independent and dependent variables. This makes it possible for the researcher to develop a mathematical relationship between these variables. The researcher usually tries to establish what relationship one variable will have with the other. When a regression analysis is explored, the researcher should select variables of interest and apply the regression analysis to determine the quantitative relation the one variable has to the other. When assessing the regression between variables, researchers test the statistical significance altogether to determine the degree of confidence when comparing the true relationship to the estimated relationship (Trochim, 2006).

Regression analysis can be divided into two models, viz. simple and multiple. According to Hair *et al*. (2006:177), simple regression is used when there is only one

independent variable under consideration. When two or more independent variables are identified, multiple regressions will be applied.

(a) Simple regression

Simple regression (also known as bivariate regression) models only have one independent variable. This means that the relationship can only be determined by testing one dependent and one independent variable. With simple regression, only two variables are therefore included in the regression model, namely one independent and the dependent variable – designated as *x* and *y* respectively for explanation purposes below:

$$y = b_0 + b_1 x + e_t \qquad \text{(Equation 4.7)}$$

Focusing for a moment only on the x-y relationship in the format: $y = b_0 + b_1 x$, y is the equation of a straight line where b_0 is the intercept (or constant) and b_1 is the x coefficient, which represents the slope of the straight line the equation describes. The outset of this type of regression model can be formulated in a hypothesis to see the relationship between the variables of interest in the study. Equation 4.7 thus shows the relationship between the independent variable and the dependent variable since the regression coefficient will identify the relationship, depending on the significance the independent variable has on the dependent variable. Furthermore there will always be something inexplicit in the regression, thus including the error term (e_t) factor as seen in Equation 4.7. The error term in the formula may be useful to the researcher when identifying which regression analysis model is best suited for this study (Kenney & Keeping, 1962:252).

(b) Multiple regressions

Multiple regression analysis is an expansion of the simple regression model. Multiple regression is used when more than one independent variable is used. Since this research study investigates the relationship between a dependent variable with four sub-components and four independent variables, a model like the one below will be the most fitting for the study:

$$y = b_0 + b_1 x_1 + b_2 x_2 + \ldots + b_k x_k + e_t \qquad \text{(Equation 4.8)}$$

where:

y	= dependent variable
b_0	= intercept
$b_1, b_2 \ldots b_k$	= regression coefficients
$x_1, x_2 \ldots x_k$	= independent variables
k	= number of independent variables
e_t	= error term

(c) Time-series cross-section regression analysis

According to Beck (2006:1), a time-series cross-section (TSCS) data set consists of comparable time-series data observed on a variety of units. Time-series and cross-sectional dimensions are very important for the purpose of this study because trends and changes during the period can be identified. It is, however, important to first identify the nature of the data set before it can be analysed. Due to the fact that TSCS data are at play, the researcher must acknowledge that the data sets used will display a wide variety of observations regarding all the firms involved over the different years of the study period. This type of data is called panel data. The term 'panel data' refers to multi-dimensional data that frequently involve measurements over time. Panel data contain observations on multiple phenomena observed over multiple time periods (Diggle, Heagerty, Liang & Zeger, 2002:2). Regression analyses for these types of data sets are generally much more complex than for one-dimensional data sets.

It is important to identify the procedure that was followed in the research by making relevant observations regarding the type of data used. Panel data methodology was selected for the purpose of this study since the data was identified as panel data. All the firms' selected variables were observed over a nine-year period. Once the type of data used are known, the regression models and methods could be determined.

Regression on panel data combines time-series data and cross-sectional data. Changes in variables over time and differences between subjects are examined at once. In the case of panel data regressions, the following general model as described by Allen (1999), is usually considered:

$$Y_{it} = \alpha + \sum_{k=1}^{K} X_{itk}\, \beta_k + e_{it} \qquad \text{(Equation 4.9)}$$

where:

y = dependent variable for firm i in year t;

x = independent variable for firm i in year t;

α = intercept;

β = regression coefficient;

e = error term

$i = 1,\ldots, N$;

$t = 1,\ldots,T$;

N = number of cross sections;

T = length of the time-series for each cross-section; and

K = number of independent variables;

Section 4.13 enabled the researcher to identify which regression analysis method was most appropriate for the panel data in this study. The regression analysis process best suited for the regression analysis and data set is discussed below.

4.14 REGRESSION ANALYSIS PROCESS

The regression analysis process for this study started by collecting the data set, and was then followed by trimming the identified outliers. The next step was to test for the most appropriate regression model, before continuing to conduct the regression. Lastly, testing for heteroskedasticity was done and if required, to adjust the regression results.

4.14.1 Defining and identifying outliers

After investigating and identifying all the descriptive statistics for the study, especially the kurtosis and sample distribution, it was important to focus on the outliers in the data set. Researchers have debated continuously regarding extreme and influential data points when analysing data (Osborne & Overbay, 2004). These points are commonly known as outliers. Jarrel (1994:49) defined the term ‘outliers’ as data points far outside the norm for a population, while Hawkins (1980:1) described outliers as observations that arouse suspicion due to the fact that they deviate tremendously from other observations. For the purpose of the study, outliers are defined as observations that are numerically distant from the rest of the data set. Outliers usually occur when the distributions are heavy tailed and have a high kurtosis.

It must, however, be mentioned that although outliers could have a significant influence on the findings of a study, a small number of outliers are to be expected when working with large data sets. Since outliers are seen as the extreme observations, they frequently may be the minimum and maximum values of the data range when identified as significantly high or low, but minimum and maximum values of data sets are not always outliers. This is because they are not always far from other observations. Outliers stem from various reasons and include system behavioural changes, fraudulent behaviour, human or instrumental error and natural deviations in the data set (Grubbs, 1969:6).

The outliers were identified before regression testing commenced in this study. Outliers can have significant influences when conducting inferential statistics and can have deleterious effects on a study's statistical analysis. After examining outliers closely, Wainer (1976:285) developed a concept called 'fringelier', which refers to unusual events occurring regularly near the distribution centre of the data set. These observation points are near three deviations from the mean and have a disproportionate influence on parameter estimates. These data observations are usually not easily identifiable, due to the close proximity to the distribution centre and are identified as special outlier observations. The data in the current study were analysed and histograms were used to illustrate the breakdown by identifying the outlier area and median for all the dependent variables. These outliers can then be trimmed to obtain more robust statistics.

A number of reasons for identifying and eliminating (deleting) outliers exist. Firstly, they increase error variance and reduce the statistical tests' power. Secondly, outliers decrease normality in non-random distributions and easily violate assumptions of sphericity when doing multivariate analysis and normality testing by increasing type I errors. Lastly, outliers can easily influence estimates, having an impact on the research results (Zimmerman, 1994). General trimming and winsorising-trimming are two very helpful methods to address this important issue.

4.14.2 Types of trimming

(a) Normal trimming

Trimming in statistics derive from excluding some of the extreme values in the data set. By trimming the data, the extreme values are identified and acknowledged as outliers (Lix & Keselman, 1998:409). There are two popular ways in which trimming are done: firstly, fixed amount of symmetric trimming as research done by Lee and Fung (1985:186) suggested. In this method, a trimmed mean is measured and summarised when trimming on a data set is carried out. Prior to this, trimming is determined as a fixed amount and limits the error rate. This type of trimming is being performed regardless of the distribution of the data set. This robust estimator method is used by many researchers, although one needs to be careful of not eliminating data that are not outliers.

The second trimming method is performed in accordance with the distribution of data. When the data set has a skew distribution, the amount of trimming on both sides of the distribution is not the same. More trimming will be done on the skew tail as illustrated in a study by Keselman, Wilcox, Lix, Algina and Fradette (2007:267).

(b) Winsorising-trimming

Another method used by various researchers is winsorising-trimming. Winsorising is a similar technique to normal trimming and is used to transform statistics by limiting all the extreme values in the data set and automatically reducing the effect of possibly spurious outliers. The difference between the two methods is that normal trimming is more simplified by excluding data, compared to winsorising where the extreme values are not discarded, but the extreme values are instead replaced by certain percentiles (Hasings, Mosteller, Tukey, Winsor, 1947:413).

In this study, winsorising was applied where needed for the purposes stated above. Researchers use various methods and procedures to protect their data from being distorted by outliers, but not throwing observations and data away (Barnette & Lewis, 1994:2). The mean and pooled OLS model estimations are very vulnerable to outliers. For this reason, researchers use more robust statistical methods for estimators on the data. Trimming is commonly used in this regard. Identifying outliers and performing winsorising in this study were important in order to clean the data set.

Furthermore, the researcher of this study did not focus on virtually identifying specific outliers, but rather applied winsorising. In this method, all values further than three standard deviations from the mean value were replaced with the value of three standard deviations from the mean. This method ensured that no observations were thrown out, but only drawing the values closer to the rest of the data. This means that the statistical testing could still be performed on a large set of observations.

4.14.3 Type of regression model

There are several approaches when considering what type of regression analysis model should be used for the data set. The objective is to acquire the best suited and most flexible regression model for the selected data used (e.g. regression test pack) that focuses on the selected regression test and to address the objectives set for this research study.

In this study, the focus was on the following two regression models used to analyse panel data:

- A random effects model; and
- A fixed effects model.

In a random effects model, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated including the independent variables in the model. The main distinction between fixed and random effects models is whether the undetected differences effect symbolises elements that are correlated with the limits in the model, and not whether these effects are stochastic or not (Greene, 2002:162). When the researcher had any doubt or reason to believe that differences across entities had some influence on the dependent variables in the study, a random effects model was used.

An advantage of using a random effects model is that the time-invariant variables are included (Bartels, 2008:8). When omitted variables are constant over time but vary between cases, and others are fixed between cases but vary over time, then one can include both types by using a random effects model.

A fixed effects model is used when a researcher is primarily interested in analysing the impact of variables that vary over time. The technique investigates the relationship

between predictors and outcome variables within a firm. Each firm has its own distinct characteristics that may or may not influence the variables. When using a fixed effect model, the researcher assumes that something may impact or bias the predictor or outcome variables and control is needed in this regard.

The fixed effects regression model eliminates the effect of time-invariant characteristics from the variables so that the effect can be tested. This model also assumes that time-invariant characteristics are unique to the individual firm and are thus not correlated with other individual characteristics. Every firm varies; therefore the firm's error term should not be allied with other firms. One negative feature of a fixed effects model is that it cannot be used to investigate time-invariant causes of the dependent variables. If error terms are correlated, the fixed effects model is not appropriate since inferences may not be correct, and thus the random effects model should rather be used.

To distinguish which one of the two models would be used in this study, the F-test for fixed effects and the Hausman test for random effects were performed to determine which of the two models (fixed or random effects) was best suited for the regression analysis.

(a) F-test for fixed effects

The F-test for fixed effects was developed to test and compare the fit of models. The F-test compares the regression models when fitted to the same data set. It also allows the researcher to test hypotheses involving multiple parameters simultaneously. Reasons for selecting the F-test include the following: firstly, the F-test's function is to determine whether two samples have different variances; secondly, it is sensitive to non-normality, and thirdly, the F-values are all non-negative (deriving from chi-square properties carried over to the F-test) and distribution is non-symmetric (Gardiner, Luo & Roman, 2009).

(b) The Hausman test

Given a model and data in which fixed effects estimation would be appropriate, the Hausman test investigates whether a random effects estimation is just as good. When applying the Hausman test on a random effects example, the null hypothesis (H_0) states that while random effects would be consistent and efficient, the alternative

hypothesis states that random effects would be inconsistent (fixed effects would almost certainly be consistent). When the Hausman test statistic is large, the fixed effects model is used. If the statistic is small, the random effects model is used.

The Hausman test originates from the Hausman (1978:1251) specification test, which compares an estimator b_1 that is known to be consistent with an estimator b_2 that is efficient under the hypothesis being tested. The null hypothesis states that the estimator b_2 is an efficient and consistent estimator of the true parameters. If so, there is no systematic change between the two estimators. When a systematic difference exists, there is reason to doubt the assumptions that the efficient estimator is based on.

Furthermore, the Hausman test is used to help determine whether the fixed or random effects model is most suited for the research data. When first doing an F-test and the outcome states that the fixed effects model is not the correct option, it does not necessarily mean that the random effects model is the correct model instead. There may be other effects models such as pooled OLS. It is important to first determine the variance and variability of the data set.

At this stage, the presence of homoskedasticity or heteroskedasticity in the data was tested.

(c) Homoskedasticity versus heteroskedasticity

In this section, evaluating the data to determine the presence of homoskedasticity or heteroskedasticity as a characteristic of the data, is discussed. Homoskedasticity is usually based on the assumption that analysis will be done in an equal variance method where random variables are within a vector or sequence. In regression analysis, homoskedasticity means that the dependent variables' variances are the same for the whole data set. Researchers should be careful not to make assumptions identifying homoskedasticity instead of heteroskedasticity (McCulloch, 1985:483).

When there are sub-populations in a data set which have different variability from others, the collection of random variables is called heteroskedasticity. When heteroskedasticity is identified, the variability could be quantified by the variance of statistical spreading. Furthermore, it concludes that heteroskedasticity is relevant when homoskedasticity is absent. Heteroskedasticity can invalidate statistical tests of

significance in a study. This leads to the assumption that the modelling errors are uncorrelated and normally distributed, which was not necessarily the situation in the study.

An example of testing heteroskedasticity would be to look at error terms associated with very large firms that might have larger variances than error terms associated with smaller firms. Sales of larger firms may be more volatile than sales of smaller firms (McCulloch, 1985:483).

After the normal regression test was done for the data set, heteroskedasticity testing was performed, due to the fact that various firms in the study differed in terms of their size, growth and methods of remuneration for their directors. Heteroskedasticity often occurs when large differences among the size of firms selected occur, as was indeed the case with this study. Heteroskedasticity can therefore cause the results to appear better than it is in reality. Therefore, it was necessary to adjust regression results to reflect the heteroskedasticity in the data.

The Breusch-Pagan test is used in statistics to test for heteroskedasticity in linear regression models. Developed in the late 1970s, the test was named after Trevor Breusch and Adrian Pagan. Heteroskedasticity tests whether the estimated variance of the residuals from a regression is dependent on the values of the independent variables.

When testing for heteroskedasticity, statistical techniques like the pooled OLS test may be eliminated due to the fact that a number of assumptions are generally made when using this technique. Pooled OLS is a method to estimate unknown parameters in a linear regression model and errors are homoskedastic. One important assumption is that the error term in the pooled OLS technique has a constant variance and is normally distributed, which was not necessarily the case in this study. Generally, pooled OLS is not recommended when cross-sectional or time-series (panel data) measurements are performed (White, 1980:817).

The inferential statistics segment for the study was applied by taking the data set, applying trimming to address outliers, then applying the F-test and Hausman test on the data set and identifying the preferred regression model (fixed or random effects), depending on which one was best suited for the specific analysis. Furthermore, the

data were then tested for heteroskedasticity. The inferential statistics were applied in the following segments: firstly, investigating the whole group, followed by dividing the set in executive and non-executive directors. In all three areas, the components of the directors' remuneration were measured.

The inferential statistics segment concluded by evaluating the quality of data, measures, tests and models in this study by means of focusing on the reliability and validity of the entire study.

4.15 EVALUATING THE QUALITY OF MEASURES

It is important that the findings of a study are accurate and usable. In similar vein, the measurement instruments should be able to identify that the indicators are reliable and valid. The following section discusses the importance of validity and reliability characteristics when evaluating measurement instruments.

4.15.1 Reliability

According to Kimberlin and Winterstein (2008:2276), there are various methods to ensure that measurements are reliable and do not include error. Reliability estimates are used to firstly evaluate the stability of measures or using the same standard (test-retest reliability). Secondly, the equivalence of sets of items from the same test (internal consistency) or of different observers scoring a behaviour or event using the same instrument (inter-rater reliability) is used.

The data set for the study was collected from two databases that are extensively used by researchers and individuals, namely the McGregor BFA (2012) and TimBukOne (2012) databases. These sources provided standardised financial statements, ratios and measures for this study.

4.15.2 Validity

The term 'validity' is defined as the extent to which an instrument measures what it purports to measure (accuracy), whereas the term 'statistical validity' is described as the extent to which a concept, conclusion or measurement is justifiable and tallies accurately to the real world (Brains, Willnat, Manheim & Rich, 2011:75).

Although validity requires that an instrument must be reliable, it is important to note that an instrument can be reliable without being valid. Validity is the extent to which the analyses of the results of a test are justified, which depends on the test's intended use.

