

ESSAYS ON FINANCE AND INTERNATIONAL TRADE IN SUB-SAHARAN AFRICA

Richard Kofi Akoto

**Dissertation presented for the Degree of Doctor of Philosophy in
Development Finance at the University of Stellenbosch**



UNIVERSITEIT
iYUNIVESITHI
STELLENBOSCH
UNIVERSITY

100
1918 · 2018

Supervisor: Professor Charles Adjasi

December 2018

DECLARATION

I, Richard Kofi Akoto, hereby declare that apart from authors and institutions whose works were appropriately acknowledged, the work contained in this dissertation is my own original endeavour and that I have not previously submitted it partly or wholly to any other institution of advanced learning for the award of any other degree whatsoever.

RK Akoto

December 2018

Copyright © 2018 Stellenbosch University

All rights reserved

DEDICATION

I dedicate this work to my lovely wife, Akofa and children, Fafa and Seme for their prayers and endurance while I was away.

ACKNOWLEDGEMENTS

I thank the Almighty God for the strength, protection, knowledge and wisdom to complete this work. I am also thankful to my supervisor; Prof. Charles Adjasi for his brilliant guidance, counselling and supervision which I believe has brought out the best in me. My appreciation also goes significantly to the Ghana Education Trust Fund (GETFund) for the Scholarship Award which gave me the financial support to complete this study.

I am also indebted to the hardworking Faculty of the University of Stellenbosch Business School (USB) for their immense contributions and inputs made into my work during the various colloquium presentations I have made at USB. I am also grateful to Mrs van Zyl Marietjie, Mrs Saayman Norma and Mrs Ashlene Appollis for the excellent administrative support they provided me during my study at Stellenbosch Business School.

My gratitude also goes to the World Bank and the United Nations Conference on Trade and Development (UNCTAD) for giving me access to their various databases. My thanks also go to Mr Nigel Bell for accepting to proofread my work.

I would like to thank my lovely mother, Madam Grace Yawa Abaye for her sacrifices in seeing me through school. My gratitude also goes to my humble and affable wife, Akofa and children, Fafa and Seme for their fortitude and moral support and to my siblings, Charles, Esenam, Eric, Edinam and Elikplim for their prayers.

To my PhD colleagues, particularly, Raph Nordjo, Joseph Nyeadi, Lordina Amoah and the entire 2014 PhD Development Finance cohort at USB, I say thank you for your excellent support. I am also immensely indebted to my friends, Professor John Gatsi of University of Cape Coast School of Business, Dr Dadson Awunyo-Vitor of Kwame Nkrumah University of Science and Technology, Dr Francis Anderson Adzei of University of Ghana Business School and Dr Ibrahim Mohammed of University of Professional Studies, Accra for their encouragement and support in diverse ways. Finally, to all those who helped in various ways but whom I have not explicitly mentioned, I say thank you.

TABLE OF CONTENTS

DECLARATION.....	i
DEDICATION	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS.....	iv
LIST OF TABLES.....	vii
LIST OF ACRONYMS AND ABBREVIATIONS	viii
ABSTRACT	xi
CHAPTER ONE.....	1
INTRODUCTION	1
1.1 Background of the Study	1
1.2 Motivation.....	3
1.3 Research objectives	5
1.4 Research questions	5
1.5 Rationale for each essay	6
1.6 Chapter organization	8
CHAPTER TWO.....	9
OVERVIEW OF EXPORTS AND FINANCIAL ACCESS IN AFRICA.....	9
2.1 Introduction.....	9
2.2 The state of firm-level exports in Africa	9
2.3 Key trends in export performance in Africa	11
2.4 Major barriers confronting international trade flows in Africa	17
2.5 Exporters' access to finance in Africa.....	20
2.5.1 Some major sources of export financing in Africa.....	23
2.6 The main regional economic blocs in Africa.....	25
2.7 Major policies to promote global trade in Africa.....	28
2.8 Conclusion	31
CHAPTER THREE	33
EXTERNAL CREDIT AND EXPORT DECISION: EVIDENCE FROM NIGERIA.....	33
3.1 Introduction.....	33
3.2 Overview of export development in Nigeria	35

3.3 Related literature	37
3.3.1 Theoretical Literature.....	37
3.3.2 Empirical literature	39
3.4 Methodology	43
3.4.1 Data	43
3.4.2 Model and estimation technique.....	44
3.4.3 Theoretical underpinning of the model.....	45
3.4.4 Identification issues and post-estimation tests	47
3.5 Empirical results.....	49
3.5.1 Descriptive statistics	49
3.5.2 Regression results	50
3.5.3 Discussion	51
3.6 Conclusion	52
APPENDIX.....	54
CHAPTER FOUR	56
EXTERNAL CREDIT AND FIRMS' EXPORTS SIZE IN NIGERIA.....	56
4.1 Introduction.....	56
4.2 Overview of efforts to promote exports of manufactured products in Nigeria	58
4.3 Related literature	60
4.3.1 Theoretical literature.....	60
4.3.2 Empirical literature	61
4.4 Methodology	64
4.4.1 Data	64
4.4.2 Model specification.....	65
4.4.3 Theoretical underpinning of the model.....	66
4.4.4 Estimation technique.....	68
4.4.5 Identification issues and post-estimation tests	69
4.5 Empirical results.....	71
4.5.1 Descriptive statistics	71
4.5.2 Regression results	71
4.5.3 Discussion	73

4.6 Conclusion	76
APPENDIX	77
CHAPTER FIVE	79
FINANCIAL DEVELOPMENT AND EXPORT DIVERSIFICATION IN SUB-SAHARAN AFRICA	79
5.1 Introduction	79
5.2 Overview of export diversification in Sub-Saharan Africa	81
5.3 Related literature	84
5.3.1 Theoretical literature	84
5.3.2 Empirical literature	86
5.4 Methodology	88
5.4.1 Data	88
5.4.2 Model specification	89
5.4.3 Theoretical underpinning of the model	90
5.4.4 Estimation technique and identification issues	93
5.5 Empirical results	94
5.5.1 Descriptive statistics	94
5.5.2 Regression results	95
5.5.3 Discussion	96
5.6 Robustness test	97
5.7 Conclusion	97
APPENDIX	98
CHAPTER SIX	99
CONCLUSION AND RECOMMENDATIONS	99
6.1 Conclusion	99
6.2 Contributions of the study	101
6.3 Recommendations	102
REFERENCES	104

LIST OF TABLES

Table 2.1 Total Exports Trade (Millions of USD) for Group of Developing Economies.....	12
Table 2.2 Annual Average Growth Rates of Exports and Imports for Group of Developing Economies.....	14
Table 2.3 Total Trade Balance (Millions of USD) and its Percentage of Imports for Group of Developing Economies.....	16
Table 2.4 Regional Trends in Financial Access for the periods 2005, 2010, and 2015.....	21
Table 3.1 Composition of the Sample.....	43
Table 3.2 Definition of Variables.....	45
Table 3.3 Descriptive Statistics.....	49
Table 3.4 Effect of External Credit on Export Decision in Nigeria.....	50
Table 3.5 First-stage Regression Summary Statistics: Post-Estimation Test (F-test) on the Strength of the Instrument ‘FinStatement’	54
Table 3.6 First-stage Regression Summary Statistics: Post-Estimation Test on the Strength of the Instrument ‘FinStatement’	54
Table 3.7 Tests of Endogeneity (Bank Credit).....	54
Table 3.8 Correlation Matrix.....	55
Table 4.1 Definition of Variables.....	65
Table 4.2 Descriptive Statistics.....	71
Table 4.3 Effect of External Credit on Exports Size.....	72
Table 4.4 Test of Endogeneity.....	77
Table 4.5 First-stage Regression Summary Statistics: Post-Estimation Test (F-test) on the Strength of the Instrument “FinStatement”	77
Table 4.6 First-stage Regression Summary Statistics: Post-Estimation Test on the Strength of the Instrument “FinStatement”	77
Table 4.7 Correlation Matrix.....	78
Table 5.1 Definition and Source of Variables.....	89
Table 5.2 Summary Statistics.....	94
Table 5.3 Effect of Private Sector Credit on Export Concentration.....	95
Table 5.4 Correlation matrix.....	98

LIST OF ACRONYMS AND ABBREVIATIONS

ACP	African Caribbean and the Pacific Countries
AfDB	African Development Bank
AGOA	African Growth and Opportunity Act
AMU	Arab Maghreb Union
ANE	Association of Nigerian Exporters
AUC	African Union Commission
BOP	Balance of Payment
CBN	Central Bank of Nigeria
CEMAC	Central African Economic and Monetary Community
CEN-SAD	Community of Sahel-Saharan States
CIF	Cost Insurance and Freight
COMESA	Common Market for Eastern and Southern Africa
CPA	Cotonou Partnership Agreement
DBJ	Development Bank of Japan
DMB	Deposit Money Banks
EAC	East African Community
EBA	Everything But Arms
EC	European Commission
ECA	Economic Commission for Africa
ECCAS	Economic Community of Central African States
ECIC	Export Credit Insurance Corporation
ECIS	European Community Information Service
EEC	European Economic Community
ECOWAS	Economic Community of West African States
EPA	Economic Partnership Agreement
ERSAP	Economic Recovery and Structural Adjustment Programme
ESF	Export Stimulation Fund
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product

GETFund	Ghana Education Trust Fund
GFD	Global Financial Development
GMM	Generalized Method of Moments
GSP	Generalized System of Preferences
HOS	Heckscher-Ohlin-Samuelson
HHPI	Herfindhal-Hirschman Product Index
IGAD	Intergovernmental Authority on Development
IMF	International Monetary Fund
ISO	International Organization for Standardization
KPMG	Klynveld Peat Marwick Goerdeler
LIML	Limited Information Maximum Likelihood
MAN	Manufacturers' Association of Nigeria
MAP	Millennium Partnership for the African Recovery Programme
MFI	Microfinance Institutions
NACCIMA	Nigerian Association of Chambers of Commerce, Industries, Mining and Agric
NECP	Nigerian Export Promotion Council
NEPAD	New Partnership for Africa's Development
NEXIM	Nigerian Export Import Bank
NIPC	Nigerian Investment Promotion Commission
NBS	Nigeria National Bureau of Statistics
OECD	Organization for Economic Cooperation and Development
PMN	Program de Mise à Niveau
R&D	Research and Development
RECs	Regional Economic Communities
REGs	Regional Economic Groupings
RPED	Regional Project on Enterprise Development
RRF	Rediscounting and Refinancing Facility
RTAs	Regional Trade Agreements
SACU	Southern African Customs Union
SADC	Southern African Development Community
SITC	Standard International Trade Classification

SMEs	Small and Medium-sized Enterprises
SON	Standard Organization of Nigeria
SPS	Sanitary and Phytosanitary Rules
SSA	Sub-Saharan Africa
2SLS	Two Stage Least Square
UEMOA	West African Economic and Monetary Union
UHY	Urback Hacker Young
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
WDI	World Development Indicators
WTO	World Trade Organization

ABSTRACT

Access to finance has been noted as a vital ingredient in promoting international trade activities of firms. This thesis is a collection of three essays that investigate the effect of financial access on foreign trade activities in sub-Saharan Africa (SSA). Specifically, the study asks the empirical questions of whether access to external finance promotes the overseas market entry decision of firms and also enhances firms' exports size. It also asks whether high levels of financial sector development can help spur commodity export diversification in SSA. The study solicits data from the World Bank and United Nations Conference on Trade and Development (UNCTAD) databases.

The first essay examines the influence of external credit (bank credit and non-bank credit) on the likelihood of manufacturing firms to export in Nigeria. The findings show that access to both bank and non-bank credits positively and significantly drive the probability to export in Nigeria, suggesting that increased access to these sources of finance encourage more firms to internationalise in Nigeria.

The second essay investigates the effect of external credit (bank credit and 'suppliers and customer' credit) on firms' exports size in Nigeria. The findings here indicate that bank credit is exports-reducing while 'suppliers and customer' credit which is an alternative source of external credit to bank credit is positive and significantly drives exports size. This implies that while improved access to external credit is critical in enhancing firms' exports size, exporters need to be mindful of the characteristics of such credit. The evidence thus far suggests that a relatively more flexible and affordable credit source with long-term repayment plan that meets exporters' needs appears to be more exports-size promoting.

The third essay determines how financial development affects commodity export diversification in SSA. The findings reveal a strong positive influence of financial development on commodity export diversification in SSA, suggesting that countries with high level of financial sector development may have more diversified export baskets.

This study contributes to the extant literature in three unique ways. First, it shows that beyond bank credit, access to non-bank credit is also vital in overcoming the sunk and fixed costs of foreign market entry of Small and Medium-sized Enterprises (SMEs) in developing countries. Second, it expands the literature by showing that for an exporting SME to increase its exports size and remain buoyant in the market, structured finance in the form of ‘suppliers and customer’ credit is more important and serves the cause better than bank credit in developing economies. This is due to the flexibility in accessing ‘suppliers and customer’ credit coupled with the way it is designed to meet exporters’ needs relative to bank credit. Third, the study is also the first regional-level work that provides empirical insight into how financial development may affect export diversification in SSA and reveals that high financial sector development can help SSA countries diversify their export baskets.

Keywords: International trade, exports, bank credit, non-bank credit, financial development, Nigeria, sub-Saharan Africa.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Several authors including King and Levine (1993), Levine, Loayza and Beck (2000), Rousseau and Sylla (2003) and Bordo and Rousseau (2012) among others argue that finance plays a major role in the economic growth and development of nations. Similarly, the positive role of foreign trade in growth and development has also been identified by Samuelson (1939), Dollar (1992), Ben-David (1993) and Lucas (2009). However, it is astonishing to note that studies that examine the interplay of these two literatures are rare. The first endeavour to investigate the influence of financial development on international trade can be traced to the work of Kletzer and Bardhan (1987) who build on the Hecksher-Ohlin-Samuelson (HOS) trade model and show that at the macro-level, financial development is crucial for foreign trade activities as it makes access to credit possible and enables firms that depend on external credit for trade to flourish. An important implication of this therefore is that at the micro-level, differences in firms' financial access within and between nations could influence their trade behaviour and structure. Basically, international trade is vital because it encourages technology transfer, boosts production, promotes employment, reduces poverty, increases foreign income and accelerates economic growth and development.