The selection of measurement instruments (financial ratios and statement figures) selected for this study was based on previous empirical studies with similar research subjects using the same measurement instruments. This should make the study more valid. Validity is divided into two categories in financial and statistical studies, namely internal validity and external validity (Cant *et al*., 2005:235).

(a) Internal validity

Internal validity focuses on how effective an experiment is executed. It also looks especially whether confounding is avoided (when more than one independent variable [cause] acts at the same time). The smaller the chance for confounding in a study, the higher its internal validity will be.

Therefore, internal validity displays how a part of the research allows the researcher to choose among alternative explanations of data. High internal validity makes it possible for the researcher to choose one explanation above another with enough self-assurance due to the fact that many of the perplexed variables in the study are avoided. According to Kimberlin and Winterstein (2008:2276), internal validity consists of three forms:

(i) Construct validity:

This form of validity focuses on the judgment based on accumulation of evidence from various studies using specific measuring instruments. Construct validity requires examining the relationship of the measure being evaluated with variables known, or hypothetically related to the construct measured by the test. Construct validity will test whether the theory in practice works when applied practically in this study. Analysing prior studies relationship findings and measures used in the same field of research assists in determining the best measures and instruments used for this research study.

(ii) Content validity:

This type of validity reports how effective measurement instruments are developed to provide adequate and representative sample coverage for the topic that is measured and constructed in the study. Due to no statistical test to determine whether a measure adequately and appropriately covers or represents the content area, content validity usually depends on the judgment of knowledgeable experts in the field. Content validity assists in ensuring that all necessary areas are covered with the measures used in this study. Using previous research, content validity could assist in using the most effective measures for this study.

(iii) Criterion-related validity:

This validity measure provides evidence on how new measures correlate with other measures from similar constructs or the same underlying concepts that theoretically should be related. This validity focuses on the success of the measures used for estimations. Examining the relationship between the measures and the criterion assisted in setting the criterion validity. With criterion validity the tests are compared with other similar measures already valid and tested in the field.

(b) External validity

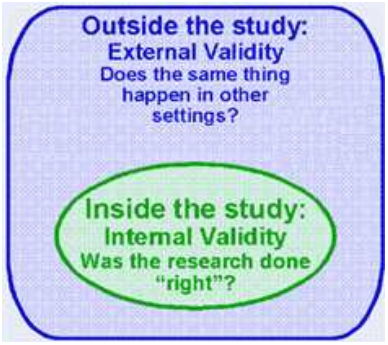
External validity is the extent to which the results of a study can be generalised to other situations and to other people. This form of validity also indicates the quality of the research findings. Implications regarding the cause-effect relationships due to specific and unique scientific studies are said to hold external validity if they can be generalised and used in other populations and conditions. Fundamental interpretations are set to retain high degrees of external validity and can reasonably be expected to apply to a target population as well as to other populations (Coldwell & Herbst, 2004:41).

This research study focused specifically on the relationship between the remuneration of directors and the financial performance of firms in the Industrial Sector of the JSE. It is currently an important topic internationally in all business sectors. Although the study only focused on the Industrial Sector, it relates to thousands of shareholders and stakeholders, and the study's results may be an indicator to other countries' Industrial Sectors. In some cases, results could also point towards the trend on how South

African firms remunerate their directors when firms are performing. These type of generalisations must, however, be made with great caution.

Figure 4.5 summarises external and internal validity and the relationship between the two types of validity. The green ellipse represents internal validity, and the blue rounded rectangle around it represents external validity.

FIGURE 4.5: Internal and external environment validity



Source: Micheal (1999)

4.16 STEP 9: COMPILING AND PRESENTING THE RESEARCH FINDINGS REPORT

Step 9 is the second last step of the research process and is vital for the study. This is the stage where the findings and results are interpreted and the significance is explained for decision-making purposes. The success of findings and results are measured by the interpretation of results and conclusions that are drawn. These results are given in the form of a research report. According to Wiid and Diggines (2013:312), the research report must be relevant, structured, clear, comprehensible, complete and timely. There is no use in merely stating the findings; it is important that these findings and results are interpreted and explained.

Chapter 5 and 6 will present and discuss all the findings for the data set. Chapter 5 will specifically explain all the descriptive statistic for the dependent and independent variables by means of tables and graphs, followed by the inferential statistics focusing on the regression tests, which are illustrated in a series of tables. Chapter 6 will provide a conclusion, presenting the overall findings and summary for this study.

4.17 STEP 10: FOLLOW-UP AND MONITORING

It is important to note that the nine steps of the research process cannot be approached in isolation, but that they should be used in an integrated and interdependent way. The method is reciprocal due to the fact that the one step influences the following one directly. Thus, when changing one step, the entire process needs to be revised, adjusted and followed-up on. In order to ensure that the entire research process is generating the optimum results for the researcher, proper monitoring is required.

4.18 CONCLUSION

This chapter focused on the methodology for the research study. Chapter 4 commenced with a definition and explanation of business research to promote effective management, followed by a discussion of the research process that comprised ten steps. The research process is vital for any kind of research study, as it guides the researcher throughout the process, from identifying the objectives to how they will be achieved. Both secondary and primary data were needed in order to achieve the set outcomes for this study. However, a sample method was used to retrieve the necessary data instead of taking a census of the population, ensuring that all the requirements set for the study's data were met. All Industrial Sector firms, listed and delisted on the JSE during the time period 2002 until 2010, were considered, as these firms had standardised financial reports available. Financial performance results and financial ratios were selected and used as the measurement variables. The financial information needed was obtained from McGregor BFA (2012) and TimBukOne (2012) in a standardised format. The data were analysed by using the software package SPSS Statistics (2013).

For the purpose of the study, descriptive and inferential statistics were used to address the primary and secondary objectives of the study. The descriptive statistics focused on the type of data that were measured, using the following measures: median, mean, range, variance, standard deviation, kurtosis and skewness. The inferential statistics identified in this study included selecting the most appropriate regression model, namely a random- or a fixed-effects model, by conducting an F-test or Hausman test for the regression testing, before also testing for heteroskedasticity. The regression analyses focused and supplied statistical evidence regarding the nature and type of relationship between the dependent and independent variables.

This chapter concluded by explaining why it was necessary to use two types of statistical measures, namely descriptive and inferential statistics. The importance of motivating the validity and reliability of these measures, including that of the data used in the study, was also emphasised.

The data analysis and research results, followed by the summary and findings regarding the relationship between financial performance and directors' remuneration, will be discussed in Chapter 5 and Chapter 6 respectively.

CHAPTER 5: RESEARCH RESULTS

5.1 INTRODUCTION

In the previous chapter, a detailed discussion was provided on the research process of the study, in order to address the research question. Chapter 5 presents the findings of the study and focuses on the research results obtained through the various steps explained in Chapter 4.

The hypotheses developed for the study tested whether a relationship existed between the remuneration of directors of the selected firms, and the financial performance of those firms. To test whether the hypotheses should be rejected or not rejected, various statistical models and measures were used for the data set.

Chapter 5 will commence by further discussing the descriptive statistics for the study. The results in the first section of the chapter illustrate the basic features of the data and provide simple summaries about the sample. In addition, skewness and kurtosis were tested to determine the distribution of the data.

The second section of Chapter 5 will focus on the inferential statistics estimated for the data set. In this section panel data analyses were conducted, which included multiple regression analyses, significance tests and tests for heteroskedasticity. All of these analyses enabled the researcher to test the relationship, if any, as well as the strength of the relationship between the dependent and independent variables in this study. All the results obtained relate to the research objectives listed in Chapter 4.

5.2 DESCRIPTIVE STATISTICS: REMUNERATION

As mentioned in Chapter 4, numerical descriptive statistics were used to summarise and display the data. By using descriptive statistics, the data can be optimally used when determining which inferential measures will be most suited for the study as well as compiling and strengthening statistical findings obtained in this study.

The first section in Chapter 5 focused on the dependent variable in this study. The dependent variable, namely the total amount of directors' remuneration, was observed to investigate changes in the remuneration for the period of this study. As identified in Chapter 4, the dependent variable was divided into four remuneration sub-

components. These four sub-components were classified as basic salary, bonuses, share gains or share options exercised, and other remuneration.

This section will commence by focusing on the total remuneration to investigate the overall movement in directors' remuneration. Subsequently the focus is shifted to the four sub-components for a more focused approach, investigating each sub-component individually.

The descriptive statistics section includes tables and graphs displaying the mean, median, minimum and maximum values (range), variance, and standard deviation of the data set. Detailed discussions following each table and graph provide greater clarity regarding the data set.

It must be noted that it was frequently necessary to differentiate between executive and non-executive directors for reasons that will be motivated in each section. The tables that follow display a condensed summary of the data set. By analysing and examining the statistics, justified conclusions can be made. Factors such as distribution, growth, competitive tactics and industry benchmarks all affect directors' remuneration, influencing the findings. These topics are all addressed in this section. This section concludes by testing for skewness and kurtosis in the data set, which contributes to identifying possible measures that might be utilised for the inferential statistical section that follows.

5.2.1 Total Remuneration

The entire data set comprised a total of 6 146 observations. Every observation contained all the dependent and independent variables considered in this study. Each observation disclosed the director's individual remuneration, which was divided into the dependent variable's four sub-components and then compared to all the independent performance variables identified. The section first investigates the descriptive statistics for the dependent variable and its sub-components provided and will follow with the independent variables' descriptive statistics in the next section.

(a) All Directors

The starting point for the descriptive statistics in this study is to focus on the total remuneration all directors combined received. This enabled the researcher to create

an overall view of remuneration results before splitting the directors into executive and non-executive directors, and focusing specifically on the different remuneration methods.

Table 5.1 below illustrates the total remuneration paid to all directors for the period 2002 until 2009, displaying the various descriptive measures utilised in this study.

TABLE 5.1: All directors: Total remuneration

All directors							
Total remuneration							
Year	**N**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	639	782	263	0	14 272	1 482 213	1217
2003	652	935	300	0	15 723	2 155 735	1 468
2004	655	1 023	273	0	15 657	2 389 585	1 546
2005	618	1 275	331	0	12 249	3 934 841	1 984
2006	607	1 807	327	0	26 680	11 082 214	3 329
2007	664	1 991	300	0	99 181	31 027 010	5 570
2008	763	1 711	293	0	47 780	13 633 948	3 692
2009	809	1 630	316	0	93 996	20 601 930	4 539
2010	739	1 559	352	0	26 766	7 015 069	2 649
Overall	**6 146**	**1 426**	**309**	**0**	**99 181**	**10 869 031**	**3 297**

Note: All figures except for N (number of directors) are given in thousands, and refer to South African Rands

Table 5.1 displays the total number of directors, both executive and non-executive, as identified in this study over the nine-year period. Before investigating the descriptive statistics, it is important to consider the change in the overall number of directors appointed during this selected period. The number of directors increased overall from 2002 until 2010 by 100 directors. The number of directors fluctuated during the study period due to various internal and external factors affecting the firms and the industry. Internal factors influencing these changes included restructuring of organograms in management, growth in the firm and business strategy changes whereas external factors such as economic changes and competitors also influenced these changes. The number of directors was almost unchanged for most parts of the early 2000s, and grew significantly over the last few years of the decade. At this stage, it must be noted that these findings show the total change in the number of directors, thus considering the overall change for executive and non-executive directors collectively.

The average remuneration paid to a director more or less doubled from 2002 to 2010, while the median value rose by almost 17 per cent. These results illustrate a gradual increase in total remuneration over the nine-year period. When considering the first half and the second half of the study period, however, it can be observed that the greatest increases in the remuneration occurred during the first part of the period, followed by a slight decline during the mid-2000s. The decline in remuneration may be a result of the global financial crisis in 2008. The difference between the mean and median may point towards a skew distribution of the data.

The minimum remuneration values reported in most of the tables that follow are zero mainly due to two reasons. Firstly, the fact that non-executive directors' remuneration was included in these tables, and secondly, that some directors were listed in the firms' remuneration annexures, but did not receive any remuneration for specific time frames (e.g. global financial crisis period). The standard deviation indicates that a significant level of variation is apparent when calculating the coefficient of variance. The relatively large standard deviation substantiates the concern that the data set may contain outlier values.

Now that all directors' total remuneration has been considered, Figure 5.1 graphically illustrates the difference between the annual mean and annual median for remuneration paid to the all directors during the period 2002 until 2010. The mean in Figure 5.1 almost doubled in the study's period. The overall mean for the period is also significantly higher compared to the first year of the study. This suggests that significant growth in directors' remuneration is visible for the period under review. The median stayed in a closer range not being as volatile as the mean, although a gradual increase occurred throughout the study.

FIGURE 5.1: All directors' Total remuneration: Mean, median and overall mean

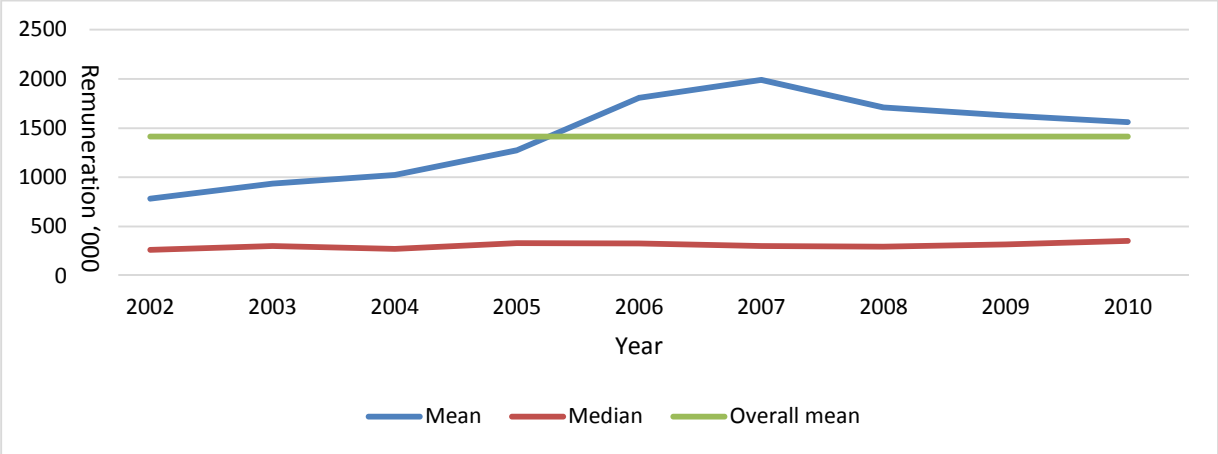


Figure 5.1 illustrates the clear gap between the mean and median values for the collected data, which was also observed in Table 5.1. For most parts of this study, the gap grew annually, but significantly changed in the mid-2000s, with a steep increase. For the first few years the annual mean values are lower than the mean for the overall period. From 2005 onwards the annual mean increased and stayed above the average mean for the duration of this study. The first potential reason for this appearance would be that all types of directors, both executive and non-executive, are included in this graph and as seen in the previous table, non-executive directors earned significantly less than executive directors. The second justifiable reason may be that a small number of the directors earned considerably more than other directors from 2005 in the Industrial Sector, thus increasing the average for the sector.

In order to differentiate between the different forms of directorship within the firms and industry, the directors were sub-divided into two types, namely executive and non-executive directors, to compare remuneration paid.

(b) Executive Directors

Executive and non-executive directors are remunerated differently, according to their functions in a firm. Table 5.2 shows more detailed information regarding the total remuneration of the executive directors.

Table 5.2: Executive directors: Total remuneration

Executive directors							
Total remuneration							
Year	**N_0**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	339	1 394	992	0	14 272	1 962 950	1 401
2003	341	1 673	1 220	0	15 723	2 898 116	1 702
2004	326	1 919	1 255	0	15 657	3 146 447	1 774
2005	300	2 400	1 503	0	12 249	5 411 974	2 326
2006	292	3 472	1 769	0	26 680	17 070 468	4 132
2007	308	3 997	2 015	0	99 181	58 375 329	7 640
2008	334	3 590	2 290	0	47 780	23 645 607	4 863
2009	341	3 502	2 202	0	93 996	42 219 020	6 498
2010	304	3 382	2 421	0	26 766	11 020 035	3 320
Overall	**2 885**	**2 792**	**2 006**	**0**	**99 181**	**19 141 018**	**4 375**

Note: All figures except N_0 (number of executive directors) are given in thousands, and refer to South African Rands.