In SSA, access to finance is limited compared to other developing regions like East Asia and Pacific (Adjasi, 2015) thereby distorting the ability of most firms to finance their investment projects (Hanouz & Ko, 2013). It is therefore unsurprising to note that most firms in SSA are unable to engage in foreign trade since such a venture requires a significant cash outlay. Several researchers including Subramanian (2008), ECA (2015) and Ndikumana (2015) observe that inadequate financial access has led to SSA's continued participation on the periphery of global trade, causing its economies to record relatively unimpressive trade receipts and poor economic performance.

To highlight the importance of finance in international trade, the G-20 policy makers during the 2008/2009 global financial crises, for example, pledged USD\$250 billion to support trade finance and prevent global trade from decline (Schmidt-Eisenlohr, 2013). In another vein,

Contessi and De Nicola (2012) cited unavailability of finance as the main reason that caused world trade to decline significantly between the months of October 2008 and January 2009. Auboin (2011) buttresses this point and argues that the 2009 ‘Great trade collapse’ could largely be attributed to the shortage of trade finance emanating from the prior financial crises which permeated the world’s financial system and rendered most firms cashless. These evidences suggest that access to finance may be vital for increasing overseas trade activities.

The theoretical framework which is premised on the extension of the ‘new new trade’ theory that embeds financial frictions opines that firms have a huge sunk and fixed costs to overcome when entering foreign markets and thus differences in access to finance at the firm level owing to credit market insufficiencies may prevent financially constrained firms from ‘going abroad’. Specifically, financial access is essential to mitigate the costs of research into the profitability of new export markets, adapting products to suit the taste and preferences of foreign customers, developing and maintaining foreign distribution channels and finally offsetting costs that are incurred in meeting capacity building (Chor & Manova, 2012; Abor, Agbloyor, & Kuipo, 2014). In addition to the above, Chor and Manova (2012) and Manova (2013) note that financial access is also critical in mitigating variable trade costs like shipping, duties and freight insurance which are often paid before export revenues are earned. This suggests that beyond encouraging firms to overcome the huge sunk and fixed costs of foreign market entry, access to credit is also crucial to sustain the export business. Similarly, at the macro-level, Ricardian trade models have also suggested that high financial sector development could also give rise to comparative advantage in export processing or manufacturing since such businesses need more finance to thrive relative to the production and export of primary commodities. This suggests that increased financial development may promote export diversification, a critical component of trade which encompasses value-addition through export processing or manufacturing and discovery of new export products.

In spite of the strong theoretical link between finance¹ and international trade, the empirical evidence particularly involving the influence of finance on export decision and exports size has however remained inconclusive. For example, whereas several authors including Muul (2008),

¹Here, the literature focuses largely on formal credit or bank finance.

Bellone, Musso, Nesta and Schiavo (2010), Berman and Héricourt (2010), Askenazy, Caldera, Gaulier and Irac (2011) and Abor et al. (2014) find that access to external credit positively and significantly drives firms' foreign market entry decisions, others including Stiebale (2011) and Lancheros and Demirel (2012) find no such relationship and argue that finance is not necessary for foreign market entry. Similarly, while Du and Girma (2007), Amiti and Weinstein (2011), Paravisini, Rappoport, Schnable and Wolfenson (2011) and Chor and Manova (2012) note that access to external finance positively and substantially mitigates variable costs of trade, authors such as Bellone et al. (2010), Berman and Héricourt (2010), Stiebale (2011) and Lancheros and Demirel (2012) find that access to external finance is not vital in mitigating those costs. Additionally, the literature is also limited in scope in exploring the effect of finance on other important areas of trade which are very critical for developing countries. For example, the empirical evidence of how finance may affect export diversification is limited in the literature. Another gap in the literature is also dearth of studies that investigate the above issues from a SSA perspective, a region where access to finance is comparatively lacking.

1.2 Motivation

Owing to inadequacy of internal earnings and cash flows in covering the huge sunk and fixed costs of firms' internationalisation, increased access to external credit has been shown to be significant in encouraging more firms to internationalise. Furthermore, access to external credit has also been argued to be relevant in assisting exporters to mitigate their working capital need, which is critical in sustaining foreign trade activity and thus useful in curbing high non-survivalists' rate in the export market. In spite of these positive and substantial roles of increased access to external credit in international trade, the empirical evidence still remains inconclusive, with much focus on formal credit (bank credit) and little research attention on SSA. Consequently, rigorous empirical work is needed to ascertain the real impact of access to external credit on firms' potential to internationalise and exports size in SSA. The findings of such a study are vital to shape policy in order to promote foreign trade and economic growth and development which have eluded most SSA countries for decades. For example, if it is found that access to external credit positively and significantly influences the 'foreign market entry decision' and 'exports size', then it will underscore the importance of high financial sector development on policy makers' agenda to promote such activities. On the other hand, if it is

found that access to external credit does not drive such activities, then this may suggest that firms might not be using enough of such credit in their operations in the region, either because of scarcity of such credit or because of its high cost, thereby stimulating discussions into how to prudently ameliorate the situation.

The empirical literature in the field of how finance may influence international trade is also limited in scope as it leaves out some burgeoning and critical areas which are vital for economic growth and development of developing and emerging economies. For example, the literature is deficient in evidence-based works that assess the impact of financial access on countries' export diversification. Presently, it is incontestable that such a study is urgently needed in SSA, given the region's over-reliance on primary commodity exports, a phenomenon which has adversely impacted on the trade receipts and economic performance of most SSA states. Thus, if it is established that access to finance positively and considerably drives export diversification, then it will emphasise high priority for financial sector development to stabilise and increase trade receipts, which is important to boost economic growth and development in SSA.

This current study which comprises of three essays therefore attempts to address the issues highlighted above and provides new insight into how access to external credit may influence international trade activities in SSA. Specifically, the first and second essays focus on Nigeria due to four main reasons. First, it is important to note that Nigeria is the largest² economy in SSA (IMF, 2015). Consequently, the level of the country's exporting activities which have implications for SSA's total trade performance and economic growth and development are of uttermost research importance to trade economists who are currently looking for prudent ways to heighten the region's economic power. Second, Nigeria has also established several export promotion and development institutions relative to most other countries in SSA over the past decades (Markham, 2004), an attribute which is likely to make the country's exporting activities more pronounced in the region. Third, Nigeria has recently also embarked upon a major financial sector reform³ which saw the number of its commercial banks reduced from 89 to 21 (UHY, 2015). Accordingly, the country witnessed an improved banking sector with increased lending

² Nigeria surpassed South Africa to become the largest economy in Africa in 2014 after rebasing its GDP.

³ This reform was implemented in 2005 (KPMG, 2015).

and less non-performing assets (KPMG, 2015). These positive developments in Nigeria's financial system suggest that exporting firms and firms that are intending to do so in the country are likely to have better access to finance to expand their businesses. This phenomenon may make exporting in Nigeria more pronounced relative to other SSA countries most of which have seen financial repression over the years. Fourth, it is also critical to recognise that Nigeria is the most populous country in SSA with an estimated population of about 170 million (Investment climate statement–Nigeria, 2013). As a result, the availability of low-cost labour coupled with the existence of the country's other natural resources are more likely to attract large network of enterprises into the country many of which may be engaged in exporting or firms whose business activities may positively drive exports. The third essay however focuses on a panel of 41 SSA countries.

1.3 Research objectives

The general objective of the study is to investigate the effect of access to external credit on international trade activities in SSA. Specifically, the study seeks to:

1. Examine the influence of access to external credit (bank credit and non-bank credit) on the likelihood of manufacturing firms to export in Nigeria;
2. Determine the impact of external credit (bank credit and 'suppliers and customer' credit) on exports size of manufacturing firms in Nigeria;
3. Assess the effect of financial sector development on export commodity diversification in SSA.

1.4 Research questions

Based on the objectives of the study, the following research questions have been formulated:

1. How does access to external credit (bank credit and non-bank credit) influence the likelihood of manufacturing firms to export in Nigeria?
2. What is the impact of external credit (bank credit and 'suppliers and customer' credit) on exports size of manufacturing firms in Nigeria?
3. What is the effect of financial sector development on export commodity diversification in SSA?

Consequently, the study consists of three empirical stand-alone essays, with each being organised around one research question.

1.5 Rationale for each essay

It is vital to note that there is a strong justification for each of the three essays that make up this study.

In the case of the role of external credit (bank credit and non-bank credit) in firms' exporting decision, it is expected that access to external credit will enable firms to overcome the huge sunk and fixed costs of foreign market entry, thereby encouraging more firms to enter the overseas market which is critical for increased productivity, job creation, foreign income and economic growth and development. However, it is also argued that access to external credit may not be essential for firms' decision to go abroad once all observed and unobserved characteristics of a firm are properly accounted for. In buttressing this point, some authors argue that even if indeed finance may be indispensable in promoting the firm's decision to go abroad, the availability of 'public measures' may render the role of external credit unimportant. Another explanation that is also often given for the irrelevance of access to external credit in firms' export decision is the possibility of absence of financial constraint among the group of firms to which exporting may be important. Owing to the above debate in the field and lack of similar studies in SSA, it is essential for more rigorous empirical work to be done to determine the real impact of external credit on firms' export decision from SSA perspective. The findings of such a study would be invaluable for efficient policy formulation as it would determine the level of priority that needs to be placed on financial sector development in the discourse of firms' internationalisation process in SSA. It is important to note that increased internationalisation of firms is vital for enhancing trade receipts which is crucial in promoting economic growth and development that has eluded most SSA countries over the past decades. The first essay therefore examines the influence of access to external credit on the likelihood of manufacturing firms to export in SSA.

On the role of financial access (bank credit and 'suppliers and customer' credit) in firms' exports size, it is critical to note that most exporters are often unable to meet their variable trade costs owing to the larger number of days it takes to collect their trade receipts. The financial stance of

exporters is also worsened owing to the huge costs involved in expanding into new export destinations. Amid these challenges, access to external credit becomes crucial in sustaining exporters' activities before export receipts are due. It is therefore expected that increased financial sector development is essential for promoting export levels which is critical for increased trade receipts and high economic growth and development. Alternatively, it is also argued that external credit may not be needed to cover exporters' variable trade costs and costs of expansion into new markets since the exporting firms might have accumulated enough profit or cash from their prior trading activities to offset these costs. This debate on how access to external credit may affect firms' exports size and the dearth of similar studies in SSA therefore necessitates more thorough empirical work to actually establish the real influence of external credit on exports size in SSA. The results of such a study is vital as it would prudently inform policy makers in SSA on the level of importance to attach to financial development in their quest to boost export levels in order to drive trade receipts and economic growth and development in the region. The second essay therefore investigates the effect of external credit on firms' exports size in SSA.

Export diversification has become a critical trade strategy that has enabled most developing economies to improve upon their economic growth and development situations. A classic example is the 'Asian Tigers' or 'Asian Dragons' (China, South Korea, Singapore, and Taiwan), which have seen massive economic growth and development since the mid-1950s. In particular, these countries have used technology and innovation which were made available through increased financial sector development to propel their trade. Given the high level of primary exports, export concentration, unstable trade income and low economic growth and development that has characterised most countries in SSA, it is expected that high financial sector development in these countries will help revolutionize their trade structure through the exporting of a variety of processed or manufactured products. Specifically, commodity export diversification involves innovation, coordination, huge capital outlays in research and development (R&D) into the viability of non-traditional exports and private infrastructural upgrading or acquisition of new machinery to add value or manufacture new products. Thus, given these huge fixed and operational costs, financial sector development has been cited as an important ingredient for a successful export diversification strategy. In spite of this hypothesis,

empirical research in this field of endeavour has been scanty. In fact, the empirical work on the positive role of finance in international trade has largely left unexplored the influence of finance on export diversification. Thus, we are yet to understand how financial sector development may impact on countries' commodity export diversification. Such knowledge is critical as it helps policy makers to determine the level of priority that should be placed on financial systems development in their pursuit of export diversification in developing countries. The essay focuses on SSA because relative to other developing regions, it is where financial access is most lacking and the one that still depends heavily on primary commodity exports. The third essay therefore determines the effect of financial sector development on commodity export diversification in selected SSA countries.

1.6 Chapter organization

The thesis is divided into six chapters, three of which are empirical essays on the thesis title. To this end, Chapter One presents the introduction to the study and highlights the key issues surrounding financial access and foreign trade. Chapter Two reviews and documents some stylised facts on exports and financial access in Africa. Chapter Three is the first empirical essay on external credit and firms' export decision. Chapter Four is the second empirical essay on external credit and firms' exports size and Chapter Five constitutes the third empirical essay on financial sector development and export diversification. The thesis concludes with Chapter Six, which derives conclusions from the essays and makes key recommendations.

CHAPTER TWO

OVERVIEW OF EXPORTS AND FINANCIAL ACCESS IN AFRICA

2.1 Introduction

This chapter presents an overview of exports activity and export finance in Africa. Specifically, the chapter reviews the state of firm-level exports and key trends in export performance in Africa. It also explores some major barriers confronting international trade flows in the region, examines the state of exporters' access to finance and some major sources of financing exports in Africa. The section concludes by tersely discussing the main regional economic blocs and some policies aimed at promoting both intra-regional and global trade activity in Africa.

2.2 The state of firm-level exports in Africa

The benefits of international trade to economic growth and development as espoused by researchers including Samuelson (1939), Dollar (1992) and Lucas (2009) among others has long been recognised by policy makers in Africa. With the help of the World Bank and the International Monetary Fund (IMF) through the Economic Recovery and Structural Adjustment Programme (ERSAP), this recognition has led many economies in Africa to move away from different forms of trade protectionism to a relatively more liberalised trade regime since the early 1980s. Together with other prudent economic policies, most African countries sought to use trade to significantly boost economic activity in order to reverse among other things their soaring unemployment levels, rising external debt, poor socio-economic infrastructure, high budget deficits and general economic downturns which have entangled them for decades.

Generally, Africa is endowed with a variety of natural resources which makes it convenient for most of its economies to be natural resource-based commodity exporters. Relative to other regions, Africa exports a limited range of products including oil, gold, diamond, bauxite, cocoa, coffee, timber, palm oil and fruit. Unfortunately, lack of capacity in terms of technology, skilled labour and finance among other resources has often compelled exporters to export these commodities in a raw state. This phenomenon has often repressed exporters' trade receipts since global trade in raw materials normally yields low revenue while the overdependence on a few export commodities causes trade receipts to plummet when the global market price of those items falls (Presbish, 1950; Singer, 1950). Consequently, trade economists including

Subramanian (2008) and Ndikumana (2015) have argued that African economies may not fully benefit from overseas trade unless they embark upon a considerable policy reset to address these challenges in their trade structure. In such a framework, substantial attention needs to be given to building exporters' capacity to enable them to move up the value chain and add a variety of other tradable products (non-traditional exports) to their export baskets. With this, Africa is more likely to renew its energy and significantly contribute its quota to global trade just as the East Asian and Pacific region has done. Currently, though Africa has seen some success in its foreign trade relative to the past, the success is low as the region still lags behind other developing regions like Asia (UNCTAD, 2016a).

To promote firm-level exports in Africa, different economies have adopted different policy frameworks and support institutions. For example, in Nigeria, the government established the Nigerian Export Promotion Council (NEPC) in 1976 and the Nigerian Export Import Bank (NEXIM) in 1991 basically to promote and finance the country's exports sector. Similar institutions have also been established in South Africa. Examples include the Export Credit Insurance Corporation of South Africa established in 2001, which is mandated to provide export credit and insurance to South African exporters and the current New Growth Path of the Republic of South Africa promulgated in 2011 among others. Furthermore, Morocco which is noted for its textile industry, for example, established the Hassan II Fund for Economic and Social Development in 2000 to promote its exports. Other support institutions and policy frameworks to encourage exports in Morocco include the National Agency for SME Promotion and the Emergence Plan of 2005 to attract foreign investment and develop more technological and competitive products. Tunisia, which has seen significant success in its foreign trade and was close to industrialization before the 'Arab spring' (AfDB, 2011) also instituted various policies to promote its exports, including but not limited to the Horizon Plan of 2008 intended to specifically encourage the production of high technology products through programmes such as The *Program de Mise à niveau (PMN)* and the Industrial Modernization Programme. To make the industrial sector the engine of growth thereby paving the way to foreign trade in industrial products, Egypt also rolled out the Industrial Development Strategy in 2005 among others.

Given the myriad of trade-support policy frameworks that exist in Africa, it is intriguing to note why the region still lags behind other developing regions in global trade. Currently, Africa's main export destinations include the United States of America, the United Kingdom, Germany, France, Italy, Spain, China, India and the Middle East among other countries.

2.3 Key trends in export performance in Africa

Africa's total trade value, annual average growth rate and trade balances and its percentage of imports are presented in Tables 2.1, 2.2 and 2.3 respectively. The values are briefly discussed relative to world total and other developing regions over the period 2005-2016.

Table 2.1 Total exports trade (millions of USD) for group of developing⁴ economies

	World	Developing Africa		Developing Asia		Developing Oceania		Developing America	
	Total trade	Total trade	% of world	Total trade	% of world	Total trade	% of world	Total trade	% of world
2005	10 502 488	311 127	2.962	2 903 639	27.647	6 710	0.064	586 481	5.584
2006	12 127 771	370 889	3.058	3 474 424	28.648	7 757	0.064	699 818	5.77
2007	14 020 775	436 705	3.115	4 069 585	29.025	8 892	0.063	786 929	5.613
2008	16 148 864	562 377	3.482	4 821 609	29.857	9 214	0.057	909 458	5.632
2009	12 555 778	393 529	3.134	3 900 597	31.066	7 071	0.056	704 964	5.615
2010	15 302 138	521 435	3.408	5 016 322	32.782	9 078	0.059	891 598	5.827
2011	18 338 967	610 715	3.33	6 166 833	33.627	10 931	0.06	1 110 991	6.058
2012	18 497 485	639 715	3.458	6 455 904	34.902	10 406	0.056	1 122 968	6.071
2013	18 953 465	600 647	3.169	6 709 578	35.4	9 644	0.051	1 117 906	5.898
2014	19 006 231	555 305	2.922	6 832 571	35.949	13 078	0.069	1 083 469	5.701
2015	16 490 373	390 899	2.37	6 028 104	36.555	11 829	0.072	922 032	5.591
2016	15 956 403	345 887	2.168	5 723 001	35.866	10 351	0.065	885 259	5.548

Source: UNCTAD secretariat calculations (2017)

⁴Developing economies in Africa include countries in: “Eastern Africa, Middle Africa, Northern Africa, Southern Africa, and Western Africa”. Those in America include: “The Caribbean, Central America, and South America”. For Asia, we have: “East Asia, South Asia, South-Eastern Asia, and Western Asia”. Also, developing economies in Oceania include the following countries or territories: “Cook Islands, Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Northern Mariana Islands, Pacific Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Wallis Futuna Islands”. This classification is based on UNCTAD’s style of grouping developing economies.

Table 2.1 suggests that Africa's total trade value as a percentage of world total hovers around 2.2% to 3.5% over the period 2005-2016 relative to 27.6% to 37% for developing Asia over the same period. Besides developing Oceania, Table 2.1 shows that Africa is the next least contributor to world trade. This implies that on average, economies in Africa do not derive much benefit from global trade as compared to other developing countries in Asia and America. This observation corroborates earlier findings by several trade researchers including ECA (2015) and UNCTAD (2016a).

The abysmal performance of Africa in global trade (below world average) over a long period of time compared to developing Asia as shown in Table 2.1, reveals some major challenges in the region's foreign trade framework that needs to be addressed promptly. Specifically, Africa's low share of world trade highlights and confirms issues of weak export production capacity, little or no value addition to export products by most African economies and overdependence on a few export commodities which earlier authors including Subramanian (2008) and Ndikumana (2015) have noted. However, the solution for reversing this situation is not farfetched if African economies are willing to draw lessons on foreign trade, particularly from the 'Asian Tigers'.

Table 2.2 Annual average growth rates of exports and imports for group of developing economies

	World		Developing Africa		Developing Asia		Developing Oceania		Developing America	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
2005	13.86	13.7	29.85	20.7	20.97	17.5	9.94	8.35	21.87	19.77
2006	15.48	14.64	19.21	18.15	19.66	16.26	15.6	13.07	19.32	18.74
2007	15.61	15.17	17.75	23.73	17.13	17.28	14.63	11.89	12.45	18.89
2008	15.18	15.73	28.78	28.38	18.48	21.15	3.63	14.71	15.57	22.25
2009	-22.25	-22.94	-30.02	-14.59	-19.1	-18.42	-23.26	-18.96	-22.49	-22.25
2010	21.87	21.52	32.5	16.48	28.6	31.18	28.39	18.17	26.47	29.04
2011	19.85	19.42	17.12	18.3	22.94	22.27	20.41	14.32	24.61	22.47
2012	0.86	1.14	4.75	8.64	4.69	4.56	-4.8	2.15	1.08	2.75
2013	2.47	1.66	-6.11	3.94	3.93	3.97	-7.32	6.5	-0.45	3.75
2014	0.28	0.38	-7.55	0.36	1.83	0.1	35.61	-5.67	-3.08	-0.88
2015	-13.24	-12.3	-29.61	-13.83	-11.77	-12.33	-9.55	-23.41	-14.9	-11.12
2016	-3.24	-3.16	-11.52	-9.59	-5.06	-4.5	-12.5	-13.78	-3.99	-9.53

Source: UNCTAD secretariat calculations (2017)

The annual average growth rate of trade presented in Table 2.2 shows that Africa, like other developing regions, reported a positive annual growth rate in trade from 2005 until 2008. In 2009 however, the ‘Great trade collapse’ affected global trade, causing the annual average growth rate of exports and imports of all developing economies to plummet. Consequently, Africa’s annual average growth rate of exports fell to -30.2% while imports also decline to -14.59%. Table 2.2 further shows that foreign trade in Africa bounced back in 2010 with the annual growth rate of exports reaching a record high of 32.5% while imports stood at 16.48%.

The region continues to report a positive growth rate though with a decline until 2012. However, from 2013 to 2016, Table 2.2 indicates that the annual average growth rate of overseas trade in Africa, particularly the export trade, took a nosedive from -6.11% in 2013 to -11.52% in 2016. Although the declined in annual average growth rate of trade for this period was not limited to Africa alone, it is clear from the table that the fall in Africa is much steeper if compared to developing regions like Asia. For example, while Africa’s fall in annual average growth rate was 6.11%, 7.55%, 29.61% and 11.52% for the period 2013-2016 respectively, it was 3.93%, 1.83%, 11.77% and 5.06% for developing Asia in the same year.

Table 2.3 Total trade balance (millions of USD) and its percentage of imports for group of developing economies

	World		Developing Africa		Developing Asia		Developing Oceania		Developing America	
	Trade balance	% of imports	Trade balance	% of imports	Trade balance	% of imports	Trade balance	% of imports	Trade balance	% of imports
2005	-275153	-2.55	54566	21.27	283 859	10.84	-3 397	-33.61	48652	9.05
2006	-227487	-1.84	67771	22.36	428 755	14.08	-3671	-32.12	61196	9.58
2007	-208832	-1.47	61644	16.44	497 516	13.93	-3894	-30.46	27678	3.65
2008	-318779	-1.94	80880	16.8	493 911	11.41	-5453	-37.18	-18714	-2.02
2009	-133808	-1.05	-17734	-4.31	370 216	10.49	-4816	-40.52	10699	1.54
2010	-118375	-0.77	42396	8.85	385 184	8.32	-4969	-35.37	-4300	-0.48
2011	-76666	-0.42	44008	7.77	504 467	8.91	-5127	-31.93	13781	1.26
2012	-127547	-0.68	24045	3.91	535 066	9.04	-5998	-36.56	-4385	-0.39
2013	19773	0.1	-39254	-6.13	553 527	8.99	-7826	-44.8	-49739	-4.26
2014	1305	0.01	-86874	-13.53	670 469	10.88	-3402	-20.64	-73896	-6.38
2015	-177467	-1.06	-162468	-29.36	625 551	11.58	-793	-6.28	-106629	-10.37
2016	-185057	-1.15	-154879	-30.93	563 813	10.93	-532	-4.89	-45354	-4.87

Source: UNCTAD Secretariat calculations (2017)

Trade balance or balance of trade is the difference between a country's exports and imports, and constitutes the single largest item in a country's balance of payments (BOP). Table 2.3 reveals that on average Africa's trade balance continues to deteriorate over the years when compared specifically to developing Asia. For example, Africa's surplus balance which was USD54,566,000,000 in 2005, deteriorated to a deficit of USD154,879,000,000 by 2016 while developing Asia moved from a surplus of USD283,859,000,000 to a surplus of USD563,813,000,000 over the same period. It is argued that although a trade deficit may not necessarily be bad since it signals the ability of the country to consume more thereby compelling it to increase its domestic production capacity to boost economic growth, it raises a 'red flag' on the extent to which such a phenomenon is creating foreign employment to the detriment of local employment. It also creates currency depreciation issues as more foreign currency is always sought to buy foreign goods.

2.4 Major barriers confronting international trade flows in Africa⁵

Like any economic activity, global trade flows in Africa are bedevilled by many challenges. Basically, these challenges to trade in Africa can be identified and discussed under two broad categories, namely, the supply-side constraints and trade policy constraints. The supply-side constraints to foreign trade flows could basically be described as those trade constraints that emanate from weaknesses in a country's infrastructure and factor endowments which inhibit firms from competitively engaging in efficient production and exportation of tradable commodities. For example, the existence of similar production structures across Africa, bureaucracy, inadequate infrastructure, lack of skilled labour and poor access to finance. On the other hand, trade policy constraints are those trade impediments emanating from a country's existing trade policies. Examples include the misalignment between a nation's trade and industrial policies, tariffs and non-tariff barriers.

On the supply-side constraints, it is evident that the prevalence of similar export products and low level of industrialisation that characterise most African economies have resulted in African states trading less among themselves since there is little demand for each others' products (ECA,

⁵This section of the study draws on ECA (2015).

2015). Trade economists have often argued that the pervasiveness of similar export products and low level of industrialisation is one of the most critical issues inhibiting several efforts to deepen intra-regional trade in Africa.

Overseas trade flows in Africa are also stifled by complicated and bureaucratic tendencies that have engulfed the emergence of new firms in most African countries. Depending on the country, it could take a few weeks to sometimes several months or a year to fully formalise/register a business in Africa. Such administrative delays often result in investors taking their businesses elsewhere where the environment is more administratively ‘friendly’. According to ECA (2015), administrative delays and other bureaucratic practices could explain why Africa has fewer medium-sized enterprises in its classic productive make-up. However, it is vital to note that several countries in the region including Mali, Rwanda and Burkina Faso among others are beginning to take pragmatic steps to cut unnecessary administrative delays in registering new businesses with the aim of increasing production and foreign market participation.

Another supply-side impediment to global trade flows is the existence of poor infrastructural development which has symbolized the structure of most African economies and dampened increased production and exportation of goods. It is critical to note that for Africa to competitively engage in foreign trade just as the ‘Asian Tigers’ have done, policy makers in the various economies of the region need to be jolted to recognize that improvement in road networks, transportation system, electricity supply, telecommunication and uninterrupted water supply among others are key. According to Ramachandran, Gelb and Shah (2009) and Foster and Briceño-Garmendia (2010), infrastructural inadequacies could lower firms’ productivity in Africa by 40% per annum and repress per capita economic growth of the region by 2 percentage points.