From Table 5.2, it can be seen that the number of executive directors remained stable for most parts of the study. At the same time, the mean remuneration almost trebled over the same period. The mean increased significantly by 142.61% from 2002 until 2010. Table 5.2 suggests that a relatively smaller group of executive directors received substantially higher pay. The same large range between the maximum and minimum remuneration paid that was observed in Table 5.1 is observed for executive directors in 2007 and 2009, indicating that these large amounts were paid to executive directors. The overall high variance in pay was also observed for this period. By comparing Table 5.1 with Table 5.2 it becomes evident that the largest portion of all remuneration paid to directors is allocated to executive directors, because they are responsible for the firms' daily operations and performance.

(c) Non-executive Directors

Since non-executive directors are being remunerated differently than executive directors, their descriptive statistics are investigated separately in Table 5.3 below.

Table 5.3 focuses on the total remuneration non-executive directors received for the study's time period. It must be noted that some non-executive directors did receive basic salary, bonus/performance and share gains over and above their remuneration received as part of the other remuneration.

TABLE 5.3: Non-executive directors: Total remuneration

Non-executive directors							
Total remuneration							
Year	**N_1**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	300	91	46	0	2 181	39 789	199
2003	311	126	60	0	4 204	92 721	305
2004	329	136	80	0	2 322	60 144	245
2005	318	213	90	0	4 599	224 992	474
2006	315	263	120	0	9 057	599 231	774
2007	356	256	120	0	13 550	953 778	977
2008	429	248	130	0	19 267	975 557	988
2009	468	267	150	0	11 544	486 515	698
2010	435	285	175	0	6 890	279 429	529
Overall	**3 261**	**217**	**103**	**0**	**19 267**	**441 338**	**664**

Note: All figures except for N_1 (number of non-executive directors) are given in thousands and refer to South African Rands

Table 5.3 illustrates an emerging trend in the directorship strategy of the firms included in this study. Overall, the number of non-executive directors increased noticeably during the selected time period, while the number of executive directors decreased. Non-executive directors' total remuneration is significantly lower than was the case for the executive directors in Table 5.2, as these directors are not involved in the daily operations and management of the firms. This type of directorship is mostly remunerated for services rendered, consultative sessions and meetings that are attended. During the nine-year timeframe of this study, the mean for the total remuneration paid to non-executive directors increased by 213.19%.

Investigating the descriptive statistics, the average remuneration for non-executive directors increased more than three times during the selected time period, displaying substantial growth compared to executive directors' remuneration. Another outcome is the changes and fluctuations in the range of remuneration paid to the non-executive directors for the time period. These are justified by several cases where non-executive directors received basic salaries, bonuses, share gains, or other remuneration.

Due to the presence of outliers, as already identified by examining Tables 5.1, 5.2 and 5.3, the median values may be a more suitable measure to interpret when evaluating remuneration. The reasoning behind this decision is that the median is not as sensitive to extreme values as the mean. Mean values will however not be ignored in this study, and will be considered in combination with the median since it strengthens the view of

skew remuneration trends. The sections that follow focus on the four sub-components of total remuneration as identified in Chapter 4.

5.2.2 Basic Salary

In general, basic salaries are only paid to executive directors, but due to some individual non-executives also receiving basic salaries, all directors' basic salaries are reflected below.

(a) All directors

The basic salaries paid to all directors are shown in Table 5.4. Only a small number of non-executive directors received basic salaries. This is mainly due to non-executives acting as executive directors for short periods of time or retiring within the financial year and switching from executive to non-executive directors. Table 5.4 below makes a distinction between executive and non-executive directors in the second and third columns to show the small impact non-executive directors' basic salary has on the overall total of basic salaries paid to all directors.

TABLE 5.4: All directors: Total basic salary

All directors								
Basic salary								
Year	**N_o**	**N_1**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	325	6	759	620	27	5 326	347 392	589
2003	322	10	889	781	18	4 108	399 696	632
2004	315	11	961	799	26	4 168	405 430	637
2005	293	16	1 005	841	15	4 870	484 714	696
2006	281	8	1 190	978	15	5 988	697 184	835
2007	287	4	1 301	1 107	44	6 660	860 267	928
2008	311	9	1 443	1 220	24	6 692	868 623	932
2009	325	14	1 500	1 266	60	7 200	1 084 734	1 042
2010	296	8	1 704	1 507	30	8 062	1 211 418	1 101
Overall	**2 755**	**86**	**1 190**	**306**	**15**	**8 062**	**790 462**	**889**

Note: All figures except for N_0 and N_1 (number of directors) are given in thousands, and refer to South African Rands

To differentiate between the two types of directors, Table 5.4 has two N columns. The first column (N_0) represents the number of executive directors that received a basic salary, while the second column (N_1) represents non-executive directors that received basic salaries. All directors' basic salaries are reflected in the mean and median. As

Table 5.4 illustrates, the basic salary component of directors' total remuneration is predominantly aimed at the executive directors. In this study, non-executive remuneration falls under the component other remuneration and is therefore not included in this table. There are, however special cases where non-executive directors did receive a basic salary, but it is not considered normal practice.

Table 5.4 reflects minimum values larger than zero because only directors receiving remuneration in the form of this specific sub-component of remuneration were included. It is evident that, on average, the largest percentage of directors' remuneration comes from this component. Table 5.4 clearly illustrates that the basic salary sub-component more than doubled during the study's time period from 2002 until 2010. The variance and standard deviation gap widened gradually throughout the years, mainly due to a mean value that more than doubled for the period.

5.2.3 Bonus/performance bonus

Bonuses and performance bonuses are usually one of the first areas where researchers and analysts would start to test for a relationship between financial performance and directors' remuneration in a firm. In general, bonuses are paid to directors when the goals that were set are exceeded, or when they achieved performance over and above the agreed targets. This idea suggests that Table 5.5 is an important focus area in this study.

(a) All directors

As mentioned earlier, a differentiation between executive and non-executive directors was made due to the fact that non-executive directors are generally not remunerated with this type of remuneration. This can be seen in Table 5.5, where only a few non-executive directors are indicated. However, some exceptions were noticed in this study.

TABLE 5.5: All directors: Bonus/performance bonus

All directors								
Bonus/Performance bonus								
Year	**N_o**	**N_1**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	205	0	434	325	-80	2 646	176 986	421
2003	237	3	568	313	6	12 191	1 045 668	1 023
2004	216	4	606	437	1	3 310	377 527	614
2005	217	7	798	500	1	7 819	923 925	961
2006	201	3	1 158	784	5	10 958	2 097 360	1 448
2007	224	3	1 307	705	4	13 862	3 249 353	1 803
2008	231	3	1 418	876	-162	34 885	6 806 536	2 609
2009	254	3	1 176	500	1	31 972	5 736 228	2 395
2010	216	0	1 283	672	14	9 173	3 012 940	1 736
Overall	**2 001**	**26**	**978**	**500**	**-162**	**34 885**	**2 804 753**	**1 675**

Note: All figures except for N0 and N1 (number of executive and non-executive directors respectively) are given in thousands, and refer to South African Rands

In Table 5.5 continuous up and down movements were observed while investigating the number of executive directors receiving bonuses over the study period. The slight overall increase, when comparing the first year (2002) and the last year of the study period (2010), stands in contrast with the decrease in the number of executive directors identified in Table 5.2. This increase in bonuses paid can either be an indication of a trend or benchmark set in this sector, or that firms were orientated to pay bonuses based on financial performance that occurred or increased during the period 2006 until 2009. One reason for the increase in the amount and number of bonuses paid might be that it was used as an aggressive performance measure, during and around the global financial crisis period in 2008.

In Table 5.5 negative amounts are identified as minimum values. These are due to some directors who resigned and had to repay remuneration from their bonus accounts back to the firms.

(b) Executive directors

Bonuses in general are paid to executive directors for performing better than agreed and/or excellent management. Table 5.6 illustrates the number of executive directors receiving bonuses as a remuneration component compared to those not receiving any bonuses component as part of their remuneration package for each year of the study period.

Table 5.6: Executive directors: Bonuses

Executive directors				
Bonus/Performance bonus				
Year	**YES**	**NO**	**N_0**	**% Receiving**
2002	205	134	339	60.47%
2003	237	104	341	69.50%
2004	216	110	326	66.26%
2005	217	83	300	72.33%
2006	201	91	292	68.84%
2007	224	84	308	72.72%
2008	231	103	334	69.16%
2009	254	87	341	74.49%
2010	216	88	304	71.05%
Overall	**2 001**	**884**	**2 885**	**69.42%**

Note: N_0 = Total number of executive directors

Table 5.6 shows the percentage of executive directors receiving bonuses compared to the total number of executive directors. This percentage increased over the nine-year period but generally fluctuated between the 60 and 75 percentage range. For eight years of the nine-year study period, approximately 70 per cent of directors received annual bonuses with little change in this trend; the only exception being 2009 where a value close to 75 per cent was observed. Table 5.6 could be used to compare executive directors receiving bonuses to the financial performance of the firms. If the financial performances of the firms also have insignificant fluctuations during the period of this study, a strong relationship may exist. If not, there might not be a relationship between this sub-component and the financial performance of the firm.

5.2.4 Other remuneration/incentives

Another sub-component of the dependent variable is other remuneration/incentives which consist of various allowances and benefits. This sub-component is important, since non-executives are being remunerated for their services rendered to firms from this remuneration sub-component as well. For this purpose it is necessary to first investigate all directors' remuneration paid as part of this sub-component and then separating all directors into executive and non-executive directors, since the remuneration paid to these two types of directors differs.

(a) All directors

Other remuneration/incentives comprise various smaller forms of remunerations like motor, medical and pension contributions that executive directors receive. The remuneration that non-executives directors receive for services rendered to the firm also forms part of this sub-component of total remuneration. It must be emphasised that executive directors' allowances and benefits are added in conjunction with non-executive directors' total remuneration in Table 5.7. In general non-executive directors' entire remuneration forms part of this sub-component.

TABLE 5.7: All directors: Total other remuneration/incentives

All directors							
Other remuneration/incentives							
Year	**N**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	639	168	67	0	6 300	121 607	349
2003	652	206	96	0	6 464	181 095	426
2004	655	202	110	0	5 035	106 237	326
2005	618	216	120	0	5 732	127 349	357
2006	607	251	147	0	4 448	146 256	382
2007	664	288	150	0	19 649	870 486	933
2008	763	287	168	0	9 390	409 088	640
2009	809	290	175	0	10 615	320 057	566
2010	739	339	201	0	10 558	492 359	702
Overall	**6 146**	**253**	**140**	**0**	**19 649**	**318 944**	**565**

Note: All figures except for N (number of directors) are given in thousands, and refer to South African Rands

From Table 5.7 it is also clear that this type of remuneration became more popular throughout the nine-year period. It becomes very difficult to report on a component that was based on such a broad spectrum of different remuneration formats. To simplify the interpretation of this component, it was considered best to separate executive and non-executive directors to investigate the two groups of directors separately.

(b) Executive directors

Executive directors are often remunerated with other remuneration/incentive types, which primarily comprise medical, pension, travel and telephone allowances. All of these other remuneration/incentives form part of the total remuneration package executive directors receives. Other remuneration plays an important role when

investigating the descriptive statistics. This sub-component might play an important role in this study since other remuneration fluctuates more easily than fixed remuneration like basic salary when tested against the performance of the firm. Firms can create more attractive packages for directors, over and above the benchmarked basic salary and bonuses set in the firm's environment.

Table 5.8 outlines other remuneration/incentives for executive directors. Comparing Table 5.2 with Table 5.8, it can be seen that this sub-component of remuneration covers a large portion of the entire package executive directors receive. All executive directors were included when Table 5.8 was compiled in order to investigate whether trends existed within this sub-component.

Table 5.8: Executive directors – Total amount of other remuneration

Executive directors							
Total amount of other remuneration							
Year	**N_0**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	339	245	164	0	6 300	185 279	430
2003	341	302	187	0	6 464	301 964	550
2004	326	299	211	0	5035	169 012	411
2005	300	304	213	0	5 732	201 192	449
2006	292	354	235	0	4 448	233 439	483
2007	308	419	227	0	19 649	1 762 954	1328
2008	334	431	246	0	9390	825 939	909
2009	341	420	247	0	10 615	673 727	821
2010	304	465	263	0	10 558	913 680	956
Overall	**2 885**	**359**	**217**	**0**	**19 649**	**584 488**	**765**

Note: All figures except for N_0 (number of executive directors) are given in thousands, and refer to South African Rands

It could be argued that this type of remuneration is used as a motivational measure for financial performance. This is suggested when comparing the results in Table 5.8 with Table 5.4, reflecting basic salary, which only gradually increased throughout the study's timeframe compared to the volatile changes in other remuneration. This type of remuneration might be linked to the changes in financial performance of the firms or external forces like benchmarking in the industry that drive this sub-component.

(c) Non-executive directors

Generally, the total remuneration for non-executive directors is all allocated under other remuneration, making it necessary to compile Table 5.9. The remuneration paid to these non-executive directors is mainly for attending board meetings, consulting and strategising.

TABLE 5.9: Non-executive directors – Total amount of other remuneration

Non-executive directors							
Total amount of other remuneration							
Year	**N_1**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	300	82	40	0	2 181	35 895	189
2003	311	100	60	0	1 674	27 695	166
2004	329	107	72	0	1 823	25 939	161
2005	318	133	83	0	2 069	43796	209
2006	315	155	112	0	2 206	46 865	216
2007	356	175	116	0	3 730	73 513	271
2008	429	175	120	0	3 316	57 004	239
2009	468	196	145	0	1 706	42 119	205
2010	435	251	170	0	6 890	180 344	425
Overall	**3 261**	**159**	**100**	**0**	**6 890**	**65 451**	**256**

Note: All figures except for N_1 (number of non-executive directors) are given in thousands, and refer to South African Rands

Table 5.9 only focuses on non-executive directors. A few non-executive directors, however, served for specific periods without any compensation due to various reasons, as reflected by the minimum values of zero.

Non-executive remuneration is becoming expensive when observing the range, where maximum amounts received by non-executives are sometimes very high. The average remuneration paid to non-executive directors increased more than three times during this study's period.

5.2.5 Share gains/options

The final sub-component of total remuneration refers to the amount of share gains/options collected by directors. The descriptive statistics for this sub-component are provided in Table 5.10.

(a) All directors

Share gains/options are included in the sub-component that is the most challenging to investigate, since the transparency and disclosure for this type of remuneration are limited. Limited share gains/option data, especially during the first part of this study, was identified. Table 5.10 below displays the number of executive and non-executive directors separately, and reflects the interest these directors had regarding share gains/options in the firm.

TABLE 5.10: All directors: Total amount of share gains or share options exercised

All directors								
Total amount of share gains/share options exercised								
Year	**N_0**	**N_1**	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	72	17	607	318	2	3 746	481 853	694
2003	59	5	667	347	13	3 000	578 746	761
2004	75	12	1 063	500	17	11 233	2 439 843	1 562
2005	89	11	1 652	1 023	3	8 085	2 270 185	1 507
2006	124	11	2 700	949	28	17 325	13 937 904	3 733
2007	119	6	3 537	1 053	9	90 181	97 469 352	9 873
2008	91	9	3 007	998	16	37 430	32 174 310	5 672
2009	68	4	3 797	790	39	88 989	137 047 794	11 707
2010	70	4	1 440	488	15	18 487	6 505 672	2 551
Overall	**767**	**79**	**2 177**	**725**	**2**	**90 181**	**34 230 624**	**5 851**

Note: All figures except for N_0 (number of executive directors) and N_1 (number of non-executive directors) are given in thousands, and refer to South African Rands

Share gains/options are probably some of the most influential remuneration measures firms can use to encourage directors to improve the financial performance of a firm. Only those directors (executive and non-executive) who benefited from selling their shares or exercising their share options as well as disclosing it in the financial statements of a firm are included in Table 5.10. As mentioned earlier in this section, acquiring share gains and profits was not common during the first part of the study's selected time period, since a lack of this type of disclosure was apparent. Table 5.10 displays significant fluctuations in the maximum values of this form of remuneration during the study period.

A few non-executive directors received share gains although it is generally recognised that only executive directors should receive this type of remuneration. One reason for

this happening is that previous executive directors became non-executive directors and still had the share options that they may exercise. Share options and share gains are very volatile in that it is not a type of fixed remuneration like basic salary. It depends on individual firms on how they are planning to use this remuneration method as a competitive advantage. It must also be noted that this type of remuneration might have a lag effect, meaning remuneration may be paid to directors for previous years' financial performance.

In Table 5.10 the median fluctuated between years and skewness in the data set might be expected. Comparing this type of remuneration with other incentives like bonuses in Table 5.6, it is possible that share options are not as popular to use as the other sub-components.

In addition to all the findings in Table 5.10 it was further noted that quite a few directors exercised their share options in 2006 and 2007 just before the global financial crisis, as can be clearly seen by considering the mean and median values for these years in Table 5.10. The question whether this was a coincidence or whether some directors were aware of the global financial crisis in advance could be raised.

This section concludes by measuring the skewness and kurtosis for the data set used in this study. These measures identify the data set's distribution and shape.

5.2.6 Skewness and kurtosis

Skewness is a measure used to describe a data set's distribution by means of symmetry or lack of symmetry, while kurtosis measures whether data is peaked or flat relative to a normal distribution. In some instances these two measures are very useful for statistical testing. Table 5.11 illustrates the skewness and kurtosis measures for all the dependent variables included in the study.

TABLE 5.11: Dependent variables: Skewness and kurtosis

Dependent variables	N	SKEWNESS	KURTOSIS
Total remuneration	6 146	12.023	270.428
Basic salary	6 146	2.322	8.448
Bonuses	6 146	13.091	328.448
Other	6 146	14.440	338.066
Share gains	6 146	24.919	841.960

Note: N is the number of individual observations in the data set

A normal (symmetric) distributed data set would have two halve identical mirror replicas on either side of the centre, thus making the skewness equal to zero. As illustrated in Table 5.11 the data set in this study is not normally distributed, because none of the skewness values in the table are zero. The dependent variable's sub-components are all skew to the right, making them positively skewed. This means that the tail for this distribution will be longer to the right due to all the positive values.

The relative peakedness or flatness of a data set is identified by comparing it to the normal distribution, and is called kurtosis. Findings vary depending on the calculation used when determining what kurtosis for a normal distribution must be. Some sources use the value three and others zero (Weisstein, 2002). For this research study the reference value was three.

By looking at the results shown in Table 5.11, it is evident that the kurtosis for all dependent variables in Table 5.11 is larger than the reference value of zero, indicating that the values' distributions are leptokurtic. This suggests that the distributions are more peaked than normal distributions and have flatter tails as well. It is, however, noted that share gains have a very high peak when comparing it to the normal distribution. All variables except basic salary convey extreme excess kurtosis in Table 5.11.

To conclude, the skewness and kurtosis of this study's dependent variables indicate that the variables are not normally distributed, thus classifying the data as non-parametric. In the case of non-parametric data the focus is placed more on the median than the mean due to skewed data points. Now that the descriptive statistics for

directors' remuneration are complete, the focus in the next section is shifted towards the descriptive statistics for the financial performance measures included in this study.

5.3 DESCRIPTIVE STATISTICS: FINANCIAL PERFORMANCE

The information and tables that follow provide a breakdown of the descriptive statistics for the independent variables. The same table structure and measures for descriptive statistics were used than for the dependent variables in Chapter 5, Section 5.2.

The four independent variables used to measure the financial performance of the firms in this study were turnover, EPS, MVA and TSR. The reason for the different financial performance measures was to evaluate different aspects of financial performance. Three types of financial performance measures, namely accounting-, market- and value-based measures are therefore included in this section. The following four sections will report the descriptive statistics for each financial performance measure individually.

5.3.1 Turnover

Turnover is the simplest financial performance measure, since it is an accounting measure directly obtained from the financial statements of the firm. Table 5.12 provide turnover's relevant descriptive statistics.

TABLE 5.12: Descriptive statistics: Turnover

Turnover (R'000)					
Year	**Mean**	**Median**	**Minimum**	**Maximum**	**Std. Dev.**
2002	6 196 134	1 284 962	8 226	41 950 388	11 313 419
2003	6 852 169	1 402 718	5 815	47 073 375	11 988 123
2004	6 490 217	1 386 954	5 989	51 262 212	12 081 419
2005	7 695 118	1 713 583	31 010	62 937 216	14 831 216
2006	10 807 881	1 973 245	33 756	77 426 248	19 617 709
2007	11 098 133	1 697 900	38 000	95 857 250	21 803 100
2008	11 800 072	2 135 788	43 748	110 719 474	22 800 733
2009	10 673 065	1 958 000	140 459	112 673 433	21 696 367
2010	11 325 195	2 530 972	139 906	110 027 004	22 049 103
Overall	**9 334 599**	**1 713 583**	**5 815**	**112 673 433**	**18 584 463**

As illustrated in Table 5.12, there is a big difference in the size of the selected firms in this study when considering their turnover. Firms having a turnover from R5.81 million up to R112.67 billion per year were included. This shows that the median would be a

better indicator than the mean, as the turnover varied substantially between all the firms, as also reflected by the high annual standard deviations. Overall, large growth occurred in the sector for the selected nine-year period, considering the substantial increases in the minimum and maximum values in the range.

5.3.2 Earnings per share (EPS)

EPS is also an accounting measure and used by investors regularly, showing the portion of profit allocated to each outstanding share of common stock. Table 5.13 provides the descriptive statistics for EPS on an annual basis.

TABLE 5.13: Descriptive statistics: Earnings per share (EPS)

Earnings per share (EPS) (cents/share)						
Year	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	152.19	68.80	-230.30	829.50	42 384.48	205.71
2003	153.35	90.00	-383.80	945.80	56 121.34	236.71
2004	186.40	71.80	-179.40	937.60	72 016.90	268.15
2005	187.87	110.60	-114.30	1 069.10	65 932.16	256.56
2006	188.02	89.60	-259.50	1 312.30	79 101.09	280.99
2007	199.23	83.30	-297.90	1 489.70	91 369.20	302.02
2008	197.33	65.70	-143.90	1 056.00	63 513.74	251.84
2009	191.18	53.40	-316.80	987.70	84 310.97	290.18
2010	177.26	40.70	-220.70	1 131.30	70 822.58	265.94
Overall	**181.60**	**70.40**	**-383.80**	**1 489.70**	**69 781.18**	**264.14**

Table 5.13 demonstrates large standard deviations for the duration of the study period. These fluctuations for this period could be due to the change in the global economic climate in which the study was conducted. Another finding in Table 5.13 is the increasing trend in the mean from 2002 until 2007 and then the decrease towards 2010 due to the global financial crisis. Negative EPS values are visible for each year in the study in the minimum column. This indicated that one or more firms had a lost in earnings for each year.

5.3.3 Total share return (TSR)

TSR is a market-based measure. This measure reflects the market's perception of the firm's financial performance. Table 5.14 provides the relevant descriptive statistics for the measure during the period under review.

TABLE 5.14: Descriptive statistics: Total share return (TSR)

Total share return (TSR) (%)						
Year	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	25.81	14.00	-75.73	272.55	3 854.05	62.03
2003	42.31	28.22	-97.93	371.43	4 809.00	69.29
2004	50.65	43.22	-100.00	232.58	4 135.27	64.26
2005	34.83	26.82	-70.00	840.00	6 410.22	80.00
2006	42.68	36.36	-36.36	270.59	2 414.59	49.10
2007	11.25	-1.10	-88.57	190.17	3 445.51	58.65
2008	-30.73	-38.60	-100.00	64.57	1 400.12	37.39
2009	15.08	13.64	-88.24	165.96	1 361.37	36.87
2010	16.05	11.36	-99.33	540.00	4 448.50	66.65
Overall	**21.60**	**15.63**	**-100.00**	**840.00**	**4 049.78**	**63.63**

In Table 5.14, the TSR varies over time. The main reason for these fluctuations is that shareholders earn different levels of return on their investments depending on risk and good performance of a firm. TSR is given as a percentage figure. Thus it is possible that TSR can be compared between firms (taking risk adjustments into consideration). As expected, there was a decrease in the TSR during the global financial crisis period in 2008. The maximum TSR value more than doubled in this study's period from 2002 to 2010, with an overall maximum of 840%, suggesting that a skew distribution exists when compared to the minimum percentage value that are fixed at -100% for share returns. The difference between the mean and the median also supports possible skewness in the data. Overall Table 5.14 may suggest that the number of firms generating higher TSR is on the decrease for the period of this study.

5.3.4 Market value added (MVA)

MVA was identified as a value-based measure of financial performance, and it can be used as a measure of the shareholders' value that was created. Table 5.15 displays the descriptive statistics for the measure over time.

TABLE 5.15: Descriptive statistics: Market value added (MVA)

Market value added (MVA) (<or > than 1)						
Year	**Mean**	**Median**	**Minimum**	**Maximum**	**Variance**	**Std. Dev.**
2002	0.72	1.10	-28.57	3.08	12.15	3.48
2003	1.26	1.16	-7.68	6.86	1.27	1.13
2004	1.75	1.41	0.13	23.86	4.36	2.09
2005	1.95	1.69	0.51	6.72	1.23	1.11
2006	2.29	1.83	0.74	26.01	4.88	2.21
2007	2.57	1.95	0.59	15.62	2.68	1.64
2008	1.70	1.38	0.38	5.45	1.03	1.02
2009	1.22	1.05	0.44	5.40	0.60	0.78
2010	1.35	1.12	0.33	5.08	0.63	0.79
Overall	**1.63**	**1.38**	**-28.57**	**26.01**	**3.32**	**1.82**

In Table 5.15, the MVA values reflect the difference between the current market value of the firm and its book value. If a firm's MVA is larger than one, it indicates that the firm created value, since it managed to increase the value of the external capital invested in it. Similarly, any value lower than one would be an indication that the firm destroyed shareholders' value. It is evident from the minimum values that every year some firms destroyed value in the industry. It is also noted that MVA is substantially lower after the global financial crisis in 2008 for the entire sector. The smaller range between minimum and maximum values indicates that, the mean and median are closer in alignment and the decrease in standard deviation suggest this trend. The annual standard deviations from 2008 onwards are relatively small, thus showing lower distribution volatility.

All the tables discussed until now in Chapter 5 provided the required data to enable the researcher to test for skewness and kurtosis. These tests identify the distribution and peakedness of the data set's variables for the study.

5.3.5 Skewness and kurtosis

Similar to the dependent variables, tests for skewness and kurtosis were conducted for the independent variables. As illustrated in Table 5.16, it is evident that the independent variables are not normally distributed.

TABLE 5.16: Independent variables: Skewness and kurtosis

Independent variables	N	Skewness	Kurtosis
Turnover	6 146	3.322	12.458
EPS	6 146	1.706	2.880
TSR	6 146	3.450	30.645
MVA	6 146	- 2.560	137.906

Note: N is the number of individual observations in the data set

As previously explained in Section 5.2.6 for skewness, three of the independent variables are skewed to the right, making them positively skewed. There is, however, a difference when MVA is considered. This market-based measure is skewed to the left due to the result of distribution that lies more towards the negative side than a normal distribution. This specific tail for distribution will be longer to the left due to the negative values.

When calculating kurtosis for the independent variables, the results for TSR, MVA and turnover are all larger than the critical value of a three associated with a normal distribution, making the measures' distributions leptokurtic. However, EPS's kurtosis result is very close to the general standard set for a normal distribution.

5.3.6 Descriptive statistics summary

In the previous sections the descriptive statistics for the dependent and independent variables included in this study were provided. By observing all the tables and figures included in these sections, interesting findings were already made by just conducting the descriptive statistics based on the data set. These findings and comments are discussed in more detail in Chapter 6. Two factors could be clearly identified which assisted the researcher to determine the appropriate inferential statistics that follow. Firstly, the time-series cross-sectional nature of the data has important implications for analysis. Secondly, there were a number of cases where potential outliers were identified. Testing for skewness and kurtosis, as well as the minimum and maximum values identifying the range of the variables, also gave a clear indication that outliers may exist. This has important implications for the next stage of the research process, where regression analyses were used to investigate the relationship between remuneration and financial performance. The directors were once again separated into

executive and non-executive groups in order to simplify and retrieve more specific information regarding the data set.

5.4 INFERENTIAL STATISTICS

To achieve the objectives of the study, it was necessary to conduct inferential statistics. Secondary objectives first had to be addressed in order to achieve the study's primary objective. For this reason the relationship between directors' remuneration and the financial performance of firms had to be determined. In order to test the relationship, regression analysis was conducted. Chapter 4 dealt with the identification and selection of the appropriate regression models and techniques used to obtain the best results from the specific data set used in the research study. In the following section, the regression between total directors' remuneration and financial performance is discussed in detail. This detailed discussion serves as an example of the process that was followed to ensure that the most appropriate regression models were identified, and illustrates how results were adjusted if required.

5.4.1 Introduction

After the descriptive statistical analysis and data identification, the best suited inferential tests and models were identified for the study's data set. As discussed in Section 4.13, regarding inferential tests, the researcher first identified the outliers and then applied trimming to the data set, since it was found to be skewed and not normally distributed.

The next step was to find the most appropriate regression model for the panel data. The F-test for fixed effects and the Hausman test for random effects were used in order to determine the best fit model to use for the regression analysis. Additional testing was performed by applying the Breusch-Pagan test for heteroskedasticity to determine whether the results should be adjusted for heteroskedasticity. These tests were done by means of the Statistical Analysis Software (SAS) package.

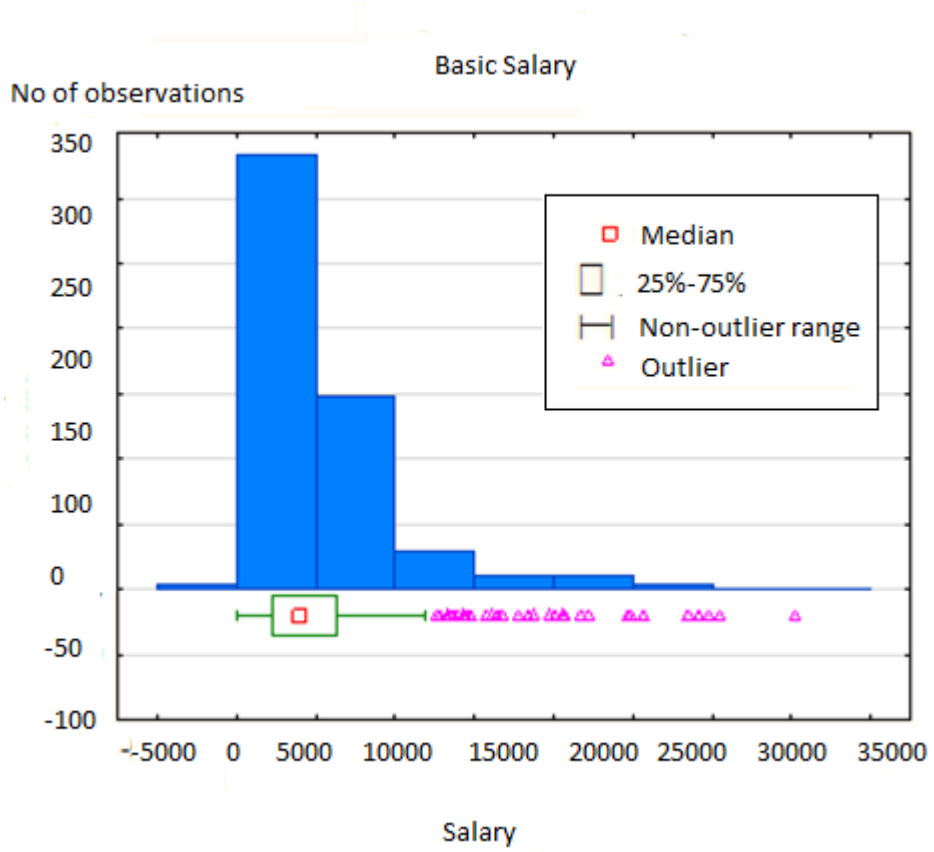
In Section 5.5, the regression analyses and tests for heteroskedasticity on data for all directors, executive directors, and non-executive directors respectively are discussed in order to investigate the relationship between directors' remuneration and firms' financial performance.

5.4.2 Outlier testing and procedure

Before regression tests were conducted, descriptive statistics pointed towards potential outlier values in the data set. Figure 5.2 provides a histogram of the basic salary component for all directors. This serves as an example to illustrate how outliers were identified for all the variables in this study.

The first thing that should be noticed in Figure 5.2 is that the data are widely spread. Figure 5.2 illustrates that most of the observations fall within the three standard deviation range from the median in the histogram. As described in Chapter 4, all the observations that did not fall within this range (more than three standard deviations away indicated as pink triangles) were identified as outliers.

FIGURE 5.2: Identifying outliers



Source: Adapted SAS (2012)

By applying winsorised-trimming, all of these outliers were brought closer to the median by replacing the value of the outlier with a value equal to the mean, plus or minus three times the standard deviation. The outliers were thus not excluded from the study, but adjusted.