Global trade flows in Africa are also haunted by inadequate supply of skilled labour which is critical in value addition to a nation’s export products. Though this may not be a challenge in all the countries, it is a general problem in Africa on the average. According to ECA and AUC (2013), it is paucity of skilled labour that obliges West African countries to export cocoa beans

despite being the world's leading producers of the commodity. The authors also attributed a similar reason to why coffee beans are exported from Ethiopia and copper from Zambia.

The last but not the least supply-side constraint to international trade flows is insufficient access to finance. Prior studies, including Beck and Demirgüç-Kunt (2006), Nkurunziza (2010) and Adjasi (2015) find that inadequate access to finance suppresses firm growth and stagnates general economic activity suggesting that the phenomenon could cause substantial distortions in trade performance if not addressed. In international trade, access to finance is vital to overcome the huge sunk and fixed costs of foreign market entry and also mitigates the variable costs of existing exporters (Chaney, 2005; Manova, 2013).

On the trade policy barriers to foreign trade flows, ECA (2015) observes that lack of agreement between an economy's trade policy and industrial policy could distort overseas trade flows. For example, protectionist policies to safeguard 'infant industries' and promote industrialisation if not prudently designed could throttle cross-border trade since such a practice deprives local firms from using foreign inputs, lowers productivity, results in the production of substandard products and finally denies local consumers from welfare gains from enjoying the availability and variety of foreign goods.

Another major policy-related barrier to cross-border trade flows in Africa is the existence of high tariffs among the various regional economic groupings (REGs) relative to that charge in the rest of the world. For example, tariffs charged between Economic Community of West African States (ECOWAS) and Southern African Development Community (SADC) member countries are higher than tariffs charged between ECOWAS/SADC and the United States of America or the European Union (EU). According to Ofa et al. (2012), this phenomenon could be attributed to the prevalence of various preferential trade schemes like the African Growth and Opportunity Act (AGOA) and the Everything But Arms (EBA) initiatives of the United States of America and EU respectively which are meant to promote exports of least developed countries. In spite of the substantial positive consequences of preferential trade schemes, policy makers in Africa need to recognise that such schemes are 'double-edged swords' which may also jeopardise intraregional trade.

Finally, non-tariff considerations can also act as a significant policy impediment to global trade in Africa. Basically, non-tariff barriers are those regulatory measures other than trade duties that distort international trade flows. Examples include complicated custom procedures followed at the ports which emanate from rules of origin and sanitary and phytosanitary (SPS) rules (Chikura, 2013). Others include pre-shipment inspection formalities, producing to meet international standards like ISO 9000, ISO 22000 and ISO 14000 among others.

2.5 Exporters' access to finance in Africa

Research into the role of finance in economic growth and development was ignited following Schumpeter's exposition that finance plays a positive role in the economic development of nations through its effect on increased economic activity. Specifically, several researchers including King and Levine (1993), Rajan and Zingales (1998), Rousseau and Sylla (2003) and Bordo and Rousseau (2012) among others show that finance promotes growth and development as it enables individuals to invest and increase their incomes, assisting firms to roll out their positive net present value projects and strengthening governments to implement their projects. One important implication of this is that finance is essential for promoting a nation's foreign trade insofar as the latter is an economic activity. Particularly, authors including Kletzer and Bardhan (1987), Beck (2002), Chaney (2005) and Manova (2013) show that high financial development is critical to increase an economy's global trade flows which is critical for economic growth and development. In fact, high financial development allows potential exporters to overcome the huge sunk costs of foreign market entry while helping financially constrained exporters to offset their variable trade costs.

In Africa, financial development and access to finance has been and is generally poor, particularly prior to the 1990s (Menyah, Nazlioglu, & Wolde-Rufael, 2014; Adjasi, 2015). This situation led to several financial reforms⁶ in many African countries to address the problem, supported by the World Bank and International Monetary Fund (IMF). Though Africa has now seen a substantial development in its financial sector compared to the past, the sector is still underdeveloped or repressed (Odedokun, 1996) in some of the region's economies. The evidence

⁶These reforms were popularly referred to as the Financial Structural Adjustment Programme (FinSAP).

today is that Africa's financial system generally lags behind its developing peers like East Asia and Pacific.

Table 2.4 presents trends in access to finance in some developing regions of the world for the periods 2005, 2010 and 2015. Financial access here is measured by domestic credit to the private sector by financial institutions, domestic credit to the private sector by banks and nearness to financial institutions.

Table 2.4 Regional trends in financial access for the periods 2005, 2010 and 2015

		World	Sub-Saharan Africa	East Asia & Pacific	South Asia	Latin America & Caribbean
Domestic credit to private sector by financial institutions (% of GDP)	2005	157.9	77.8	209.0	57.3	49.3
	2010	166.6	67.8	197.6	69.1	65.0
	2015	173.8	57.7	212.2	71.4	74.1
Domestic credit to private sector by banks (% of GDP)	2005	77.8	33.3	100.3	38.3	24.2
	2010	82.9	32.0	110.9	47.0	36.9
	2015	86.7	28.9	132.2	47.3	45.7
Commercial bank branches (per 100,000 adults)	2005	9.9	1.5	12.1	7.3	12.6
	2010	10.8	3.4	10.2	8.1	13.6
	2015	12.6	4.7	10.0	9.5	15.3

Source: World Development Indicators (2017)

Table 2.4 shows that for the periods 2005, 2010 and 2015, domestic credit to the private sector by financial institutions in SSA which stands at 77.8%, 67.8%, and 57.7% respectively, significantly trails below the world's average and substantially lags behind other developing regions like East Asia and Pacific whose value indicates 209%, 197.6%, and 212.2% respectively. This suggests that compared to East Asia and Pacific, SSA extends lesser credit to its individuals, households and firms for the periods under consideration, a phenomenon which may cause severe financial constraint in firms that depend on external credit to flourish like exporters.

Table 2.4 also indicates that for the periods 2005, 2010 and 2015, domestic credit to the private sector by banks in SSA stood at 33.3%, 32%, and 28.9% respectively. These values notably fall below the world's average and also largely creep behind East Asia and Pacific region whose

value stands at 100.3%, 110.9% and 132.2% respectively. This indicates that commercial banks in SSA give lesser loans to their firms and may be keeping the rest of their mobilised funds in available liquid assets, probably due to the high risk of loan applicants or general adverse macro-economic conditions prevalent in the various economies. From Table 2.4, the difference between domestic credit to the private sector by financial institutions and domestic credit to the private sector by banks in SSA for the periods under deliberation suggests that non-bank financial institutions constitute a major source of credit to individuals, households and firms in SSA.

In the case of nearness to a financial institution, Table 2.4 shows that SSA's performance is abysmal when compared with all the other regions for the periods 2005, 2010 and 2015. For example, in 2005, commercial bank branches per 100,000 adults were 12.1 in East Asia and Pacific, 7.3 in South Asia and 12.6 in Latin America and the Caribbean, but only 1.5 in SSA. Similarly, in 2015, commercial bank branches per 100,000 adults were 10.0 in East Asia and Pacific, 9.5 in South Asia, 15.3 in Latin America and the Caribbean and 4.7 in SSA, highlighting the extent to which financial access is severely limited in Africa.

In Africa, the issue of financial access and the role of financial markets in economic growth and development have been investigated by several authors including Adjasi and Biekpe (2006), Yartey and Adjasi (2007), Odhiambo (2008) and Menyah et al. (2014) among others. Whereas the overwhelming majority of these authors find that financial development is vital to increase firms' access to finance so as to drive growth, a few argue otherwise. For example, Odhiambo (2008) finds that economic growth unidirectionally promotes financial development and consequently warns that studies that propose the development of the financial sector in order to drive growth should therefore be taken with caution.

The challenge of the paucity of exporters' access to finance in Africa is deeply rooted in the fact that most exporting firms are Small and Medium-sized Enterprises⁷ (SMEs) which are often known for difficulty in accessing finance (Beck, Demirgüç-Kunt, & Maksimovi, 2005) due to their perceived or real risk or both (Marwa, 2014) and information asymmetry (Akerlof, 1970; Stiglitz & Weiss, 1981). It is argued that small firms are often considered risky by formal

⁷In Africa, about 90% of the total firms are SMEs (Adjasi, 2015).

financial institutions owing to increased transaction costs when dealing with them and their inability to provide the necessary collaterals that may be required by lenders. Though the perception of ‘riskiness’ that is often associated with small businesses may be true, it appears the attribute is often exaggerated and overvalued by lenders, thus resulting in the high cost of credit, or outright rejection of small firms’ credit applications. In this regard, the case of the exporter is even more exacerbated since exporting activity is associated with additional risks relative to domestic trade. In spite of this, it is vital to note that most small businesses are often not as risky as many lenders may assume. In fact, some of them are very aggressive with prudent risk management practices to enable them to increase their returns considerably.

The issue of information asymmetry between lenders⁸ and borrowers has been noted in the influential work of Akerlof (1970) and Rothschild and Stiglitz (1976). The authors suggest that the phenomenon is ingrained in lenders’ belief that borrowers have *ex-ante* information concerning the viability of their businesses which is known to them only. This information is often linked to ‘cracks’ in the borrowers’ business that may negatively affect their firms’ returns. Based on this, lenders often extend credit to firms at exorbitant rates to cushion these risks or may require high collateral or turn down the loan application. It is observed that in the presence of information asymmetry, SMEs are the most negatively affected since their circumstances with regard to size and collateral availability may not permit them to qualify for most loans relative to their bigger counterparts.

2.5.1 Some major sources of export financing in Africa

Given the enormous financial requirements to start and remain in the export industry, it is generally accepted that exporters’ access to external finance is vital. In soliciting export finance in Africa, exporters basically resort to two major sources of external finance namely, bank credit and non-bank credit. Bank credit is normally solicited from commercial and investment banks or ‘export/import’ banks. On the other hand, non-bank sources of finance include but are not limited to friends and family, ‘suppliers and customer’ credit, government and donor funded credit, microfinance credit, credit unions, co-operatives, factoring and forfeiting etc.

⁸Lenders here refer to formal financial institutions, particularly the banks.

Bank credit is considered as the most formal source of capital for exporters. Basically, it is the source of finance most exporters would desire to solicit credit from. However, credit market imperfections make it impossible for the majority of exporters and potential exporters to access credit from such a source. As indicated earlier, banks often tend to focus their credit extension mostly on large-scale exporters to the detriment of their small-scale counterparts based on the assumption that the latter may default. Given the significant role that small-scale exporters play in economic growth and development, banks need to rethink their position on credit towards the small-scale exporter. To this end, banks need to appreciate the context and other peculiar circumstances of small-scale exporters and develop financial packages that would fit them.

With non-bank sources of credit, rich friends and family often provide credit on flexible terms to promote the export businesses of their friends and relatives who cannot afford to do so. This source of credit is very prominent in Africa given the stronger bond that exists among friends and family members in most African countries relative to most other regions of the world. Also, suppliers do offer credit sales which allow most exporters to take delivery of most of their inputs now and payback when export revenues are due, while most institutional customers may make advance payment to exporters today, but take delivery of their items in the future. Though these two types of arrangement to finance the exporter are common in Africa, it is important to note that they are based on mutual trust and agreement between the parties suggesting that the absence of this trust may render the approaches impracticable.

In many African countries, governments often establish export credit institutions mainly under their Ministry of Trade or Finance to promote exports. Sometimes these institutions are setup with donor funds through some government agencies. Normally, these institutions are part of governments' responses to declining balance of trade, dwindling export receipts, unemployment and general economic stagnation.

Another major non-bank source of finance for exporters in Africa is microfinance institutions (MFIs). In fact, beyond financing exports, microfinance institutions are basically development finance intervention institutions meant to address the 'missing gap' in financing economic activity in Africa. This implies that they are basically setup to finance SMEs which are often

neglected by the formal financial institutions. Most MFIs are setup as savings and credit cooperatives and may be owned by local or foreign entrepreneurs or the government. Though MFIs have helped finance most exporters in Africa, their activities need to be regulated, especially those that accept deposits. Currently, it is also observed that though their terms of credit are more flexible relative to bank finance, their annual rate of lending is on the high side, while bigger firms also continue to chase after microfinance credit.

Furthermore, factoring, which is basically the discounting of a sales invoice by an exporter to a factor for immediate cash receipt is also used in the exports industry by most African countries including South Africa, Egypt and Morocco as a non-bank source of credit (Adjasi, 2015). Factoring normally involves low value receivables which may take 90 to 180 days to mature. On the other hand, forfaiting, which is similar to factoring in all aspects except for the value of the sales invoice and time, is also used in financing exports. In forfaiting, the sales invoice is always higher and involves high-priced capital goods, while the credit period could take several months to five or six years. It is essential to note that both factoring and forfaiting can be undertaken with or without recourse. Factoring or forfaiting with recourse is a situation where the entity or firm which receives the sales invoices and provides the exporter with the immediate cash has the right to return the invoices to the exporter and collect their money with interest if they are unable to redeem those invoices for their money from the importer. However, factoring or forfaiting without recourse is where the firm providing the money bears the full risk of the invoices and cannot return them to the exporter even if it is unable to redeem the invoices from the importer.

2.6 The main regional economic blocs in Africa

Trade researchers including Adjasi (2007), Hartzenberg (2011), Menyah et al. (2014) and UNCTAD (2017) among others have observed that Africa's share of world trade has been low for decades, making the continent not reap much from its international trade activities. Many have suggested that one of the surest ways to reverse this abysmal trade performance is to intensify intraregional trade activity in Africa through Regional Economic Communities (RECs). Thus, since breaking from colonial rule in the 1950s, many African countries have made tremendous efforts to increase their production capacity in order to boost trade through various

country-specific ‘domestic industrialisation’ programmes. Currently, there is hardly any African country which does not belong to at least one regional economic grouping.