5.4.3 Process followed to conduct regression analysis

In the inferential statistics section of this study a process structure was followed to test the data. First, the data used in this study were trimmed as explained in Section 5.4.2 to ensure that the results from the regression tests have more substantial significance. Secondly, before the regression test could commence the most appropriate regression models had to be determined. Three regression models were identified, namely pooled OLS models, fixed-effects models and random-effects models. A fixed-effects or random-effects regression model was selected by means of conducting an F-test for fixed effects and a Hausman test for random effects. After selecting the preferred regression model, the researcher conducted a regression analysis to determine the relationship between the variables. To conclude, a test for heteroskedasticity was performed for all the variables, which assisted in obtaining better results when heteroskedasticity was found in the data.

In the next section, the regression test followed in the study is presented. This test consists of four steps, and is illustrated in detail by investigating the relationship between directors' remuneration and the firms' financial performance variables. These steps are then also applied for executive directors and non-executive directors separately, in order to seek relationships between the two types of directors and the financial independent variables.

5.5 REGRESSION TESTS

The first regression analysis that was conducted is discussed extensively as an example to demonstrate the process and steps followed in this study to obtain the final results.

5.5.1 All directors

In this section the regression model selection and subsequent regression analysis were based on all directors included in the study, and considered the relationship between total remuneration and the four measures of financial performance combined.

(a) Total remuneration

(i) Step 1: Test for the most appropriate regression model:

	F-value	*p*-value
F-test for fixed effects	6.680	0.000***
Hausman test for random effects	4.650	0.325
Result: Most appropriate model is a random effects model		

Note: *** = Significant at the 1% level

The F-test for fixed effects had an F-value of 6.680 and a *p*-value of 0.000. When conducting the Hausman test for random effects, the F-value equalled 4.650 with a *p*-value of 0.325. When referring back to the Hausman test theory in Chapter 4, Section 4.14.3 (b) a random effects model will therefore be the best fit model for the data under consideration.

(ii) Step 2: Conducting the most appropriate regression model:

Fit of Model	F-value	*p*-value	Adjusted R^2
	F(4,476) = 63.070	0.000***	0.340

Note: *** = Significant at the 1% level

As identified in Step 1, a random effects model was selected as the preferred model when the regression testing was in progress. The findings show that the fit of this model was good with an F-value (4,476) = 63.070 and p = .00, thus having a high level of significance. The researcher worked with a 95% confidence interval, creating a hurdle level of significance represented by p = .05. The adjusted R^2 was equal to 0.340, showing that the four independent variables selected for this study explain 34% of the variance in the dependent variable. The regression results obtained from the random effects model are shown in Table 5.17 below.

(iii) Step 3: Regression analysis results (trimmed)

The regression results in Figure 5.17 were obtained before heteroskedasticity was tested for.

TABLE 5.17: All directors –Total remuneration regression results

	Estimate	Std. Error	t-value	Pr(>t)
Intercept	3606.999	851.233	4.237	0.000***
Turnover (trimmed)	0.002	0.000	10.889	0.000***
EPS (trimmed)	6.700	2.320	2.888	0.004***
TSR (trimmed)	-13.029	4.341	-3.002	0.003***
MVA (trimmed)	1259.668	329.305	3.825	0.000***

Note: *** = Significant at the 1% level

In Table 5.17 it can be seen that the regression coefficients obtained for all four the independent variables included in the study are highly significant. As mentioned in Chapter 4 though, these results are highly sensitive to the presence of heteroskedasticity in the data. To determine if this was the case, the Breusch-Pagan test for heteroskedasticity was therefore applied in the next step.

(iv) Step 4: Test for Heteroskedasticity: Breusch-Pagan test

Test for Heteroskedasticity:	**Breusch-Pagan**	***p*-value**
	BP = 482.130	0.000***

Note: *** = Significant at the 1% level

By conducting the test for heteroskedasticity, the statistical results obtained (BP = 482.130 and p = .00) indicated that this test is statistically significant and that there is heteroskedasticity in the data. The results therefore suggest that the regression results obtained in the previous step needed to be adjusted accordingly as shown in Table 5.18.

TABLE 5.18: Regression analysis test and results: All directors' total remuneration

	Estimate	Adjusted		
		Std. Error	t-value	Pr(>t)
Intercept	3606.999	779.783	4.626	0.000***
Turnover (trimmed)	0.002	0.000	8.237	0.000***
EPS (trimmed)	6.700	2.987	2.243	0.025**
TSR (trimmed)	-13.029	3.878	-3.360	0.001***
MVA (trimmed)	1259.668	435.770	2.891	0.004***

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

The differences between Tables 5.17 and 5.18 are that the t-values are adjusted in Table 5.18, resulting in different *p*-values. The regression coefficients are consistent throughout both tables; the only major difference is observed in terms of the level of significance for EPS which decreased from the 1% to the 5% level. Table 5.18 therefore illustrates that the regression coefficients obtained for all four the independent variables are all highly significant since they all have a probability significance (*p*-value) of less than .05. Table 5.18 reports that the regression coefficients for MVA, EPS and Turnover are positive, reflecting a positive relationship with total remuneration. TSR's relationship is negative, thus not what is generally expected. This negative relationship might be due to a lag period between when directors are remunerated and the firms' share performance. Although MVA's regression coefficient seems extremely high compared to the other performance measures, it should not be compared directly with the other measures since the performance measures are reflected in different units of measurement and are investigated individually towards remuneration and not towards each other.

The four steps discussed above were applied to three sub-components (basic salary, bonus/performance bonus and other remuneration/incentives) of the dependent variable, as well as for the executive and non-executive directors separately. Share gains/options were not utilised and tested in this section due to limited information on data made available with regards to share gains/options, the small amount being remunerated from this component as well as the vast number of outliers identified when tested, thus being able to mislead and jeopardise the study's findings. In each of the sections below a comprehensive table with the complete regression tests and results are provided.

(b) Basic salary

A comprehensive table of the regression results obtained for all directors: basic salary is provided below. Table 5.19 contains all the steps listed above, formulated and summarised into one table. Table 5.19 commences with the selection of the most appropriate regression model, determining the fit of the selected model, obtaining the regression results and testing for heteroskedasticity in order to obtain adjusted regression results when heteroskedasticity is found in the data set.

TABLE 5.19: Regression analysis test and results: Basic salary

	F-value	*p*-value		
F-test for fixed effects	12.510	0.000***		
Hausman test for random effects	6.880	0.143		
Most appropriate model	Random effects model			
Fit of Model	**F-value**	***p*-value**	**Adjusted R^2**	
	F(4.476) = 44.330	0.000***	0.270	
Heteroskedasticity	**Breusch-Pagan**	***p*-value**		
	BP = 339.150	0.000***		
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Intercept	3147.820	351.667	8.951	0.000***
Turnover (trimmed)	0.001	0.000	5.636	0.000***
EPS (trimmed)	0.878	1.183	0.742	0.458
TSR (trimmed)	-4.843	1.439	-3.365	0.001***
MVA (trimmed)	-9.784	124.924	-0.078	0.938

Note: *** = Significant at the 1% level

The Hausman test yielded an F-value with an insignificant *p*-value thus a random effects model was selected as indicated in Table 5.18. When the random effects regression model's quality of fit was tested, an F-value (4,476) of 44.330 was obtained.

The data were tested for heteroskedasticity by using the Breusch-Pagan test. This yielded a highly significant test statistic (BP = 339.150; *p*-value = .00), which pointed towards the presence of heteroskedasticity in the data. The final results for the random effects model, after being adjusted for heteroskedasticity are thus shown in Table 5.19.

Table 5.19 displays a significant negative relationship for TSR's regression coefficient. It thus seems an inverse relationship exists between TSR and basic salary for all directors. Since TSR is a market-based measure, the market determines the

relationship, with relatively little influence from managers. Turnover's regression coefficient is highly significant. The observed positive relationship between turnover and basic salary shows that firms with high turnover remunerate with high basic salaries for directors.

As indicated in Table 5.19, MVA and EPS's regression coefficients are not significant, since both *p*-values exceed .05. For MVA this is not normal, because when firms grow, directors are hypothetically remunerated more, not when the MVA ratio is on the decrease. An insignificant EPS regression coefficient was unexpected, since one would assume basic salaries for directors will increase when earnings for shareholder increase in a firm.

(c) Bonus/performance bonus

Table 5.20 below presents a comprehensive summary of the regression results obtained for the sub-component: bonus/performance bonus.

TABLE 5.20: Regression analysis test and results: Bonuses

	F-value		***p*-value**	
F-test for fixed effects	7.930		0.000***	
Hausman test for random effects	4.790		0.309	
Most appropriate model	Random effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(4,476) = 52.450		0.000***	0.300
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 407.03		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Intercept	15.008	194.434	0.077	0.939
Turnover (trimmed)	0.000	0.000	5.321	0.000***

EPS (trimmed)	3.343	1.077	3.104	0.002***
TSR (trimmed)	-2.564	1.233	-2.079	0.038**
MVA (trimmed)	445.936	104.627	4.262	0.000***

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

Table 5.20 illustrates that all the independent variables' regression coefficients are significant, but when examining the intercept, it is not significant. As seen in Table 5.20 EPS's regression coefficient is positive and highly significant, suggesting that directors are remunerated with bonuses instead of basic salaries as seen in Table 5.19 when earnings increase.

As was seen earlier in Table 5.18 and 5.19, TSR once again exhibits a negative relationship to the remuneration sub-component included as the dependent variable. This negative relationship might be due to the fact that TSR is a market-based measure and cannot be directly controlled by the firms' management. The turnover coefficient is zero thus being significant continuously with no standard error. In Table 5.20 the MVA had a positive regression coefficient that was highly significant. This suggests that bonuses are awarded when the firm's MVA increases.

(d) Other remuneration/incentives

Other remuneration/incentives comprise non-executive directors' source of income as well as executive directors' other remuneration sub-component. Table 5.21 displays regression results for this sub-component of remuneration and the financial performance measures.

TABLE 5.21: Regression analysis test and results: Other remuneration

	F-value	***p*-value**	
F-test for fixed effects	9.320	0.000***	
Hausman test for random effects	11.400	0.022**	
Most appropriate model	Fixed effects model		
Fit of Model	**F-value**	***p*-value**	**Adjusted R^2**
	F(4,411) = 16.160	0.000***	0.120

Heteroskedasticity	Breusch-Pagan		*p*-value	
	BP = 440.68		0.000***	
	Adjusted			
	Estimate	Std. Error	t-value	Pr(>t)
Turnover (trimmed)	0.000	0.000	3.137	0.002***
EPS (trimmed)	0.464	0.684	0.679	0.498
TSR (trimmed)	-2.081	0.647	-3.217	0.001***
MVA (trimmed)	63.634	64.661	0.984	0.326

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

As seen from Table 5.21 the adjusted R^2 reflects that the independent variables only account for 12% of the variance in the dependent variable. The regression analysis's overall results seem to be weak since executive and non-executive directors remuneration are both included in this sub-component of total remuneration. This sub-component will have more relevance later when it is divided between executive directors' other remuneration in Section 5.5.2 (d) and non-executive directors' other remuneration in Section 5.5.3 (b).

In Table 5.21 the regression coefficient indicated that both MVA and EPS are insignificant due to the high probability exceeding the .05 level. The TSR shows a negative relationship to other remuneration/incentives paid, which could have been expected to some degree since other remuneration includes medical, pension and other benefits that are not directly influenced by the TSR investors earned on the firm's shares. Similar to Table 5.20, turnover's regression coefficient is positive and significant, but with a value of zero, not having an effect on the variable (all directors' other remuneration).

5.5.2 Executive directors

Executive directors are managing the daily operations of the firms. This section is therefore an important indication of whether the remuneration of executive directors reflects a relationship with the financial performance of the firms.

(a) Total remuneration

In order to investigate more accurately whether the remuneration paid to directors and the financial performance of firms are related, directors need to be categorised according to type in order to obtain more relevant results. Table 5.22 below starts this section by first considering the relationship between total remuneration paid to executive directors and the financial performance variables in this study.

TABLE 5.22: Regression analysis test and results: Executive directors' total remuneration

	F-value		***p*-value**	
F-test for fixed effects	7.530		0.000***	
Hausman test for random effects	5.230		0.265	
Most appropriate model	Random effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(4.475) = 63.310		0.000***	0.340
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 471.840		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Intercept	3 286.151	773.231	4.250	0.000***
Turnover (trimmed)	0.002	0.000	8.045	0.000***
EPS (trimmed)	6.437	2.763	2.330	0.020**
TSR (trimmed)	-12.836	3.887	-3.302	0.001***
MVA (trimmed)	1 218.615	467.022	2.609	0.009***

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

In Table 5.22, the Hausman test had an insignificant result with a *p*-value larger than .05. This result indicated that a random effects model was best suited for the data set. All the regression coefficients in this table were significant. As in all the previous tables included in Section 5.5, the individual regression coefficient for TSR is still negative. This suggests that when TSR decreases, executive directors' total remuneration

increases. Positive relationships therefore exist between executive directors' total remuneration and MVA, EPS and Turnover. EPS's positive regression coefficient is expected since EPS is an accounting-based measure that could be influenced by a firm's management.

(b) Basic salary

Table 5.23 illustrates the results of the regression based on executive directors' basic salaries.

TABLE 5.23: Regression analysis test and results: Executive directors' basic salary

	F-value		***p*-value**	
F-test for fixed effects	13.010		0.000***	
Hausman test for random effects	6.720		0.151	
Most appropriate model	Random effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(4.475) = 46.840		0.000***	0.280
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 333.280		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Intercept	3101.745	357.075	8.687	0.000***
Turnover (trimmed)	0.001	0.000	5.621	0.000***
EPS (trimmed)	0.816	1.175	0.694	0.488
TSR (trimmed)	-5.322	1.473	-3.613	0.000***
MVA (trimmed)	13.522	137.376	0.098	0.922

Note: *** = Significant at the 1% level

In Table 5.23, two of the independent variables' (TSR and turnover) regression coefficients had *p*-values that are below .05, reflecting that these coefficients are significant, while the other two independent variables (MVA and EPS) yielded

regression coefficients that are not significant. The regression coefficient for TSR is negative, implying that as share returns decreased, the basic salaries of executive directors still increased. The negative result observed for TSR may be due to various reasons. One of these reasons may be because of a lag between the remuneration paid to executive directors and the TSR earned.

Comparing Table 5.23 with Table 5.19, it is evident that the amount of basic salary non-executive directors received compared to executive directors, contributed very little towards the overall outcome of the regression coefficients' significance levels.

(c) Bonus/performance bonus

Bonuses are in principle only to be paid to executive directors managing the firms, having achieved goals or performing over and above of what was expected in a period of time. Table 5.24 shows the relationship this sub-component of the executive directors' overall remuneration has with the financial performance measures that were included in this study.

TABLE 5.24: Regression analysis test and results: Executive directors' bonuses

	F-value		***p*-value**	
F-test for fixed effects	8.030		0.000***	
Hausman test for random effects	4.800		0.308	
Most appropriate model	Random effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(4.475) = 53.32		0.000***	0.310
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 453.710		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Intercept	2.305	193.239	0.012	0.990
Turnover (trimmed)	0.000	0.000	5.341	0.000***

EPS (trimmed)	3.311	1.072	3.088	0.002***
TSR (trimmed)	-2.747	1.232	-2.229	0.026**
MVA (trimmed)	448.373	105.706	4.242	0.000***

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

In Table 5.24, a random effects model was again selected as the most appropriate regression model, based on similar results for the Hausman test as those reported in Table 5.22. All the regression coefficients indicate a significant relationship towards bonuses. The regression coefficient for MVA is significant in relation to the standard error identified, resulting in a higher t-value compared to Table 5.23's results. The regression coefficient for EPS is also positive and significant, suggesting that when EPS increases, the bonuses paid to directors also increase.

(d) Other remuneration/incentives

Executive directors' other remuneration/incentives consists of various types of components, all accumulated in this sub-component. The results reported in Table 5.25 should indicate whether a relationship between this sub-component and the financial variables exists.

TABLE 5.25: Regression analysis test and results: Executive directors' other remuneration

	F-value		***p*-value**	
F-test for fixed effects	11.220		0.000***	
Hausman test for random effects	19.410		0.001***	
Most appropriate model	Fixed effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(4.410) = 7.440		0.000***	0.060
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 453.710		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**

Turnover (trimmed)	0.000	0.000	2.660	0.008***
EPS (trimmed)	0.151	0.504	0.301	0.764
TSR (trimmed)	-1.148	0.533	-2.155	0.032**
MVA (trimmed)	36.257	48.355	0.750	0.454

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

In Table 5.25, a fixed effects model was considered most appropriate based on the results of the Hausman test being statistically significant. Significant regression coefficients can be seen for the two independent variables TSR and turnover. In contrast, MVA and EPS yielded regression coefficients that are not significant, which would imply that these two variables do not hold any significant relationships with the other remuneration/incentives that executive directors receive. This might suggest that executive directors received other remuneration irrespective of increasing MVA or EPS for shareholders.

5.5.3 Non-executive directors

Non-executives directors are not involved in the daily management of the firm, thus generally receiving fees for attending meetings and consultative work done for the firm. This type of remuneration falls under “other” remuneration and therefore only total remuneration of non-executive directors and other remuneration will be analysed to determine whether a relationship exists between the remuneration non-executive directors received and the firm’s financial performance

(a) Total remuneration

Total remuneration for non-executive directors primarily consists of fees paid for attending meetings and services rendered to the firm; however a few non-executive directors received a basic salary. All remuneration paid to non-executive directors in relationship to the financial measures is identified in Table 5.26.

TABLE 5.26: Regression analysis test and results: Non-executive directors' total remuneration

	F-value		*p*-value	
F-test for fixed effects	5.650		0.000***	
Hausman test for random effects	0.820		0.935	
Most appropriate model	Random effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(4.463) = 31.400		0.000***	0.210
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 283.450		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Intercept	275.290	72.011	3.823	0.000***
Turnover (trimmed)	0.000	0.000	5.908	0.000***
EPS (trimmed)	0.054	0.330	0.164	0.870
TSR (trimmed)	-0.925	0.360	-2.572	0.010***
MVA (trimmed)	121.926	46.665	2.613	0.009***

Note: *** = Significant at the 1% level

In Table 5.26, the results from the Hausman test justified the selection of a random effects model. Three of the independent variables' regression coefficients reflect significant relationships with the total remuneration non-executive directors received. As expected EPS does not hold a significant relationship with total remuneration for non-executive directors since these directors are not actively involved in the operational management of firms and consequently not remunerated based on these earnings. The reason for the highly significant yet small regression coefficient for

turnover can be ascribed to turnover being measured in Rand and illustrated in millions, compared to TSR which was shown as a percentage.

(b) Other remuneration

As mentioned in Section 5.5.1 (d), the sub-component classified as other remuneration is the primary remuneration source for non-executive directors. In Table 5.27 the focus was placed on the remuneration non-executive directors received for the activities and services they performed in the firm in relation to the four financial performance variable measures identified.

TABLE 5.27: Regression analysis test and results: Non-executive directors' other remuneration

	F-value		***p*-value**	
F-test for fixed effects	6.050		0.000***	
Hausman test for random effects	1.660		0.798	
Most appropriate model	Random effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(4.463) = 37.870		0.000***	0.240
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 396.210		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Intercept	273.756	60.848	4.499	0.000***
Turnover (trimmed)	0.000	0.000	6.261	0.000***
EPS (trimmed)	0.046	0.275	0.166	0.868
TSR (trimmed)	-0.944	0.287	-3.292	0.001***
MVA (trimmed)	56.828	28.811	1.972	0.049**

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

In Table 5.27, a random effects model was selected. The regression coefficients of three of the independent variables, namely TSR, MVA and turnover, suggested that

these variables exhibited a significant relationship with the non-executive directors' other remuneration. In contrast, a regression coefficient with a probability exceeding the hurdle rate of .05 used in this study is observed for EPS, thus making the positive relationship between EPS and the other compensation sub-component of total remuneration insignificant. The same argument that was provided to explain the insignificant regression coefficient for EPS in Table 5.26 could apply for Table 5.27. TSR has a negative coefficient once again, and therefore corresponds to the results reported in previous tables. The results reported in Table 5.26 and Table 5.27 are very similar due to the fact that the largest portion of total remuneration received by non-executive directors is allocated from this sub-component.

Table 5.28 provides a summary of the expected relationship types and signs compared to the results observed for the regression tests that were conducted. First the comparisons between the expected and actual results for all directors' total remuneration are displayed, and then for both types of directors (executive and non-executive directors) separately.

TABLE 5.28: Observed relationship summary – All directors

Total remuneration : All directors				
	Expected		**Observed results**	
	Relationship	**Sign**	**Relationship**	**Sign**
Turnover	Yes	**Positive**	Yes	**Positive**
EPS	Yes	**Positive**	Yes	**Positive**
TSR	Yes	**Positive**	Yes	**Negative**
MVA	Yes	**Positive**	Yes	**Positive**
Total remuneration: Executive directors				
	Expected		**Observed results**	
	Relationship	**Sign**	**Relationship**	**Sign**
Turnover	Yes	**Positive**	Yes	**Positive**

EPS	Yes	**Positive**	Yes	**Positive**
TSR	Yes	**Positive**	Yes	**Negative**
MVA	Yes	**Positive**	Yes	**Positive**
Total remuneration: Non-executive directors				
	Expected		**Observed results**	
	Relationship	**Sign**	**Relationship**	**Sign**
Turnover	Yes	**Positive**	Yes	**Positive**
EPS	No	**N/A**	No	**N/A**
TSR	No	**N/A**	Yes	**Negative**
MVA	No	**N/A**	Yes	**Positive**

One of the most unexpected results as displayed in Table 5.28 is the negative relationship between TSR and total remuneration for executive directors. In general it would be assumed that remuneration for executive directors will increase when TSR increases, satisfying shareholders. Other unexpected findings included the relationship between non-executive directors' remuneration and TSR, as well as the relationship towards MVA. Non-executive directors are assumed to be remunerated according to services rendered and not in relation to TSR and MVA.

Quite often, directors are being remunerated or might receive incentives in accordance with performance that already occurred. For this reason, the researcher conducted a one-year lag test to evaluate whether remuneration was paid one year after the financial performance occurred in the firm.

5.6 LAG TESTS

According to Box, Jenkins and Reinsel (1994) lag tests are important for two reasons: firstly when investigating relationships and, secondly, when working with time-series. One time series variable may have a delayed period response to another time-series variable, or a delayed response to a common stimulus that affects both time-series variables. By investigating the response of one variable towards others, an outside

stimulus may be “smeared” in time, such that a stimulus restricted to one observation elicits a response at multiple observations.

By comparing a normal regression for all the independent variables with a lag regression test, a study by Boschen and Smith (1995:577) concluded that using lagging to investigate past financial performance seems to have a substantial influence on current remuneration. However, the effect is not permanent, based on observations on 16 firms in the late 1940s up until the early 1990s. The study of Boschen and Smith (1995:577) also indicated changes in the performance sensitivity of remuneration over the four decades covered by their data set. Tai’s (2008:555) research examining the lagged relationships between a CEO’s remuneration and the financial performance of selected firms indicated a synchronous and lagged relationship between remuneration and financial performance.

A study by Joskow and Rose (1994:2) found that current remuneration responds to past financial performance outcomes, but that the effect decays considerably within a two-year period. Their study suggested that both accounting and market performance measures influence directors’ remuneration, and that the basic salary and bonus sub-components of remuneration, as well as total director’s remuneration, have become more sensitive to a firm’s financial performance over the past few decades.

As this study investigated the relationship between the financial performance of firms and the remuneration their directors received over time, time could be considered as a separate variable. Logically, it comes to mind that from a financial and economical point of view, a lag may be apparent since financial years continuously flow into each other. Although firms have different financial year ends and rewards are usually given to those who already performed or achieved the set objectives, an overall annual relationship may be determined.

Lag testing was therefore included in this study to investigate firms’ financial performance one year prior to directors being remunerated. In order to do a lag test, the time between years are identified as an additional independent variable.

The regression testing started by investigating what the lag effect was on all directors’ remuneration followed by sub-dividing the directors into executive and non-executive directors due to the difference in the remuneration these two types of directors

received. As frequently mentioned earlier in this study, the data were not normally distributed, thus the regression testing was again adjusted for heteroskedasticity.

Lag testing was performed in a similar process as the TSCSREG multi-regression testing conducted in Section 5.4 above. The two types of directors were again sub-divided when the regression results were discussed. The three sections consisted of all directors, executive directors and non-executive directors. The researcher investigated the possibility of a lag between the dependent and independent variables to determine whether the regression tests would deliver even stronger relationship results than those already tested in the preceding sections. The results are reported in the following three sections of this study.

5.6.1 All directors

All directors' total remuneration for performance achieved one year prior to the remuneration were tested with a regression model in order to determine the possible relationship, if any, type and strength as displayed in Table 5.29.

TABLE 5.29: Total number of directors: Total remuneration (lag)

	F-value		***p*-value**	
F-test for fixed effects	2.020		0.000***	
Hausman test for random effects	Error occurred		n/a	
Most appropriate model	Fixed effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(5.332) = 24.600		0.000***	0.270
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 491.44		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**

Total (trimmed) lag1	0.240	0.072	3.349	0.001***
TSR (trimmed)	-11.346	4.154	-2.732	0.007***
MVA trimmed)	1 138.898	3.958	2.878	0.004***
EPS (trimmed)	0.001	0.000	2.948	0.003***
Turnover (trimmed)	9.053	2.450	3.695	0.000***

Note: *** = Significant at the 1% level

In Table 5.29, the Hausman test resulted in an error, thus a fixed effects model was applied. All the regression coefficients are highly significant, and the overall results are similar to those reported for the same-year remuneration testing conducted in the preceding sections as shown in Table 5.18. The total (trimmed) lag1's positive regression coefficient with its high level of statistical significance indicates that this year's remuneration is strongly related to the previous year's remuneration. TSR is the only variable with a negative regression coefficient. By comparing the lag results reported in Table 5.29 with the original regression test as shown in Table 5.18, it is evident from the two tables that the relationship between the financial performance variables and director remuneration is stronger in Table 5.18 than in Table 5.29, indicating a stronger relationship between the same year's total remuneration and financial performance. This finding is motivated by comparing and interpreting the regression coefficient's significance. There are however significant relationships between all the performance measures and the total directors' remuneration in Table 5.29 which suggest that lag relationships could exist between firm's performance and the remuneration all directors receive.

5.6.2 Executive directors

Focusing only on the executive directors, a narrower approach might result in stronger regression results when incorporating a lag year into the regression model. Executive directors are more performance driven with day to day management in a firm and may be remunerated for performance results that occurred, thus resulting in a lag period before being remunerated for performance. Table 5.30 reports the results of tests conducted on the relationship between executive directors' remuneration and the financial performance measures.

TABLE 5.30: Executive directors: Total remuneration (lag)

	F-value		*p*-value	
F-test for fixed effects	2.270		0.000***	
Hausman test for random effects	Error occurred		n/a	
Most appropriate model	Fixed effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(5.331) = 31.490		0.000***	0.270
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 499.550		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Total (trimmed) lag1	0.301	0.069	4.354	0.000***
Turnover (trimmed)	0.001	0.000	2.696	0.007***
EPS (trimmed)	8.523	2.131	3.999	0.000***
TSR (trimmed)	-10.054	3.910	-2.571	0.011**
MVA (trimmed)	1 142.604	389.605	2.933	0.004***

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

In Table 5.30, the Hausman test resulted in an error similar to Table 5.29. The regression coefficient of TSR is negative, corresponding to the results of the regression lag test conducted on all directors' remuneration in the previous section. The high significance of the EPS regression coefficient could be due to the fact that executive directors are remunerated higher when shareholders' earnings increased during the previous year. Similar to the results reported in Table 5.22, turnover once again yielded a low regression coefficient. The total (trimmed) lag1's regression coefficient indicates a positive significant relationship similar to Table 5.29.

Table 5.30 provides a good indication that executive directors may be partially remunerated by viewing the previous years' financial performance results.

5.6.3 Non-executive directors

In general, non-executive directors are not being remunerated for performance from prior years. When applying a lag regression test on non-executive directors' total remuneration, no significant findings are therefore expected to be identified. Table 5.31 below reports the results of such a lag regression conducted for the sub-group of non-executive directors.

TABLE 5.31: Non-executive directors: Total remuneration (lag)

	F-value		***p*-value**	
F-test for fixed effects	1.760		0.001***	
Hausman test for random effects	Error occurred		n/a	
Most appropriate model	Fixed effects model			
Fit of Model	**F-value**		***p*-value**	**Adjusted R^2**
	F(5.321) = 19.340		0.000***	0.230
Heteroskedasticity	**Breusch-Pagan**		***p*-value**	
	BP = 399.010		0.000***	
	Adjusted			
	Estimate	**Std. Error**	**t-value**	**Pr(>t)**
Total (trimmed) lag1	0.377	0.0823	4.582	0.000***
Turnover (trimmed)	0.000	0.000	2.356	0.019**
EPS (trimmed)	-0.126	0.247	-0.509	0.611
TSR (trimmed)	-0.713	0.4319	-1.651	0.100
MVA (trimmed)	36.649	41.683	0.879	0.380

Note: *** = Significant at the 1% level; ** = Significant at the 5% level

From Table 5.31 it becomes evident that non-executive directors are in general not remunerated by means of TSR, MVA and EPS. Turnover's regression coefficient however was positive and significant at a 5% significance level, thus the only financial

measure that is significant. Similar to Table 5.29 and 5.30, total (trimmed) lag1's regression coefficient shows a significant positive relationship.

5.7 CONCLUSION

In Chapter 5, the research objectives of the study were investigated and addressed. Overall, the descriptive statistics results were provided in table format and these results suggest that the data set consisted of non-parametric data, containing a number of outliers and exhibiting random fluctuations that occurred during the selected research period.

The descriptive statistics were followed by inferential statistics applying TSCSREG multiple regression testing. Both the F-test for fixed effects and the Hausman test for random effects were applied to determine the most appropriate regression model. For the regression analyses, the TSCSREG procedure was applied due to the panel data nature of the data that was investigated in this study. The regression tests were conducted to determine whether a relationship exists between directors' remuneration (dependent variable) and firms' financial performance (independent variables). Furthermore, the purpose was to define the nature and the strength of the relationships between the dependent and independent variables by considering the sign and the level of significance of the regression coefficients. The regression analyses also provided estimations of how much of the variation in the dependent variable was explained by the variation in the independent variables by considering the adjusted R^2 values obtained.

Regression analyses were conducted in three main segments and the results are reported in Section 5.5 and Section 5.6. The first segment started with all directors combined, followed by splitting the directors into executive and non-executive directors for a more focused approach. The relevant regression analyses were then conducted within each of these three segments to investigate the relationship between directors' remuneration and the four financial performance measures.

After examining the data, it was found that the possibility of a lag between the dependent and independent variables may exist. To test this theory, the data were evaluated again, but this time with a one-year lag between directors' remuneration and the financial performance variables. Results suggested that significant relationships do

exist between financial performance and the total remuneration for all directors and executive directors, but that these relationships are not as strong as was the case when comparing the same year's dependent and independent variables with each other.

In the following chapter, the summary and conclusions of the study are provided. The objectives of the study are aligned with the results discussed in Chapter 5, before Chapter 6 is concluded with an overview of limitations faced in the study and recommendations for future studies in this field.

CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The relationship between directors' remuneration and the financial performance of firms is often questioned (Bender, 2002:16). Through the centuries the issue of directors' remuneration has attracted considerable attention. On the one hand, the job of directors becomes more difficult due to the volatile market conditions under which modern firms operate. On the other hand, a rise in directors' remuneration has been regarded as a concern since it could contribute to excessive income inequality. The question arises whether a healthy relationship, if any, exists between the remuneration paid to directors and a firm's financial performance?

Unfounded perceptions and debates have been continuing for decades as shareholders claim that directors are not remunerated according to the firms' performance, but rather for their own personal gain (agency theory). As mentioned in this study, directors' remuneration remains a controversial topic, especially in the light of the wide wealth gap between rich and poor in South Africa, which is continuously widening (Wray, 2008).

A study conducted by Kube (1994:57) in the United States suggested that a relationship exists between the remuneration of directors and the performance of firms. Furthermore, the study's results revealed that financial performance outcomes are significantly influenced by the composition of the remuneration package. A study conducted by Dommisse (2011:2) also found a strong relationship between the remuneration of directors and a firm's overall performance for the largest listed firms in South Africa.