Africa has a multiplicity of RECs. In the majority of the cases, these economic groupings are based on neighbourhood architecture with substantial overlaps. This implies that countries that are closer to each other in the region are more likely to belong to the same economic bloc relative to their counterparts that are farther⁹ away. In buttressing the overlap of Africa’s RECs, Adjasi (2007) argues that 20 African states belong to at least three different RECs while only six belong exclusively to one.

The key RECs in Africa include the Economic Community of West African States (ECOWAS), made up of 15 countries and established in 1975; the West African Economic and Monetary Union (UEMOA), made up of eight countries, established in 1994 and consisting mainly of French-speaking countries in West Africa; the Arab Maghreb Union (AMU), which includes all the Northern African countries except Egypt and established in 1989; the Southern African Development Community (SADC), which consists of 15 member states and was created in 1992; and the Common Market for Eastern and Southern Africa (COMESA), which represents the largest REC in Africa, with 19 member countries and established in 1994. Others include the Economic Community of Central African States (ECCAS), with a membership of 10 countries and set up in 1983; the Central African Economic and Monetary Community (CEMAC), which has a membership of six states and was established in 1994; the East African Community (EAC), which consists of six countries, was set up in 1967 and re-established in 2000 after it was disbanded in 1977; the Community of Sahel-Saharan States (CEN-SAD), with a current membership of 27 countries and established in 1998; the Intergovernmental Authority on Development (IGAD), with eight member states and set-up in 1996; and finally, the Southern African Customs Union (SACU), which is regarded as the oldest operating customs union in the world (Hartzenberg, 2011), established in 1910. It is important to note that of the above RECs,

⁹Egypt, however, is a North African country but belongs to COMESA, which is a typical Eastern and Southern African economic grouping.

the African Union has recognised eight¹⁰ as the ‘building blocks’ of an African Economic Community.

RECs are critical for Africa’s development because they promote trade, cooperation and investment and breed stronger bargaining power. A key feature about Africa’s regional integration agenda is the inherent aim for the communities to progress from a free trade area, to a customs union, to a common market, to fiscal and monetary integration and finally to a political union (Hartzenberg, 2011). However, it is also important to note that some of the Unions do not want to follow this path. For example, COMESA explicitly aims to become a common market, while SACU wants to become just a customs union.

In spite of the giant steps Africa has taken to create intra trading communities, it is evident that the Unions have not performed to expectation as member states still substantially trade outside their enclaves. For example, Hartzenberg (2011) observes that about 80% of Africa’s exports still go overseas, while only 10-12 percent is traded within owing to poor implementation of regional integration agreements (ECA, 2010). It is believed that the situation could be revamped if African countries do more to harmonise their customs practices, increase competition, encourage product standardization and enact laws to protect intellectual property among others (Adjasi, 2007). Furthermore, Africa may also improve upon its intraregional trade activity if within-trade protocols are prudently designed, implemented and managed.

In July 2001, Africa adopted an integrated socio-economic development framework called, The New Partnership for Africa’s Development (NEPAD), with a significant trade development component¹¹. It is fundamentally an economic development plan of the African Union which is developed by African leaders themselves. Thus essentially, NEPAD is an African initiative which merges the ‘Millennium Partnership for the African Recovery Programme’ (MAP), and

¹⁰The following RECs have been acknowledged by the African Union as the ‘building blocks’ of African Economic Community: Economic Community of West African States (ECOWAS), Arab Maghreb Union (AMU), Southern African Development Community (SADC), Common Market for Eastern and Southern Africa (COMESA), Economic Community of Central African States (ECCAS), East African Community (EAC), Community of Sahel-Saharan States (CEN-SAD) and Intergovernmental Authority on Development (IGAD).

¹¹One key trade development component emphasized in NEPAD is the urgent need to increase export diversification in Africa in order to reduce the vulnerability of the continent’s trade receipts or terms of trade shocks (Funke & Nsouli, 2003).

the ‘OMEGA Plan’ (Funke & Nsouli, 2003). Some of the key issues NEPAD seeks to address include but are not limited to, poverty eradication, promotion of democracy, conflict resolution, women empowerment, private sector development, promoting regional and global economic integration and championing sustainable economic growth and development.

Given the goals of NEPAD, many researchers believe that Africa’s development of prudent policies to propel regional and global trade will substantially resolve the majority of the issues NEPAD purports to address. This thinking has been informed by several empirical papers. For example, Dollar (1992) finds that open economies propel a more efficient deployment of economic resources which increases economic growth, while Berg and Krueger (2002) review the extant literature between openness, income levels and adjustment in per capita GDP and note that higher trade volumes lead to increased growth rates of nations. Similarly, Dollar and Kraay (2001) relate that increased trade enhances the welfare gains of the poor while Mengistae and Pattillo (2002) show that increasing exporting activity could lead to more productivity which emanates from learning by exporting. Thus, it is clear from the above that if the principal issues in the NEPAD Accord are prudently implemented, Africa may see a substantial increase in both its regional and global trade which will lead to increased productivity, job availability, poverty reduction, conflict minimisation and economic growth and development.

2.7 Major policies to promote global trade in Africa

Africa has since the 1970s signed up to a number of global trade agreements to enhance the continent’s participation in global trade which is critical to boost employment, improve foreign revenue and promote growth and development. These agreements are basically North-South trade initiatives which generally grant duty-free and quota-free privileges to most African export commodities to enter the United States of America and the European Union markets, thus reducing trade costs and encouraging the beneficiary countries to export more. The principal trade protocols in this regard include the Lomé Conventions, the Cotonou Partnership Agreement (CPA), the European Union’s Everything But Arms (EBA) initiative and the United States’ African Growth and Opportunity Act (AGOA).

The Lomé Conventions¹² were basically trade and aid stimuli originated by the then European Economic Community (EEC) in 1975 to help the economies of African, Caribbean and the Pacific countries (ACP). In all, 52 countries were signatories to the compact including 19 other countries which were considered to be the poorest in the world as per the United Nations definition at the time (ECIS, 1977). It is however observed that the arrangement was basically meant for the former colonies of France, Britain, Belgium and the Netherlands. Specifically, the Lomé Conventions granted non-reciprocity duty-free access to virtually all export commodities originating from those ACP countries to the EEC market. This implies that though the beneficiary countries have virtually free access to the EEC market, the latter was not entitled to the same privileges when they exported to those ACP countries. Owing to some challenges in the Agreement, the Lomé Convention I was renegotiated and a new accord called the Lomé Convention II was reached in 1981. This new Agreement increased aid and investment to the beneficiary countries and prevailed until 1985 when it was reviewed and replaced by a new Convention called the Lomé Convention III between March 1985-1990. Global developments and the realities of the time necessitated the EEC again to revise the Lomé Convention III to Lomé Convention IV in December, 1989. This new Agreement was to regulate trade between the EEC and the ACP countries from 1990-1999. In 1992, the European Union (EU) was formed, thus replacing the EEC as the promoter of trade between the EU and the ACP countries.

Another major policy to promote global trade in Africa is the Cotonou Partnership Agreement (CPA) which came to replace the Lomé Conventions. The CPA, with its Economic Partnership Agreement (EPA) was signed in June 2000 by 77 ACP countries with representatives of the European Union (Udombana, 2004). The Agreement fundamentally gives duty-free access to ACP exports to enter the EU market with a view to reducing Africa's trade cost and encouraging member countries to export more. Unlike the Lomé Conventions which were principally a 'commercial' arrangement, the CPA is a partnership and cooperation accord which combines foreign trade with development aid like technological assistance (Adjasi, 2007). The CPA also seeks to promote deeper intraregional trade in Africa and also helps tackle trade barriers and ACP supply-side constraints which have repressed Africa's trade for decades.

¹²The Lomé Conventions were a series of trade policies that encompass the Lomé Convention I, the Lomé Convention II, the Lomé Convention III, and the Lomé Convention IV, with each succeeding one being supreme and giving a better 'deal' to the participating ACP countries relative to the previous one.

In spite of the huge benefits Africa stands to gain from the CPA, some trade economists including Adjasi (2007) observe that the ‘trade reciprocity’ component of the Agreement, which entitles EU countries to also have duty-free access to ACP markets with their exports in the future may jeopardise Africa’s economic growth and development since import duties constitute a significant part of most African states’ revenue. To avert such a situation, it is important for Africa to rise up by taking strong and prudent positions during future global trade negotiations. Particularly, the continent must learn to say ‘no’ to clauses that will endanger the strength of its economies at such meetings. To achieve this, Africa needs to train and equip its personnel with substantial knowledge in international trade negotiations, particularly on the effects of foreign trade policies on African economies.

To further deepen international trade activity in developing countries, the EU initiated the Everything But Arms (EBA) preferential trade initiative in March 2001 as part of the EU’s Generalised System of Preferences (GSP). The initiative which covers 49 developing countries classified by the United Nations as ‘least developed’ has about a two-thirds membership of African nations and seeks to tackle the unique needs of qualifying countries (EC, 2004). Specifically, EBA allows duty-free and quota-free access of most exports of beneficiary countries to EU markets with the exception of arms and ammunition. Per the accord, commodities like sugar, rice and bananas were initially exempted and given quotas, but were to be fully accepted into the initiative by 2009.

In order to encourage Africa to increase its participation and contribution to world trade, the United States of America designed and implemented the ‘African Growth and Opportunity Act’ (AGOA) in 2000. AGOA is fundamentally a non-reciprocal international trade preference arrangement that allows duty-free access of exports from 49¹³ SSA countries to the United States market (Williams, 2015). Imports from these countries, which are largely dominated by energy products and apparel constitute about 1% of total U.S. imports. Apart from commodity trade, AGOA also seeks to provide technical aid and capacity building to beneficiary countries to help promote their export sector. For example, AGOA aims to help member countries formulate

¹³Although 49 SSA countries are covered under the AGOA arrangement, only 39 are currently eligible to participate (Williams, 2015).

policies that will liberalise their trade sector, assisting them to harmonise their existing domestic laws and regulations to meet World Trade Organisation (WTO) commitments, supporting in financial and fiscal planning and helping to promote the development of agribusiness linkages among others.

Despite the enormous opportunities that AGOA presents, it appears most African countries have not taken, or are not taking full advantage of the programme, probably owing to the low productivity and limited range of export commodities that have characterised the economies of most African states. However, the same cannot be said of some member countries like South Africa, Kenya, Lesotho and Mauritius which export significant quantities of vehicles¹⁴ and apparel¹⁵ to the United States under the AGOA programme (Williams, 2015).

2.8 Conclusion

Export activity plays a critical role in accelerating the economic growth and development of nations through its effect on job creation, poverty eradication and increased trade receipts. This review has highlighted some stylised facts on exports and financial access in Africa. It shows that economies in Africa are predominantly primary commodity exporters. Africa's major exports include cocoa, coffee, timber, gold, diamonds and energy products. In spite of the continent's improved trade performance relative to the past decades, its contribution to world trade is still unimpressive. Furthermore, Africa's trade performance also substantially lags behind other developing regions like East Asia and Pacific.

Key challenges confronting overseas trade flows in Africa include the existence of similar production structures which impair intraregional trade activity, bureaucracy, inadequate infrastructure, lack of skilled labour, poor access to finance, misalignment between a nation's trade and industrial policies, tariffs and non-tariff barriers. It is however essential to note that poor financial access appears to be one of the most challenging factors facing exporters in Africa. In fact, access to finance in Africa is distinctly low compared to its developing counterparts like East Asia and Pacific region and trails significantly below the world's average.

¹⁴South Africa mainly exports vehicles to the United States under AGOA.

¹⁵Kenya, Lesotho and Mauritius are the main exporters of apparel in "good quantities" to the United States under AGOA.

Addressing the major challenges to trade in Africa is vital to unlocking the continent's international trade potential. For example, improving technology in the various African economies to boost diversity of exports, reducing bureaucracy, personnel training, harmonising a nation's trade and its industrial policies and increasing access to finance are some of the ways to go. Additionally, African countries must do more to reduce tariffs on exports and imports to particularly promote intra-regional trade. African exporters also need to be educated to appreciate the importance of quality exports production to enable them to meet the various SPS rules and other global quality standards. Apart from the continent's various RECs and NEPAD, most African countries have also currently signed up to a number of international trade treaties including AGOA, CPA and the EBA initiative in order to promote trade.

CHAPTER THREE

EXTERNAL CREDIT AND EXPORT DECISION: EVIDENCE FROM NIGERIA¹⁶

3.1 Introduction

In this study we investigate the link between external sources of credit and export decision of manufacturing firms in Nigeria. Generally, access to finance is critical to firms' investment decisions. Firms that produce for domestic consumption and those that produce for export both need access to finance to flourish (Manova, 2013). Nonetheless, it has been observed that unlike domestic producers, exporters require additional finance to cover the huge sunk and fixed costs (Chaney, 2005; Das, Roberts, & Tybout, 2007; Muûls, 2008) that are incurred prior to cross-border market entry. An important implication of this is that differences in firms' access to finance within and between countries may predict their exporting behaviour (Berman and Héricourt, 2010). Consequently, financial development has been noted as crucial for international trade performance of nations (Kletzer & Bardhan, 1987; Baldwin, 1989; Beck, 2002).

Despite the assertion of the positive role of finance in firms' export decision, the available empirical evidence has been inconclusive. Whereas several researchers, including Bernard and Jensen (2004), Muûls (2008), Berman and Héricourt (2010), Manova (2013) and Abor et al. (2014) among others note that access to external finance is crucial in overcoming the substantial upfront costs of internationalisation, others such as Greenaway, Guariglia and Kneller (2007), Levchenko, Lewis and Tesar (2010), Stiebale (2011) and Lancheros and Demirel (2012) argue that access to credit is not important in the exporting decision of firms. These papers advanced three reasons why finance may not be necessary for a firm's internationalisation. First, there is the argument that there are several observable and unobservable firm-level characteristics that impact firms' decision to go foreign rather than mere access to finance and thus once those factors are properly controlled for, financial access becomes unimportant. Second, some also argue that even if finance is indeed necessary to influence the overseas market entry decision of firms, the availability of public measures to enhance exporting activities may reduce the firm's

¹⁶This paper has been presented at the 2015 Global Development Finance Conference organised in Cape Town, South Africa from 29-30 October, 2015.

financial constraints and render access to finance irrelevant. Third, they also note that there is a possibility that those groups of firms to whom exporting is important may not be financially handicapped to be unable to mitigate the upfront costs of foreign market entry. Besides the inconclusiveness in the empirical literature, it is also observed that until recently, most prior studies in the field tend to focus on developed countries (see, Greenaway et al., 2007; Muûls, 2008; Bellone et al., 2010; Stiebale, 2011; Muûls, 2015) owing to availability of reliable data. There is also overconcentration in the literature on only one form of external finance (bank credit) in examining the role of external credit in firms' internationalisation. These phenomena have led to a situation where very little is known about the use of bank and non-bank sources of finance in firms' exporting decision from a developing¹⁷ country perspective.