The primary objective for most firms is to maximise shareholders' value. One possible method to achieve this objective is for firms to establish and align an appropriate relationship between the remuneration its directors receive and the financial performance the firm achieved. Various studies that were conducted in countries throughout the world reported mixed relationships between the remuneration of directors and firms' financial performance (see, for instance, the study by Windsor and Cybinski (2013:197) which was conducted in Australia). Comparisons between studies

conducted globally are difficult since the variety of individual studies all selected specific performance measures, which the particular researcher believed were important measures to obtain the best results. In addition to these measures other factors influencing the relationship included aspects such as corporate governance of the country, type of sector in which the study was conducted and the economic market climate. Irrespective of all these factors, the studies conducted globally focused specifically on the relationship between directors' remuneration and firms' performance.

The majority of previous studies primarily investigated directors' remuneration as one total amount (one variable), and did not focus specifically on the four main sub-components within remuneration (Van der Linde, 2007:1). In addition to this, focusing on the different types of directors should also contribute towards increased clarity and improved understanding of the relationship between the remuneration of directors and the financial performance of a firm.

The objective of this study was first and foremost to establish whether a relationship exists between directors' remuneration and firms' financial performance in the Industrial Sector of the JSE; furthermore, to determine the type of relationship, if any, by focusing more on the sub-components of the dependent variable and distinguishing between the different types of directors in a firm. Secondly, this study was conducted to enhance the knowledge in the research field of financial performance and remuneration.

This study considered a sample of listed and delisted firms on the Industrial Sector of the JSE for the period 2002 to 2010. Variables for this period were first determined, distinguishing between the dependent variables (directors' remuneration and its sub-components) and the independent variables (four financial performance measures of a firm). All the data collected from the firms included in the sample were captured and formatted to use in this study. After restructuring and adjusting the data layout in compatible and basic form, the researcher was able to start the investigation and test for possible relationships between the dependent and independent variables.

The rest of this chapter is structured as follows. Firstly, a brief overview of each chapter in this study is provided. Important topics from the literature review are highlighted and revisited. Secondly, the empirical investigation elaborates on the important findings of

the descriptive and inferential statistical research results. Thirdly, remarks and additional findings identified throughout the study are mentioned, thus over and above those required to achieve the primary and secondary objectives in the study. Finally, the study concludes with a section outlining the limitations of the study and providing recommendations for future research.

6.2 SUMMARY

A brief overview on the objectives that were formulated, literature strengthening the purpose and research design of the study, as well as the methodology used are discussed in this section.

6.2.1 Research objectives

The primary objective of the study was to investigate the relationship between directors' remuneration and the financial performance of Industrial Sector firms listed on the JSE for the period 2002 until 2010.

In line with the problem statement and the primary objective, the following hypotheses were formulated:

H_0: There is no relationship between directors' remuneration and the financial performance of the firms.

H_1: There is a relationship between directors' remuneration and the financial performance of the firms.

Furthermore, the following secondary objectives were identified for the study:

- Identifying the different sub-components of the total directors' remuneration;
- Investigating the contribution of the various sub-components towards total remuneration;
- Investigating the relationship between the various sub-components of directors' remuneration and firms' financial performance variables selected;
- Comparing the total and the sub-component remuneration of executive directors with the financial performance variables of the firms; and

- Comparing total non-executive directors' remuneration with the performance of the firms.

6.2.2 Research design and methodology

Previous studies conducted in this field of finance mainly investigated executive directors' total remuneration compared to the financial performance of firms. Various variables and measurement methods were initially considered for this study, looking at studies from all over the world. Scholtz and Smit (2012:22), for example, focused on firms listed on the Alternative Exchange (AltX) board of the JSE in South Africa, while Dommisse (2012:2) examined the total remuneration of the top 120 JSE-listed firms' executive directors in South Africa. Amess and Drake (2003:2) investigated the relationship between the board of directors and the size of the firm in the United Kingdom, whereas Windsor and Cybinski (2013:197) concentrated on ROE and EPS in the Australian business environment. The question, however, remained whether there is a relationship between the remuneration of directors and the financial performance of the firms selected for this study. If so, what is the nature of the relationship and how are directors remunerated?

As explained in Section 4.3, a ten-step research approach was followed for this quantitative study. Secondary data were gathered and judgement sampling was used. JSE listed and delisted firms from the Industrial Sector were selected. The reason for including delisted firms is to reduce survivor bias. All firms needed to be listed for at least three consecutive years and had to have the adequate required financial data, within the selected period, to be included.

The time period 2002 until 2010 was selected for the study. The main reason for this time period is the format of the annual financial statements which remained consistent to compare for this period. In addition, corporate governance also improved (e.g. The King II report to the King III report). Data used in the study is classified as panel data (cross-sectional and time-series dimension data). After considering all prerequisite conditions, the study ended with a final sample of 93 firms, representing 6 109 complete observations lines for the required data in the set. Each line identified the specific year, the firm's name, director's name, type of director (executive or non-executive), all the dependent variable's sub-components, namely basic salary, bonuses (performance), share gains/options and other remuneration as well as the

financial independent variables of the firm (turnover, EPS, MVA and TSR). The two accounting-based ratios (namely turnover and EPS) and the two market-based ratios (namely MVA and TSR) were selected as measures of sample firms' financial performance. This research study is described as a quantitative study, due to the financial numerical data used, directors' remuneration amounts, as well as fundamental financial statement data used to conduct the study. McGregor BFA (Pty) Ltd (2012) was used to obtain standardised financial statements, which were necessary to calculate the different financial ratios, and TimBukOne (2012) to acquire the directors' remuneration data. For the descriptive statistics, Microsoft Excel (2012) was used and for the inferential testing, SPSS Statistics (2013) was utilised to analyse the data set. All the statistical and regression tests were conducted for all firms and their directors that were included in the data set to achieve the overall required results.

The secondary data were analysed by means of both descriptive and inferential statistics in order to obtain the necessary results. The descriptive statistics included measures such as the mean, median, minimum and maximum values, variance, standard deviation, skewness and kurtosis for all variables. The descriptive statistics section also illustrated by means of a histogram how trimming was performed to identify outliers for the dependent and independent variables.

Inferential statistics, which included multiple regressions and one-year lag testing, were used to achieve the study's objectives as well as to obtain the findings of the study. The F-test for fixed effects and the Hausman test for random effects were used to determine which regression model is most appropriate for the regression test. The regression coefficient and its level of significance was then determined to see whether there is a relationship between the independent and dependent variables. In order to be accurate, the Breusch-Pagan test for heteroskedasticity was used to test for heteroskedasticity in the panel data since the descriptive statistics indicated that the data set contained non-parametric data.

For comprehensiveness of the study, one-year lag periods were built into the preferred regression models, since past studies suggested that directors were remunerated only after financial performance already occurred (Amess & Drake, 2003). Lag testing strengthened the researcher's findings for this study.

The statistical analysis results obtained in this study were provided in various tables in Chapter 5. These results were discussed for the entire period under review, including the economic crisis that occurred within the review period.

6.3 RESEARCH RESULTS AND DISCUSSION

In this section the main empirical findings of the study are summarised. After investigating all the dependent and independent variables identified in this study, findings were made. The following findings were concluded after analysing the data set for descriptive statistics.

6.3.1 Descriptive statistics

(a) Dependent variable findings

(i) All directors: Table 5.1

There is a large gap within directors' remuneration itself. When comparing the mean and median, there were only a small number of directors earning substantially larger amounts compared to the rest, whose earnings were in a closer proximity range. The high mean when compared to the median, focuses on the maximum amounts earned by top directors. It must be noted that executive and non-executive directors are collectively reported in Table 5.1. Therefore, it was also necessary to investigate all the sub-components of remuneration for executive and non-executive directors separately to determine possible relationships for the two types of director.

The total number of directors in the Industrial Sector increased by only 100 directors over the nine-year study period; unexpectedly it even increased during the global financial crisis. An explanation for the increase during the crisis period could be that competent management was utilised to save the firms from downfall, making the firms more competitive during the global financial crisis period. From Table 5.1 it was still not possible to be identify which type of directorship increased during the global financial crisis period. These descriptive statistics are difficult to analyse due to the fact that the findings were very broad by including all directors in Table 5.1. The split was however made between the two types of directors in Section 5.2.1 (b) for executive directors and Section 5.2.1 (c) for non-executive directors.

It seems that a large range exists between the remuneration of some Industrial Sector firms and other ones. This divergence in remuneration seems to be growing. One reason for this remuneration trend could be the shortage of competent directors. This pushes up the remuneration of directors in some firms, resulting in their remuneration becoming more competitive and widening the pay gap between firms continuously.

Derived from the mean for remuneration, a significant increase is visible between 2005 and 2006, since total remuneration increased significantly from the previous four years. This growth period was of short duration, since the global financial crisis followed in 2008, lowering the mean of total remuneration until the end of the study's period.

As mentioned above, the directors had to be sub-divided to achieve a better understanding of what the remuneration packages for both types of directors consisted of, and what remuneration trends could be observed over the study's period. Below, executive and non-executive directors' findings are discussed separately.

(ii) Total remuneration of executive directors: Table 5.2

Focusing on total remuneration for all directors, it was evident that the largest portion of remuneration was allocated to the executive directors, which is general practice in firms. Furthermore, it must be noted that the number of executive directors managing the firms declined over the nine years within the study period by an average of 10% over the nine years. This could be due to cost-saving measures, by making use of more consultants and appointing more non-executive directors that are less expensive with lower long-term remuneration commitments. The executive directors on average formed 47% of the total number of directors, but accounted for more than 90% of the total remuneration paid to all the directors included in this research study.

Although the overall number of executive directors decreased, the amount of remuneration paid to these directors still increased by more than 10% annually which is relatively high. This does not only indicate that directors' remuneration increased more than the average salary increase rate in South Africa, but that the gap between the highest paid workers in South Africa and the lowest is still widening.

The wide range between minimum and maximum remuneration values might be justified when considering the difference in firm sizes in the Industrial Sector. It could be possible that some executive directors knew what was going to happen in the

foreseeable future regarding the global financial crisis. It may seem that some directors allegedly used this opportunity to make large profits just before the global financial crisis occurred. This behaviour is directly in conflict with shareholders' value creation.

From the increasing gap between the mean and median remuneration values in Table 5.2, it can be concluded that the majority of executive directors' remuneration increased slower, while a few individuals had rapid increases, resulting in a spike in the mean compared to the median. This is illustrated by looking at the standard deviation which expanded to more than three times the original value in 2002, thus illustrating that remuneration paid to directors moved further away from the mean.

(iii) Total remuneration of non-executive directors: Table 5.3

The number of non-executive directors increased significantly for the overall period of the study, and even more so during the global financial crisis with a total growth rate of 45% in the number of non-executive directors. Although remuneration paid to non-executive directors was considerably smaller, and generally compensated them for attending meetings, consulting and rendering services to the firm, the remuneration for these directors increased more rapidly than those paid to executive directors. When inspecting the maximum amounts paid to non-executives, there were individuals who received various sub-components of remuneration which are not standard for non-executive directors as being displayed in Table 5.3. This unusual remuneration usually occurs when an executive directors retires and changes to non-executive directorship, thus still having share options or still managing as an executive director for short periods in a year, but is listed as a non-executive on the financial statements of the firm.

The standard deviation for non-executive directors' remuneration spiked during the global financial crisis period. This might be due to the fact that the number of non-executives in firms increased significantly, which may suggest that firms needed assistance during the crisis period and were willing to remunerate non-executive directors to ensure that the firms survived.

(iv) Executive and non-executive directors' sub-components: Table 5.4 - Table 5.9

Focusing on the various components of the remuneration for all directors, it was found that approximately 3% of non-executive directors received a basic salary, which is

unusual. Possible reasons for these occurrences may include part-time acting or switching during the financial year from executive to non-executive directorship, as mentioned previously. Due to the fact that directors in Table 5.4 received a basic salary, thus having a value higher than zero, the difference between the minimum values and maximum values are identified. These amounts still show a large remuneration gap between directors, but can be attributed to non-executives earning small basic salaries. This remuneration gap, however, is not known with certainty by the researcher, and only assumptions can be made. Another reason for the wide range difference might be the differences in size between firms included in the study. In general the larger firms could remunerate their directors with larger incentives, since more responsibility and accountability are required.

The basic salary sub-component is more a fixed set compared to remuneration such as bonuses, share options and gains that seem to be more flexible (variable remuneration). It might be that these variable remuneration sub-components are generally more closely related to the financial performance of a firm, possibly resulting in stronger positive relationships when investigating the inferential statistics section.

Bonuses paid to all directors continuously increased during the study's period, except in the global financial crisis period. The standard deviation fluctuated during the entire timeframe and increased more than four times since the start of the study as illustrated in Table 5.5. This increase can be due to enormous bonuses that emerged as indicated by the large maximum values. In general, more than two thirds of executive directors received a bonus annually as displayed in Table 5.6. It must be noted that it does not necessarily mean that the one third of directors not receiving bonus remuneration, are not being remunerated otherwise and vice versa. The bonus trend of remuneration showed a slight increase from 2002 until 2008. It is suggested that bonuses are still the most popular performance motivation method for remunerating executive directors. They could either have received share options, higher basic salaries or benefits classified under other remuneration.

Interestingly, two rare incidents occurred during the study's period, where executive directors had to pay back their bonuses to the firms. Reasons may include borrowing on their bonuses at the firm, or being overcompensated previously. The most likely reason is that directors resigned and had to repay money to the firm. By considering

the descriptive statistics, it seems that firms motivated their directors strongly during the global financial crisis period to perform by offering larger bonuses. The situation stabilised in 2008, with a significant decrease in bonuses paid during the last years of the study.

The sub-component, other remuneration, consists of medical, pension, motor, phone and travel allowances for directors. Although it is not assumed to be a popular remuneration method to reward directors for the financial performance of firms, it still contributes to a large amount of remuneration received by directors. It is surprising that a large number of directors in the industry earned up to R19.65 million in the sub-component other remuneration in 2007. It seems as if more firms remunerated their directors indirectly with allowances than by only compensating them with a basic salary and bonus. In terms of executive directors, the standard deviation also expanded wider, meaning that the gap is increasing between the highest and lowest paid directors, when examining the mean and other remuneration received by executive directors.

In terms of non-executive directors, other remuneration was found to be their main source of remuneration, since Table 5.4 and 5.5 identified the small number of non-executive directors receiving remuneration from basic salaries and bonuses. Non-executive directors' other remuneration increased substantially as can be seen in Table 5.9. Interestingly, a few non-executive directors did not receive remuneration for services rendered to the firms during the nine years as seen in Table 5.9's minimum column. This observation was clear during the global financial crisis period, where it was noted that a few directors did not receive remuneration for that period. Two possible explanations may be considered. The first reason might be that the non-executive directors were willing to render services and assistance for free. The second may be that firms merely postponed payment or did not use non-executive service, which is highly unlikely. The mean remuneration for these non-executive directors increased from an average of R82 000 to R251 000 over the nine-year study period. Table 5.9 shows an increase in average remuneration which is exceptionally high, in that it is more than three times the starting amount in 2002.

Share profits or gains data were difficult to obtain from firms due to the lack of disclosure, transparency and limited governance guidelines in the directors'

remuneration field, especially for the first few years of the study. Usually, studies tend to ignore share profits or gains, but this is actually where the interesting findings could emerge. On average about 27% of all executive directors benefited from share profits or gains during the study's research period as indicated in Table 5.10. The number of directors benefiting from share gains and profits are considerably less than those receiving bonuses, suggesting that this type of remuneration is not as popular. This type of directors' remuneration may however be more focused as a long-term performance incentive. It must be mentioned, however, that this statement is only a theory. Only 2.4% of the non-executive directors had profit gains or share options. This might be due to the fact that they resigned from their executive positions earlier or as motivation incentives to ensure that non-executives are committed to the firm. As can be seen in Table 5.10, the difference between share gains minimum and maximum amounts is widely spread, and could indicate that directors had the option to decide how many shares they wanted to sell, when they wanted to sell these shares or rather to exercise their share options.

An observation creating suspicion is that a significant amount of share gains was collected just before the global crisis. Even the number of directors exercising share options was far above average, and all of these profits formed part of the total remuneration paid to directors, as can be seen in Tables 5.1 and 5.2 in Chapter 5. Occurrences like this might be by purely accidental or random, but opinions may differ, especially so close to the global financial crisis. The share gains varied significantly during the study's period, and executive directors retiring should also be taken into consideration. Although most data on shares gains were available for the study, the researcher stated that with better regulation and legislation regarding disclosure of director remuneration, more sophisticated information on profit shares could have been retrieved from the selected firms during the study's research period.

Tests for skewness and kurtosis for the dependent variables indicated that all the variables are skewed to the right, meaning they are positively skewed. All the variables are also leptokurtic, meaning they are more peaked than a normal distribution. The dependent variable's sub-component, basic salary, was the least peaked and therefore the closest to a normal distribution. From this information it was concluded that the descriptive statistics analysis should focus more on the mean than the median values due to the skewness identified in the data.

(b) Independent variables' findings: Financial performance measures

(i) Turnover

As illustrated in Table 5.12 in Chapter 5, it was evident that turnover in general increased in the Industrial Sector during the study period. A general overview can be drawn from the descriptive statistics done in Section 5.3.1 regarding the turnover variable. The descriptive statistics show an overall healthy growth picture, starting with an economic boom period between 2003 and 2005, followed by a three-year stagnating period, due to the global financial crisis. As can be seen in Table 5.12, the standard deviation widens as the years continued, indicating that firms over- or underperformed in comparison with the sector itself.

(ii) EPS – Earnings per share

EPS fluctuated during the study's selected time period because it is not a standardised measure. It is safer to rather consider the general overview of the time period than making conclusions by focusing on the minimum and maximum values. Throughout the study's period, the median for EPS is significantly lower than the mean. This might be due to a few firms significantly outperforming others in the sector, spiking the mean. Overall, the median remains low, due to most firms having a low EPS. The change in the variance is also difficult to discuss and problems like these are dealt with more comprehensively in Section 6.3.2 in Chapter 6 regarding the inferential tests.

(iii) MVA – Market value added

As illustrated in Table 5.15, the minimum and maximum MVA values are positive for all the years except for the first two years of the study, 2002 and 2003. This suggests that the majority of firms added value throughout the study's period. The two minimum negative values identified in Table 5.15 are most probably outliers in the data set. MVA maximum values, however, fluctuated significantly throughout the study's time period compared to the minimum values that are in a small radius of each other. Observing the means' incline and decline trends in this time period, the relationship between the MVA and total directors' remuneration seems to be positive, comparing Tables 5.1 and 5.15. It might however still be coincidental that both increased for these periods, thus a regression test was done to determine whether a significant relationship existed between this independent variable and the dependent variable's sub-component.

Finally, the standard deviation in Table 5.15 also shows an overall significant decline from 2002 until 2010, indicating that firms in general created MVA more collectively as a sector than individually.

(iv) TSR – Total share return

Significant changes occurred in 2007 for TSR, as illustrated in Table 5.14, where the median is negative due to the global financial crisis impact. This trend improved in 2008, where the median and mean were still negative, but with a smaller standard deviation for 2008 and 2009. These findings may suggest that a small number of the selected firms in this study's sample outperformed the industry during the global financial crisis period. During this period, the maximum TSR decreased by two-thirds compared to the previous year and was in a decline phase from 2006 until 2008.

Overall, the mean and median TSR values sometimes decline during the period, starting strong in the early 2000s with hyper returns between 2003 and 2005, but declined to a much lower mean and median value in the last few years of the study. Unfortunately each of the years some firms lost significant share returns as seen in Table 5.14 since the bottom percentage set for the TSR is fixed at -100% in the minimum column. This is mainly due to slow economic growth and factors like interest rates and exchange rates directly affecting the TSR. The TSR is one of the market-based measures included in this study, and is affected by the external economic environment of the firms. The decline in the TSR during the period and an increase in the total directors' remuneration (Table 5.1) suggested a negative relationship between these two variables. The relationship status was established in the inferential section.

(c) Independent variables: Skewness and kurtosis

As illustrated in Table 5.16, the skewness for TSR, EPS and turnover was positive, thus positive skewness suggests that frequent small negative outcomes occur. For TSR this makes sense since the lower limit on returns is only -100%. MVA, on the opposite side, has a negatively skewed distribution with a long left tail, which suggests that greater chances of extremely negative outcomes are possible. Thus, skewness testing assists in determining the location and variability of a data set. The test proved that the data set is not normally distributed, and assisted the researcher to select the correct inferential methodology to analyse the data set.

Table 5.16 also shows that kurtosis for TSR, MVA and turnover is very high and not close to a normal distribution. This may be due to the wide scattering of data points further away from the mean, thus indicating heavy tails in the distribution of the data.

The descriptive statistics describe the basic features of the data and are of particular importance for statistical research. It enables the researcher to discover new findings and trends, and visualising a bigger scope around the data set used in this study.

6.3.2 Inferential statistics

In this study, regression analysis was preferred as it enabled the researcher to determine not only the relationship between two or more variables (whether positive or negative), but also to determine the strength of the relationship (Johnson & Kuby, 2007:173). The F-test for fixed effects and the Hausman test for random effects were selected to test for the most appropriate regression model for the data set. Outliers were eliminated through applying trimming, thus the data were trimmed to three standard deviations to each side from the centre of the data. For better results the data set was also tested for heteroskedasticity, which in all instances was present and adjusted accordingly.

Finally a one-year lag test was performed in order to identify possible delays between the selected financial performance of the firms and directors' remuneration in order to determine the possibility of stronger positive or negative relationships between the independent variables and the sub-components of the dependent variable.

In Table 5.28, differentiating between the two types of directors, namely executive and non-executive, as well as comparing the expected findings to actual findings are displayed. Investigating the sub-components of directors' remuneration's relationships to the financial performance measures identified in this study was overall the most insightful of all the findings.

(a) All directors

Definite relationships between the firm's financial performance measures and the total remuneration paid to all directors were found. There are, however, individual cases where the findings showed a negative relationship as indicated in Table 5.17. In order to understand the relationships between the variables in the study, the inferential

results in Chapter 5 were used to identify findings and state the suggested recommendations for the study. Table 6.1 below summarises the relationship, if any, as well as the type of relationship between the financial performance variables and the dependent variable with its sub-components.

TABLE 6.1: Relationship situation and type: Directors' total remuneration –TSR, MVA, EPS and turnover

Relationship + / – or "no relationship"	Total Remuneration	Basic Salary	Bonus	Other Remuneration
Turnover	+	+	+	+
EPS	+	No Relationship	+	No Relationship
TSR	-	-	-	-
MVA	+	No Relationship	+	No Relationship

Based on the regression analysis, the majority of the relationships between the dependent and independent variables were found to be significantly positive or negative. From Table 6.1 it seems that bonuses paid to directors are the remuneration sub-component with the most positive relationships to the performance measures selected in the study. Bonuses are also the most influential and most popular form of remuneration as discussed in Section 5.5.2 (c). This finding is also supported by looking at Table 5.20 where the adjusted R^2 was calculated, indicating that 30% of the variance in the dependable variable can be explained by means of the independent variables selected. This variance was the highest value observed out of all the tables in Chapter 5.

Basic salary and other remuneration had similar overall relationship results, having negative significant relationships with TSR and positive significant relationships with turnover. Other remuneration at this stage was still reflecting the executive and non-executive directors' remuneration combined, thus findings can be better concluded below when executive and non-executive are interpreted separately.

(b) Executive directors

The findings reported in Table 6.2 below are similar to those in Table 6.1 above. This comes as no surprise, since only executive directors are supposed to receive basic

salary and bonuses. Due to the substantial amount of remuneration executive directors receive in relation to the total amount of remuneration paid to all directors, no significant changes regarding the relationship situation between the dependent and independent variables were observed.

TABLE 6.2: Relationship situation and type: Executive directors' total remuneration - TSR, MVA, EPS and turnover

Relationship + / – or "no relationship"	Total Remuneration	Basic Salary	Bonus	Other Remuneration
Turnover	+	+	+	+
EPS	+	No relationship	+	No relationship
TSR	-	-	-	-
MVA	+	No relationship	+	No relationship

Since the same discussion as stated in the paragraph below Table 6.1 can be applied here, additional discussions on executive remuneration as displayed in Table 6.2 were conducted. TSR have a significant negative relationship throughout all the regression tests done in Chapter 5. This suggests that when TSR is negatively influenced, remuneration for directors increased. This relationship could possibly be explained as follows: TSR focuses on the long-term performance of a firm while directors are rewarded primarily for the short-term performance. It is suggested by all of these findings for executive directors that firms need to start placing caps on remuneration pay-outs and need to develop and use a more balanced approach between cash and equity. Firms should also not only focus on short-term performance measures like EPS, and this should reduce the amount of risk taking and build better long-term financial sustainability in the firm.

(c) Non-executive directors

In this research study the non-executive directors' remuneration was included in other remuneration. However non-executive directors also received additional remuneration similar to those of executive directors' remuneration. For this reason Table 6.3 below included both remuneration columns.

TABLE 6.3: Relationship situation and type: Non-executive directors' total remuneration - TSR, MVA, EPS and turnover

Relationship + / – or "no relationship"	Total Remuneration	Other Remuneration
Turnover	+	+
EPS	No relationship	No relationship
TSR	-	-
MVA	+	+

Although the results reflected in the total remuneration and other remuneration columns are identical, there were changes in the data set that almost changed the relationship situation when investigating the MVA relationship in more detail as illustrated in Table 5.27. EPS does not have a significant relationship with the remuneration paid to non-executive directors. This relationship makes sense since non-executive directors are not remunerated like executive directors by promoting EPS in a firm. The turnover performance measure yields a positive relationship, as throughout all the regression tests done in this study, with a very strong significance in relationship. This suggests that when the turnover of the firms increased, so did the remuneration paid to directors.

(d) Lag testing results

Lag testing suggested that significant relationships existed between the dependent and independent variables in this study; the relationship, however, was overall less significant than when the same year's directors' remuneration and performance were tested. These findings were motivated by comparing the adjusted R^2 values from the same year regression testing between the variables with the one-year lag test conducted in which remuneration is paid one year after financial performance occurred in the firms. By comparing Table 5.18 with Table 5.29, Table 5.22 with Table 5.30 and lastly comparing Table 5.26 with Table 5.31, the above findings were made. The overall findings remained the same as illustrated in Table 6.1, 6.2 and 6.3, and only the strength of the relationships between the dependent and independent variables differs slightly.

It is apparent from these results that the majority of the firms had an effective remuneration strategy in place in order to promote financial performance and growth of the firms. This statement can be concluded from the relationships identified in the tables in Chapter 5. For the purpose of the study, the focus was on the relationship between directors' remuneration and financial performance of firms only, thus, the relationship was viewed in isolation, excluding other internal or external factors that might influence firms' financial performance resulting in change in the remuneration paid to directors.

The data set produced multiple results since the independent variables consisted of four financial measures that were aligned to the dependent variable, consisting of four remuneration sub-components. In order to understand the directors' remuneration better, a distinction between executive and non-executive directors was made due to their functions and remuneration structures that differ.

Within the study's time period a global financial crisis emerged which provided the researcher with the opportunity to see what effects might occur in unusual economic circumstances. The next section highlights the findings from this global financial crisis period.

6.3.3 The influence of the global financial crisis on the study's findings

The poor financial results reported during the global financial crisis period generated heightened attention to directors' remuneration and gave firms a reality check to once again go and investigate the remuneration paid to all directors and whether the remuneration is linked or aligned to financial performance. It seems that firms started realising that in order to recover from the global financial crisis more decisive retaining and motivational remuneration packages were needed for directors. However, the losses shareholders incurred during the global financial crisis period as well as how the firm would adapt in the changing economy also need to be acknowledged when compiling the remuneration packages.

The global financial crisis impacted findings from descriptive and inferential statistical tests' results. Directors' remuneration and the firms' financial performance were affected as follows:

- More non-executive directors were appointed and the number of executive directors was reduced in the sector;
- One of the trends identified in this study's time period is that firms started to emphasise the restriction of shares to directors. Directors were making money alongside investors in the short term, but firms had to start focusing more on the long-term financial sustainability of the firms;
- Better internal controls and looking at previous scenarios (global financial crisis of the 1980s) to have the proper steps in place to minimise risk, like having proper remuneration metrics, stress testing potential remuneration like remuneration pay-outs in various economic scenarios to minimise risk; and
- More aggressive remuneration strategies were exercised by individual firms with excessive remuneration packages to ensure growth during the global financial crisis period.

In Section 6.3 the results and discussion of the findings made in this study were explained and discussed in order to place the data set's results in context. Chapter 6 concludes by discussing additional interesting findings, limitations experienced in this study as well as suggestions for future research in the field of directors' remuneration and financial performance of firms.

6.4 ADDITIONAL INTERESTING FINDINGS

The following additional findings were made:

- Executive remuneration levels showed some restraint. Currently, planning in terms of remuneration seems to be more thorough so that firms can prove to shareholders that overcompensation should not be an issue;
- The remuneration gaps between directors in the sector are still widening, and this could partially be due to the difference in size between the firms. In addition, the remuneration directors receive increases annually at a rate exceeding inflation in South Africa, as well as what the general public receives for ordinary work;
- Disclosure and transparency for directors' remuneration and especially some of the sub-components were difficult to obtain for the first few years of the study.

The King III report which builds on the King II report assisted in ensuring that governance in firms improves, thus improving on the meaningfulness, disclosure and transparency with regards to remuneration for directors;

- The focus should be on corporate performance dictating remuneration, to ensure that objectives for the firms are met;
- It is evident that shareholder activism is growing and that firms must prepare themselves to be more transparent and disclose all financial activities in order to prevent being a target for the media;
- Executive directors' remuneration differs considerably across the Industrial Sector, in terms of both the size and the structure of the remuneration packages;
- Executive directors' remuneration followed a steep upward trend since the early 2000s, even with the global financial crisis in-between;
- Evidence on the extent to which executive remuneration reflects firm performance displayed mixed results; this might be due to a time period lag in remuneration for performance;
- Share ownership is often dispersed, making it difficult for shareholders to effectively oppose unreasonable remuneration packages;
- Individual shareholders do not necessarily have much influence on executive remuneration as it is limited by factors like benchmarking and trends; and
- Share-based remuneration is often inefficient, as it only refers to the performance of the firm as a whole and not to the individual performance of the director. Therefore, directors may benefit from the growth of the firm's shares even if their own performance was poor.

To conclude, it is obvious that directors' remuneration differed considerably between Industrial Sector firms when considering, amongst others, size, management style, disclosure, and the composition of the remuneration package. This study has shown that a clear and distinct relationship could be confirmed between directors' remuneration and the firm's financial performance, despite some evidence to the contrary in this respect. Not all the relationships are positive, since negative relationships also existed. The objective of the study was met, by determining that a relationship exists between directors' remuneration and the financial performance of

firms. Furthermore, the study also identified several other positive and negative relationships between the types of directors, their remuneration sub-components and the financial performance variables selected in this study.

In addition to all the above findings, the study also suggests some important questions that could be addressed in future research since directors' remuneration in relation to firms' financial performance is such a relevant global topic.

6.5 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The following limitations were identified during this study:

- Financial data of certain firms were very difficult, if not impossible, to obtain. This is due to acquisitions or mergers that took place in the selected time period in the Industrial Sector, or due to firms switching from various sectors on the JSE;
- Only Industrial Sector firms, listed and delisted, on the JSE were used for the study due to the lack of privately-owned firms' available financial performance information and proper disclosure;
- The financial information of a few firms was not available for certain years in the study period although these firms were active and running;
- Only one lag year was included in the study, and this can be investigated for longer time durations;
- Financial figures and statements could only be used up to 2010 due to the changes in the standardisation of financial statements; hence comparison issues would have occurred; and
- It was difficult to determine the overall non-executive remuneration range or gap since a few of these directors were being remunerated by other remuneration methods as well.

Despite the limitations, the research findings still contributed towards the knowledgebase within the financial field focusing on the relationship between directors' remuneration and a firm's financial performance.

The following research areas could be further explored:

- A follow-up study could be compiled to determine whether the relationship between financial performance of firms and directors' remuneration improved or deteriorated for the period after the introduction of the King III report;
- The study could be expanded to include corporate governance as this issue is directly influenced by the issue raised, better known as the agency theory;
- The relationship between firm performance and directors' remuneration in various other sectors and countries could be investigated and compared, to identify whether the results are similar to or unique to South Africa;
- Long-term and short-term incentives could be investigated to ascertain whether firms prefer to focus on short-term remuneration for short-term performance periods, or long-term remuneration for long-term performance in firms; and
- The study could be expanded to be more specific, by focusing on each dependent variable separately, and developing each variable separately into an individual hypothesis, thus focusing on each component of directors' remuneration in more detail.

All the research possibilities listed above will enrich the field of study and may strengthen the findings obtained from this study.

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