A few studies: Berman and Héricourt (2010), Lancheros and Demirel (2012) and Abor et al. (2014) investigate the impact of external finance on export activities of firms from a developing and emerging countries' perspective. Berman and Héricourt (2010) examine the effect of financial factors on export decision of firms in nine developing and emerging countries. However, the authors do not explicitly investigate the effect of different types of external finance on export decision of firms. In addition, their sample includes developing and emerging countries in general (with only one country from SSA) implying that their findings may not be totally relevant to all developing countries or regions. Similarly, Lancheros and Demirel (2012) examine the role of finance on export performance of Indian service firms. This study does not also explicitly investigate other sources of external finance beyond bank capital. In the case of Abor et al. (2014), apart from being limited to Ghana, it excludes an analysis of the impact of other equally important sources of external finance on the exporting decision of firms. Furthermore, the paper also ignores the issue of possible endogeneity bias that may plague the use of bank finance in their model.

This study fills the aforementioned gaps and contributes to the literature by investigating the impact of both bank and non-bank credit on export decision of manufacturing firms in Nigeria. The study focuses on Nigeria because it is the largest economy in SSA (IMF, 2015). Thus, understanding the factors (specifically, external credit) which drive Nigeria's exports is vital for

¹⁷Such studies are more lacking in SSA due to unavailability of credible data.

the region's total export performance and economic growth and development. Additionally, Nigeria has established several export promotion and development institutions and programmes compared to most other countries in the region over the decades (Markham, 2004), an attribute which is likely to make exporting activity more pronounced in the country. Furthermore, the 2005 financial sector reform in Nigeria which saw the number of commercial banks reduced from 89 to 21 (UHY, 2015) has led to a stronger banking sector with increased lending and less non-performing assets (KPMG, 2015) suggesting a better access to finance for the country's exporting firms and firms planning to internationalise to expand. Thus, this phenomenon may make exporting in Nigeria more evident relative to other SSA countries most of which have seen financial stagnation over the years. Finally, the essay also focuses on Nigeria because it is the most populous country in SSA (Investment climate statement–Nigeria, 2013) suggesting that the availability of low-cost labour associated with the existence of the country's other natural resources are more likely to attract a large network of enterprises into the country many of which may be exporters or firms whose business activities would promote exports. To the best of my knowledge, this is the first study that explicitly investigates this issue in Nigeria and one of the few in SSA.

The rest of the study is organised as follows: section 3.2 presents the overview of export development in Nigeria. Section 3.3 reviews the extant literature on how finance may affect trade. Section 3.4 describes the methodology used in the study. Section 3.5 discusses the empirical results while section 3.6 concludes the study and offer policy recommendations.

3.2 Overview of export development in Nigeria

Nigeria is the largest economy in Africa with a middle income and emerging market status (IMF, 2015). Its major exports are oil and gas, which took over from the agricultural sector since the 1970s. According to the IMF's Regional Economic Outlook report for SSA in 2015, Nigeria's overdependence on oil and gas¹⁸ exports caused its total annual export revenue to fall in 2015 when world market oil prices plummeted in that year. Specifically, total annual export revenue for Nigeria in 2015 stood at ₦9,728.8 billion, representing a decline of ₦6,575.2 billion, or 40.3% over levels recorded in 2014 (NBS, 2016).

¹⁸Oil and gas account for about 96% of Nigeria's total exports.

To boost exports and reignite economic performance of the nation, the Nigerian government has instituted a number of export development institutions and promotional programmes designed to fulfil the nation's trade policies, which are largely governed by three major trade agreements. These agreements include: the Uruguay Round Agreements of WTO, the ACP-EU Cotonou Partnership Agreement and ECOWAS Trade Treaty and Protocols (Markham, 2004).

According to Markham (2004), export development institutions and promotional programmes are basically grouped under three main functions in Nigeria. The first are those institutions that directly promote Nigerian exports, like the Nigerian Export Promotion Council (NEPC) established in 1976, the Manufacturers' Association of Nigeria (MAN), the African Growth and Opportunities Act Secretariat, the Association of Nigerian Exporters (ANE) and the Nigerian Association of Chambers of Commerce, Industries, Mining and Agriculture (NACCIMA). The second group are those institutions that extend services to influence exporters' operations and performance. These include the Central Bank of Nigeria (CBN), the Nigerian Export-Import Bank (NEXIM) established in 1991 as an Export Credit Agency, the Nigerian Investment Promotion Commission (NIPC), the Ministry of Commerce, the Standards Organisation of Nigeria (SON) and the Nigerian Customs Service among others. The third group are those institutions that provide training programmes and contribute to the human resource development of the export sector. They include the Overseas Export Training Institute, the Nigeria Institute of Marketing and the Multi-mix Export Academy of Lagos.

In spite of the availability of numerous institutions to promote and develop Nigerian exports, lack of finance has often been cited as the major bane preventing the institutions from achieving their full potential and mandate, which is evident in the country's recent declining pattern of trade (Markham, 2004). Surprisingly, the Nigerian Export Import Bank (NEXIM), which has been mandated to provide affordable export credit and offer insurance cover to exporters often does so at high interest rates owing to high inflation rate in Nigeria and the high risk of cross-border trade. Consequently, in spite of the availability of a wide range of quality Nigerian products including wood, furniture, garments among others, most firms are unable to access credit to expand their businesses and prepare themselves for internationalisation (Markham, 2004). Apart from retooling these institutions financially and restructuring the terms of credit on

which NEXIM provides loans to its customers, it is believed that adequate capacity building is also critical to help develop their human resource base to enable them to function properly.

3.3 Related literature

3.3.1 Theoretical Literature

This study is premised on the ‘sunk cost hypothesis’ of international trade developed under the ‘new new trade theory’ pioneered by Melitz (2003) and further developed by Chaney (2005), Manova (2008), Manova, Wei and Zhang (2009) and Manova (2013), who embed financial frictions. The ‘new new trade theory’ is an extension of Paul Krugman’s ‘new trade theory’ which emphasises economies of scale and network effects as key drivers of international trade patterns. The idea of the importance of finance for international trade was however first noted in the Heckscher-Ohlin-Samuelson neo-classical international trade model. These early trade economists show that in a two-country two-sector economy, where the two sectors differ in their need for finance, the more financially developed economy may have a comparative advantage and specialise in production and export of the goods that are more finance intensive in their production.

Prior research by Kletzer and Bardhan (1987) focused on the intermediation function of the financial system in a two-country two-sector setup and observe that countries that are more financially developed tend to specialise in the production and export of finished goods, while their less financially developed counterparts export intermediate products. They argue that intermediate goods depend less on finance relative to finished products because the latter often commits the former as an input for one period for further production, a process that requires more use of capital. These authors further note that lenders are often more willing to extend credit to the producers of finished products relative to their counterparts who produce intermediate goods since the former are seen as more profitable.

Using manufacturing and food sectors to replace the two sectors in the two-country two-sector economy, Beck (2002) builds on the financial intermediation role of the financial system like Kletzer and Bardhan (1987) but relaxes the assumption of differences in financial dependence between the two sectors. The author argues that even if both sectors have a similar need for

external finance, one sector – for example a manufacturing sector in this case, which is assumed to be exploiting increasing returns of scale – will have more access to finance than a food sector which is exploiting constant returns to scale. This argument is valid given that the financial system being profit-driven often allocates resources to the most productive sectors in an economy. Thus a high level of financial development may promote the production and export of manufactured goods, while a low level of financial development may be associated with the export of food commodities.

It is important to observe that these neo-classical trade models lean themselves more to explaining why more financially developed or less financially developed countries export what they export. Furthermore, neo-classical trade models also assume perfect market conditions. Consequently, a major limitation of these theories lies in their inability to explain variations in trade patterns at the firm level, where heterogeneity in terms of firm characteristics and abilities matters for international trade patterns.

Under the ‘new new trade theory’, Manova (2013) building on Melitz (2003) and Das et al.'s (2007) heterogeneous firm framework argues that access to external finance is critical in overcoming the huge sunk and fixed cost that confront firms prior to their foreign market participation. These include the cost of research into the profitability of export markets, adapting products to suit the taste and preferences of new customers, developing and maintaining foreign distribution channels, advertising and meeting capacity-building expenses. Thus given the size of these costs, Manova (2013) argues that the dependence on the firm's internal financial resources alone is woefully inadequate to cover these costs. Consequently, access to external finance is vital in significantly driving firms' foreign market entry decision, trade growth and aggregate economic welfare.

Contributing to the debate in a Melitz (2003) style, Chaney (2005) posits that firms that generate more profit from their domestic sales owing to increased productivity and those that enjoy inherited liquidity are more likely to participate in the export market. On the other hand, the author notes that less productive firms and those that do not inherit any liquidity are less likely to export due to their inability to pay up for the huge upfront costs of exporting. Similarly, under

the same framework, Manova (2013) relates that increased productivity is key to increased profitability and exports since firms are more able to offer higher rates of return to providers of credit. A key similarity between Chaney (2005) and Manova (2013) is the acknowledgement of the critical role of increased production, profitability and access to finance in conducting international trade. However, these trade economists differ in the way in which they argue that the firm must finance its upfront costs of internationalisation. Whereas Chaney (2005) notes that firms must depend on their domestic sales and profit to cover these costs, Manova (2013) argues that they must pledge the profit to obtain external finance to cover the costs.

In summary, it is important to note that the internationalisation of firms entails the financing of huge upfront costs. Access to finance is therefore critical for overseas market entry. It can be inferred that the neo-classical trade theory and the ‘new new trade theory’ both recognise the critical role of finance in international trade patterns of nations. However, the limitations of the neo-classical trade models in explaining the impact of differences in the capabilities of firms on trade within and between countries necessitated the emergence of the ‘new new trade theory’ which seeks to address the issue.

3.3.2 Empirical literature

The empirical literature that examines the impact of finance on the foreign market entry decision of firms adopts different approaches and reports mixed results. A number of papers investigate and document a positive role of external finance or capital in firms’ internationalisation process (see, Bernard & Jensen, 2004; Muûls, 2008; Berman & Héricourt, 2010; Bellone et al., 2010; Askenazy et al., 2011; Abor et al., 2014; Muûls, 2015). These authors argue that such finance is needed to overcome the huge sunk and fixed costs of overseas market entry like learning about the profitability of potential export markets, product customization, regulatory compliance, setting and maintaining foreign distribution networks and capacity building among other costs. In contrast, some studies find that access to external finance is not relevant for firms’ overseas market entry decision (see, Greenaway et al., 2007; Stiebale, 2011; Lancheros & Demirel, 2012). To some of these researchers, external finance may appear irrelevant for the firms’ internationalisation once all observed and unobserved characteristics of the firm are properly catered for. Others suggest that even if indeed finance may be essential in driving the firm’s

decision to go abroad, the availability of public measures may reduce the firm's financial burden and render financial access unimportant. Another explanation that is also given by some of these authors for the irrelevance of access to finance in export decision is the possibility of absence of financial constraints among the group of firms to whom exporting may be important. We discuss studies that observe the positive role of finance in firms' foreign market entry decision, followed by those that find no relationship.

In studying the determinants of export market entry decision of US manufacturing plants using data from the Research Database of the Bureau of the Census for the period 1984-1992, Bernard and Jensen (2004) find that entry costs are very substantial and a major determinant of exporting behaviour in the US. This result suggests that access to external credit may enable financially constraint firms to pay up easily the huge upfront costs of internationalisation, thus helping more firms to 'go abroad'.

Muûls (2008) examines the role of liquidity constraint in the exporting decision and the number of destinations served by existing exporters. Using data on exports for Belgium over the period 1999-2005, the author contends that firms are more likely to be exporting if they enjoy lower liquidity constraints. The finding suggests that financial access may enable enterprises to overcome the sunk and fixed costs of foreign market entry, which are a critical concern in firms' internationalisation.

Contributing to the debate, Berman and Héricourt (2010) investigate the impact of financial factors on both the likelihood to export and the export share of 5,000 manufacturing firms in nine developing and emerging countries. Using data from the World Bank's Enterprise Surveys over the period 1998-2004, the authors find that access to finance is crucial for firms to internationalise. As with Bernard and Jensen (2004) and Muûls (2008), the result implies that access to more finance should be promoted to enable firms to mitigate the huge costs of going overseas.

Using data from Enquête Annuelle Enterprise and DIANE databases, Bellone et al. (2010) study the effect of financial factors on the export market entry decision and export intensity of 25,000

French manufacturing firms over the period 1993-2005. The study finds that better financial access increases the probability of firms' internationalisation as it assists them to overcome the upfront costs of foreign market entry.

Similarly, Askenazy et al. (2011) examine the effect of credit constraints on the number of newly served destinations and the likelihood of exit from the export market of French manufacturing firms. Using a longitudinal dataset from the French Customs Service and accounting information from the Banque de France, the paper finds an inverse relationship between credit constraints and the number of newly served destinations. This finding implies that access to external finance is vital to overcome firms' financial constraints and put them in advantageous positions that allows them to pay up for the huge initial costs of cross-border market entry.

In buttressing the positive role of external credit in firms' internationalisation, Abor et al. (2014) examine the impact of bank finance on export decision in a panel of manufacturing firms in Ghana. Using the Regional Project on Enterprise Development (RPED) data over the period 1991-2002, the study confirms the importance of bank finance in mitigating the sunk costs of foreign market entry and thus recommends the removal of bottlenecks that restrict firms from accessing bank credit in Ghana.

To further reinforce the significantly positive impact of external finance on trade outcomes, Muûls (2015) regresses the firm's decision to export and performance on the level of financial constraint of Belgian manufacturing firms over the period 1999-2007. Using accounting and trade transaction data from the National Bank of Belgium database and credit-rating information from Coface Services Belgium Global Score, the study notes that firms with lower liquidity constraints are more likely to engage in export and import trade. This finding further underscores the importance of increased financial access in offsetting the huge sunk and fixed costs of foreign market entry.

Contrary to the findings of the above studies, Greenaway et al. (2007) examine the association between firms' financial health and foreign market participation. Using a panel of 9,292 United Kingdom manufacturing firms from 1993-2003 and controlling for observable and unobservable

characteristics, the study finds no evidence that firms' *ex-ante* financial health propels their foreign market entry behaviour. The authors argue that causation rather runs from export market participation to financial health, thus making exporters more financially sound. This observation can be attributed to exporters' exposure to a foreign market which is relatively bigger and customers who offer higher prices for the products relative to what the domestic market is willing to offer. This finding implies that access to finance is inconsequential in firms' overseas market entry.

To further underline the insignificance of finance in export decision of firms, Stiebale (2011) investigates the association between financial factors and firms' export decision and the export share of French manufacturing firms. Using data from the AMADEUS database from 1998-2005, the study finds that financial factors do not have an impact on foreign market entry decisions of firms once all relevant observable and unobservable characteristics are taken into account. The author also notes that even if finance is in fact necessary for export decision of firms, the existence of various public measures to promote exports may reduce the firm's financial burden and render access to finance irrelevant. Like Greenaway et al. (2007), the finding suggests that access to finance is immaterial in the exporting activities of firms.

Similarly, in investigating the role of finance in exporting decisions of Indian service firms, Lancheros and Demirel (2012) using data from the Prowess database over the period 1999-2007 report that access to finance is not necessary for firms' internationalisation provided all related observable and unobservable factors are taken into account. This finding emphasises the view of Greenaway et al. (2007) and Stiebale (2011) and implies that policies aimed at promoting financial development with the view to encouraging more firms to go into exporting are a misplaced priority.

In conclusion, the empirical literature that examines the role of finance in the foreign market entry decision of firms is inconclusive. However, it can be seen that most studies document a positive role for finance in covering the huge upfront costs of export market entry, while few papers note no evidence in that regard. The studies that find no association between access to finance and firms' internationalisation often offer three explanations. First, that several observed

and unobserved factors that affect the firm's decision to export exist and once those factors are properly controlled for, access to finance becomes inconsequential. Second, they suggest that even if finance is indeed vital in driving firms' decisions to go abroad, availability of public measures to promote exports may reduce the firms' financial burden and render access to finance unimportant. Third, they also note that there is a possibility that those groups of firms to whom exporting is important may not be financially handicapped to be unable to mitigate the upfront costs of overseas market entry. Apart from the inconclusiveness in the empirical literature, it is also observed that prior studies in the field tend to focus more on developed economies and formal credit.

3.4 Methodology

3.4.1 Data

The study uses the World Bank Enterprise Surveys' (2014) standardised¹⁹ data on manufacturing firms in Nigeria. The surveys provide a firm-level data on a sample of manufacturing and service firms across the developing and emerging world. The surveys which have adopted the 'Global methodology' since 2006 are characterised by a uniform universe, a random sampling technique, a consistent methodology of implementation and a face-to-face interview in their data collection process. As a result, the approach generates representative samples and creates indicators that are comparable across countries and survey years. This study focuses and extracts data on the use of external finance, exports, and other relevant firm-level characteristics from various subsectors of the manufacturing industry in Nigeria to achieve its objective. Table 3.1 shows the composition of the sample used in the study. The table indicates that 1,147 manufacturing firms were surveyed in Nigeria in 2014.

Table 3.1 Composition of the sample

Year	Country	Number of manufacturing firms surveyed
2014	Nigeria	1,147

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

¹⁹The standardised data is generated from the raw data collected from firms in each state. It is designed to foster indicator commonality and comparability across countries. On Nigeria, the most recent of this data was collected in 2014.

3.4.2 Model and estimation technique

We investigate the impact of access to external credit (bank and non-bank credit) on the exporting probability of manufacturing firms in Nigeria. The study employs a probit model given the discrete nature of the dependent variable. Our empirical model, which is specified below follows the work of Berman and Héricourt (2010) and Abor et al. (2014).

$$Probability(\text{exporting} = 1) = \phi(\beta X) \quad (1)$$

Where, β , represents the set of estimated coefficients. X , denotes the vector of explanatory variables including: external credit (bank credit and non-bank credit), age, size, ownership, productivity, education, and firm profit. βX , is the probit score and export dummy = 1 if the firm exports, 0 otherwise. The variables used for the modelling are captured in Table 3.2. Our choice of control variables followed standard trade literature.

In estimating the model, we use the ‘IV probit’ estimator with robust standard errors clustered by subsector which enables us to deal with possible endogeneity issues that may affect the use of bank credit and lack of independence of residuals within the subsectors respectively. We also estimate an alternative model using the ‘GMM estimator’ for robustness.

Table 3.2 Definition of variables

Variable	Definition
Exports	A dummy variable = 1 if firm exports, 0 otherwise. A firm is an exporter if at least 1% of its sales come from direct exports.
Bank Credit	Bank credit as a proportion of total financing.
Non-bank Credit	Credit from non-bank sources as a proportion of total financing (summation of credit from microfinance institutions; finance companies; cooperatives; credit unions; and suppliers' credit and advances from customers).
Firm Age	Natural logarithm of number of years in business.
Firm Size	Natural logarithm of current value of total asset.
Ownership	A dummy variable = 1 if firm is foreign owned, 0 otherwise. A firm has foreign ownership status if at least 10% of its shareholders are foreign nationals.
Productivity	Natural logarithm of labour productivity and defined as value added over number of employees. Where value added is total production cost minus cost of raw materials.
Education	Percentage of workforce that completed secondary education.
Profit	Natural logarithm of profit before tax, measured by total annual sales minus total cost of production.
FinStatement	A dummy variable = 1 if firm was audited in the last financial year by external auditors, 0 otherwise.

3.4.3 Theoretical underpinning of the model

External credit is measured by bank credit and non-bank credit. Bank credit is measured as total bank credit as a proportion of total financing of the firm. Non-bank credit is the summation of credit from microfinance institutions; credit from cooperatives and unions; and 'suppliers and customer' credit as a proportion of total firm financing. According to Chor and Manova (2012) and Manova (2013), since internal earnings of the firm is often woefully inadequate to meet the huge upfront costs of internationalisation, access to external credit, particularly by financially constrained firms is vital to encourage more firms to go into exporting. Specifically, these upfront costs emanate from learning about the profitability of potential export markets, customizing products to suit the taste and preferences of foreign customers, regulatory compliance, setting and maintaining foreign distribution networks among others. We therefore hypothesise based on this discussion that the coefficient of bank credit and non-bank credit will be positive and significantly correlated with the decision to export in the study.

Age has been extensively used in the trade literature (see, Jovanovic, 1982; Roberts & Tybout, 1997; Abor et al., 2014) to show the level of experience a firm has in understanding the operations of foreign markets. These authors argue that older firms have more accumulated experience that enables them to understand the activities and operations of foreign markets better than their younger counterparts. Based on this, age is expected to relate significantly positive with exports decision in the study.

We also included firm size in the model as a measure of economies of scale in production and level of collateral a firm has. Several authors including Roberts and Tybout (1997) and Carpenter and Petersen (2002) report that large firms tend to benefit from economies of large-scale production and have more collateral. They argue that these characteristics incontestably make larger firms more competitive in foreign markets relative to their smaller counterparts as they are able to sell at cheaper prices, but make higher returns. Thus being large encourages more firms to go into exporting because of the associated benefits. Contrary to this discussion, Astarloa et al. (2012) suggest that entering the overseas market is no longer a preserve of only an already established large firms as standard thinking suggests. ‘Born-to-Export-Firms’ enter the overseas market right from their creation because they are either established to do so or recognise that their products have little or no domestic demand and thus focusing on the international market is critical for them right from the beginning in order to flourish. As a result of the above discussions, we expect the coefficient of firm size to correlate either positively or negatively with firms’ export decision in the study.

Ownership is captured with a dummy variable which equals 1 if a firm is foreign-owned, 0 otherwise. In this study, a firm has foreign ownership status if at least 10% of its shares are foreign owned. According to Kneller and Pisu (2007), foreign-owned firms are more likely to internationalise relative to their domestic counterparts as a result of foreign affiliation and the availability of other resources of the parent company. From this analysis, we predict a positive relationship between firms’ ownership and export decision in this study.

Productivity is measured as a natural logarithm of value added over the number of employees. According to Melitz (2003) and Berman and Héricourt (2010), more productive firms are more

likely to export once they have produced above a certain threshold that satisfies domestic consumption. However, findings from some recent studies including Manova (2013) have contradicted this view and shown that selection of firms into the overseas market is imperfectly correlated to firms' productivity. Despite this theoretical debate in the literature, this study supports the view of Melitz (2003) and Berman and Héricourt (2010). Consequently, we expect productivity to positively and significantly influence exports size in this study.

Education measured as a percentage of the workforce who completed secondary education has also been widely used in the export literature to highlight its importance in firms' decision to go global. According to Brush, Edelman and Manolova (2002), employee education and development is vital for higher levels of entrepreneurial capabilities, network building and overall firm competitiveness, which are critical in going global. The authors stress that a higher level of human capital is the single most important factor that distinguishes exporting firms from their non-exporting counterparts. We therefore expect employee education to correlate positively with the firms' decision to export in the study.

Finally, profitability, which is measured as a logarithm of total annual sales before tax minus total cost of production, is expected to associate positively with a decision to export. Chaney (2005) notes that profitable firms can use their profit²⁰ to offset the sunk costs of internationalisation or plough it back into the firm to generate more profit to mitigate such costs. Manova (2013) posits that profitable firms can pledge their profit as collateral to raise more finance to cover the huge sunk and fixed costs of exporting relative to their less profitable counterparts.

3.4.4 Identification issues and post-estimation tests

In the empirical model, bank credit has the potential to become endogenous to export decision, a phenomenon which may lead to inconsistent parameter estimates and bias our results. To deal with this issue, an Instrumental Variable (IV) is needed. Such a variable must be strongly correlated with the endogenous variable (bank credit). It must also be uncorrelated with the

²⁰Profit here basically refers to the firm's normal annual profit based on the assumption that all revenues and expenditures within the fiscal year have been fully collected or settled and that the profit is actually available in the firm's vault.

regression error term, which also means that it must not affect the dependent variable directly. In practice, finding such an instrument is difficult. In this study, we use ‘FinStatement’, which represents whether the firm’s financial statement has been externally audited within the last accounting period as an IV to control for the use of bank credit in the model. We show the endogeneity test results in Table 3.7 in the Appendix.

Generally, profitable firms are more likely to offer themselves for external auditing relative to their poor performing counterparts. Consequently, banks may be more willing to extend more credit to firms that have externally audited financial statements, with the view that they are profitable and can repay their loans when they fall due. It is crucial for us to note that in the credit market, the borrower’s ability to repay is the single most important factor that determines whether their credit applications will be granted. However, having an externally audited financial statement does not drive an export decision, but rather only communicates a positive signal to creditors to extend more credit to such firms.

To test the strength of the instrument, we perform the following two tests: First, we employ the F-test²¹ of the instrument’s coefficient in the first stage regression and use the Staiger and Stock (1997) rule-of-thumb of F-value > 10 being enough confirmation to dismiss issues of weak instruments. Second, we compare the Cragg-Donald (1993) F-statistic with Stock and Yogo (2005) critical values as an additional check to confirm the strength of the instrument. Specifically, the Stock and Yogo (2005) critical values show ‘Two Stage Least Square (2SLS) size of nominal 5% Wald test’ and ‘Limited Information Maximum Likelihood (LIML) size of nominal 5% Wald test’ at rejection rates of 10%, 15%, 20% and 25%. It also reports ‘2SLS relative bias’ at rejection rates of 5%, 10%, 20% and 30% under the joint scheme where two instruments are used. In using this approach, an instrument is said to be strong if the Cragg-Donald minimum eigenvalue statistic is higher than a critical value under any of the schemes at a chosen rejection rate. The test results which are presented in Tables 3.5 and 3.6 in the Appendix for the F-test of the instrument’s coefficient in the first stage regression and the Cragg-Donald F-

²¹In ivprobit estimation, the first stage regression is linear so the linear version of the model can be estimated and appropriate diagnostic tools employed subsequently to determine the strength of the instrument.

statistic respectively indicate that our instrument ‘FinStatement’ is strong²². Since the empirical model is exactly-identified, it is practically impossible to test the validity or overidentification restriction of the instrument in this study.

3.5 Empirical results

3.5.1 Descriptive statistics

The descriptive summary statistics for the dependent and independent variables are presented in Table 3.3.

Table 3.3 Descriptive statistics

Variable	Mean	SD	Min	Max	Obs.
Bank Credit	3.3607	7.8301	0	80	675
Non-bank Credit	9.7452	14.4303	0	90	675
Firm Age	2.6440	0.7097	0	4.6151	1033
Firm Size	13.8684	2.7986	9.6158	25.32844	426
Productivity	10.2002	2.6614	0.0370	20.3178	519
Profit	14.1571	2.4580	8.5172	27.2350	396
Education	52.3295	39.2096	0	100	929
Dummy Variables:					
Exports:-	Frequency	Percentage			
Exporters	203	20.88			
Non-exporters	769	79.12			
Total Obs.	972	100.00			
Ownership:					
Foreign	124	11.99			
Domestic	910	88.01			
Total Obs.	1,034	100.00			

Source: Author’s computation based on 2014 World Bank Enterprise Surveys’ standardised data for Nigeria

The table indicates that approximately 21% of the sampled firms in Nigeria are exporters. On average, bank credit makes up 3.36% of the firms’ total financing and non-bank credit constitutes 9.74%. Also, approximately 12% of the sampled firms are foreign owned. A correlation matrix presented in Table 3.8 in the Appendix confirms that multicollinearity may not be a problem among the covariates.

²²Under both the ‘2SLS’ and ‘LIML’ size of nominal 5% Wald test at 15% rejection rate, our instrument is strong because the minimum eigenvalue statistic of 11.69 is greater than the critical value of 8.96. Also, the F-test of the instrument’s coefficient in the first stage regression has an F-value of 20.08 with a p-value of 0.0009.

3.5.2 Regression results

Table 3.4 presents the regression results of the effect of external credit (bank credit and non-bank credit) on export decision of manufacturing firms. Specifically, we show the IV probit estimates in model 1 while the GMM estimates are contained in model 2.

Table 3.4 Effect of external credit on export decision in Nigeria

Variable	(1) IV Probit	(2) GMM
Constant	-0.855 (0.149)	0.243 (0.209)
Bank Credit	0.083*** (0.000)	0.030*** (0.006)
Non-bank Credit	0.012* (0.061)	0.004* (0.068)
Firm Age	0.084 (0.659)	0.009 (0.859)
Firm Size	-0.002 (0.966)	0.000 (0.991)
Ownership	0.767*** (0.004)	0.357*** (0.000)
Productivity	-0.073 (0.116)	-0.024* (0.092)
Profit	0.012 (0.568)	-0.000 (0.969)
Education	-0.002 (0.464)	-0.001 (0.383)
Test stat.		
Observation	155	155
Wald chi ²	606.93	1919.95
Prob> chi ²	0.0000	0.0000

Note: ***, ** and * represent 1, 5 and 10 per cent significance levels respectively.

P-values in parenthesis are based on robust standard errors clustered by subsector.

Wald test of exogeneity = 8.30, Pro > chi² = 0.004.

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

The IV probit result in Table 3.4 reveals that three of the independent variables are significant (bank credit, non-bank credit and ownership) while five are not (firm age, firm size, productivity, profit and education). Specifically, Table 3.4 shows a significantly positive association between bank credit and export decision which suggests that manufacturing firms in Nigeria with access to bank credit are more likely to enter the export market. Additionally, the significantly positive relationship between non-bank credit and export decision as reported in Table 3.4 implies that manufacturing firms in Nigeria with access to non-bank credit are also more likely to internationalise. Finally, ownership enters the regression significantly positive with export

decision signifying that foreign own manufacturing firms in Nigeria are more likely to export relative to their domestic counterparts. These findings are confirmed in the alternative model. The next section discusses the significant results with more focus on the influence of external credit (bank and non-bank) on export decision, in line with the objective of the study.

3.5.3 Discussion

The significantly positive association between bank credit and export decision as reported in Table 3.4 affirms the ‘sunk cost’ hypothesis of international trade under the ‘new new trade’ theory which opines that because firms face a huge sunk and fixed costs in their internationalisation process, access to external credit is critical to enable them to enter the overseas market. The theory which was pioneered by Melitz (2003), initially focused on firm-level heterogeneity in productivity and its consequences for exports, but was later extended by Chaney (2005), Manova (2008) and Manova (2013) who embedded financial frictions. Specifically, foreign market entry requires significant upfront investment in human and infrastructural capacity building, research into the tastes and preferences of overseas consumers, the cost of regulatory compliance, building distribution channels, branding and other related activities. Consequently, firms with access to higher levels of bank credit are more likely to meet these costs and internationalise relative to their counterparts that do not. This result confirms our *a priori* expectation and provides fresh evidence on the positive role of external finance in firms’ foreign market entry decision. The finding supports earlier empirical works in the field including Bernard and Jensen (2004), Muûls (2008), Berman and Héricourt (2010), Abor et al. (2014) and Muûls (2015) who show the importance of external finance in firms’ foreign market entry decision. On the other hand, it contradicts the works of Greenaway et al. (2007), Stiebale (2011) and Lancheros and Demirel (2012) who assert that access to external finance is irrelevant in firms’ internationalisation process. These authors argue that once the firm properly caters for all observed and unobserved factors that promote exports couple with the availability of public measures²³ among others, access to external finance becomes irrelevant in their foreign market entry decision.

²³ Public measures here include the various interventions instituted by the government to promote exports which may not necessarily include provision of credit.

In line with our *a priori* expectation, Table 3.4 further shows that our alternative external finance variable, non-bank credit, also has a significantly positive association with export decision in Nigeria. Like bank credit, finance from non-bank sources also enables firms to overcome the huge upfront costs of internationalisation. Generally, non-bank credit is used by SMEs, which appear to dominate the manufacturing landscape in most developing and emerging countries. Often these firms are considered by banks as ‘very risky’ to attract any significant amount of credit for capital investment purposes since they lack the necessary collateral. It is in response to this that non-bank financial institutions have emerged in most developing and emerging countries like Nigeria to provide credit to viable SMEs to enable them to export. This finding further confirms the ‘sunk cost’ hypothesis of international trade discussed above and extends the empirical literature in the field by showing specifically how access to non-bank credit affects firms’ foreign market entry decision, an area which has gain little empirical research attention.

In the case of ownership and in line with our *a priori* expectation, Table 3.4 suggests that firms that are foreign-owned are more likely to export relative to their locally owned counterparts. This finding supports the conclusion of Kneller and Pisu (2007) who observe that foreign-owned firms are more likely to internationalise compared to their domestic counterparts due to foreign affiliation and the availability of other resources of the parent company.

To sum up, the study reveals that increased access to external credit (bank and non-bank credit) is critical to encourage more manufacturing firms to go into exporting in Nigeria. Additionally, it is also evident that foreign-owned firms are more likely to internationalise in Nigeria.

3.6 Conclusion

Firms’ access to external credit is essential to enable them to overcome the huge sunk and fixed costs of foreign market entry. Lack of financial access has therefore been cited as a common cause for declining export levels in most developing and emerging economies owing to insufficiencies in the financial infrastructure of these countries. This study investigates the influence of access to external credit (bank and non-bank credit) on the likelihood of manufacturing firms to export in Nigeria. Employing an IV probit model, the findings show that both bank and non-bank credit contribute significantly to enhancing the probability of

manufacturing firms to export in Nigeria. These results are confirmed in the alternative model that employs the ‘GMM’ estimator. The findings have important policy implications for Nigeria.

First, interventions may be directed at creating an enabling environment that would motivate the increase in the breadth and depth of financial presence across Nigeria in order to boost access to export credit. This may be done through offering special tax relief to banks. Other ways include banks investing in innovative strategies such as branchless banking and mobile banking which have the capability to increase access without the huge cost outlays for physical infrastructure. Second, banks may be encouraged to develop special credit packages for smaller but viable firms which are willing to go into exporting but have no collateral and create a special task force to monitor and redeem such loans when they fall due. Third, government may also channel export development credits through the banks for efficient allocation, monitoring and collection.

For the non-bank credit sources, government may create an enabling environment to attract the private sector to participate in the establishment of more export-related credit schemes across the country to improve access. Additionally, government may also serve as a guarantor for firms that wish to acquire export credit from non-bank sources.

APPENDIX

Table 3.5 First-stage regression summary statistics: Post-estimation test (F-test) on the strength of the instrument ‘FinStatement’

IV	F(1, 11)	Prob> F
FinStatement	20.08	0.0009

Source: Author’s computation based on 2014 World Bank Enterprise Surveys’ standardised data for Nigeria

Table 3.6 First-stage regression summary statistics: Post-estimation test on the strength of the instrument ‘FinStatement’

Variable	R-Sq.	Adjusted R-Sq.	Partial R-Sq.	F (1,147)	Prob> F
Bank	0.1533	0.1069	0.0741	11.6896	0.0008

Cragg-Donald minimum eigenvalue statistic = 11.6896

H ₀ = Instruments are weak	Critical values			
	10%	15%	20%	25%
2SLS Size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML Size of nominal 5% Wald test	16.38	8.96	6.66	5.53

Source: Author’s computation based on 2014 World Bank Enterprise Surveys’ standardised data for Nigeria

Table 3.7 Tests of endogeneity (bank credit)

H₀: variable is exogenous

Durbin Score $\chi^2=5.899$	Wu-Hausman F(1,145) = 5.737
P-value = 0.015	P-value = 0.018

Source: Author’s computation based on 2014 World Bank Enterprise Surveys’ standardised data for Nigeria

Table 3.8 Correlation matrix

	Exports	Bank Credit	Non-bank Credit	Firm Age	Firm Size	Ownership	Productivity	Profit	Education
Exports	1.0000								
Bank Credit	0.3216	1.0000							
Non-bank Credit	0.2556	0.2007	1.0000						
Firm Age	-0.0778	0.0573	-0.1261	1.0000					
Firm Size	-0.2088	-0.0395	-0.1420	0.2853	1.0000				
Ownership	0.4419	0.2918	0.1994	-0.0451	-0.0693	1.0000			
Productivity	-0.2347	-0.0543	-0.2114	0.1287	0.3741	-0.0821	1.0000		
Profit	-0.0146	0.0399	-0.0379	0.1935	0.3662	0.0488	0.2259	1.0000	
Education	-0.2567	-0.1226	-0.1592	0.0950	0.3416	-0.2088	0.1590	0.0436	1.0000

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

CHAPTER FOUR

EXTERNAL CREDIT AND FIRMS' EXPORTS SIZE IN NIGERIA²⁴

4.1 Introduction

Several authors including Ndulu, Chakraborti, Lijane, Ramachandran and Wolgin (2007), Abdon and Felipe (2011) and Menyah et al. (2014) observe that inadequate financial access is one of the major challenges that has made sub-Saharan Africa's exports meagre relative to other developing regions like Asia. This study analyses the effect of external credit on firm exports size in Nigeria. Djankov, Freund and Pham (2010), Amiti and Weinstein (2011) and Manova (2013) state that access to finance is critical in promoting firm-level exports. The authors argue that exporters require constant access to external finance to enable them to mitigate their marginal and other operational costs owing to the inadequacy of internal earnings and cash flows. They added that the exporters' need for external finance is further exacerbated due to the prevalence of the longer time lag between exporters' sales and cash receipts. Specifically, such finance is needed to purchase inputs to continue production, pay bills and also offset the costs of duties, freight insurance and shipping. Therefore, entry into the export market does not guarantee continuous participation. There is the problem of sporadic and non-survivalist exporters. These are firms which are unable to sustain their export activities in the international market, a problem which may be due to financing constraints. This suggests that access to external credit is not only necessary to encourage more firms to overcome the huge sunk and fixed costs of foreign market entry but it is also vital to maintain the survival of exporters through the provision of their working capital needs.

According to Djankov et al. (2010), lack of access to financial resources more adversely affects the availability of exporters' working capital than their non-exporting counterparts as cross-border shipping and delivery takes on average 30 to 90 days to complete. Similarly, Amiti and Weinstein (2011) buttress this point and assert that exporters need access to credit or trade finance owing to the longer time lag between sales and exporters' cash receipts. Also, Manova (2013) opines that since retained earnings are often inadequate in meeting all the working capital

²⁴This paper has been presented at the 2015 Global Development Finance Conference organised in Cape Town, South Africa, from 29-30 October, 2015 and also at the 2016 African Review of Economics and Finance Conference organised at Kwame Nkrumah University of Science and Technology, Kumasi, Ghana from 11-12 August, 2016.

needs of exporters, access to external finance by financially vulnerable exporting firms is crucial in mitigating the costs of shipping, duties and freight insurance, most of which are incurred before export revenues are earned.

In spite of the affirmation of the positive role of external credit in export levels of firms, the available empirical evidence still remains debatable, with the majority of the studies focusing on developed countries. Whereas one group of researchers such as Du and Girma (2007), Amiti and Weinstein (2011), Paravisini et al. (2011), Chor and Manova (2012) and Manova (2013) provide evidence that better access to external financial resources positively and significantly drives exports size, particularly in financially susceptible firms owing to inadequacy of internal earnings; others such as Bellone et al. (2010), Berman and Héricourt (2010), Stiebale (2011) and Lancheros and Demirel (2012) argue otherwise and attribute firms' high exports size to the influence of foreign ownership, productivity and technology. Thus, the inconclusiveness in the empirical literature and lack of identical studies in developing and emerging countries call for more rigorous work in the field, with more focus on less-developed countries where lack of financial access is more severe.

This study focuses on Nigeria because it is the largest economy in SSA (IMF, 2015) implying that its exports size is vital for the region's total export performance and economic growth and development. Furthermore, Nigeria has instituted several export development institutions and programmes relative to most other countries in the region over the past decades (Markham, 2004), a characteristic which is likely to make exporting activity more pronounced in the country. Additionally, Nigeria has witnessed a financial sector reform in 2005 which shrunk the number of commercial banks in the country from 89 to 21 (UHY, 2015) leading to a stronger banking system marked with increased lending and less non-performing loans (PKMG, 2015). An important implication of this is that exporters and firms intending to enter the overseas market in Nigeria may have better access to finance to expand their businesses which may subsequently make exporting activity in the country more pronounced relative to other SSA countries most of which have seen financial suppression over the years. Finally, it is also significant to note that Nigeria is the most populous country in SSA with an estimated population of 170 million (Investment climate statement–Nigeria, 2013). As a result, the availability of low-

cost labour coupled with the existence of the country's other natural resources are more likely to draw a large network of enterprises into the country many of which may be engaged in exporting or firms whose business activities may considerably propel exports. To the best of my knowledge, this is the first study that unequivocally examines this issue in Nigeria and one of the few in SSA.

The rest of the study is organised as follows: Section 4.2 discusses the overview of efforts to promote firm-level exports in Nigeria. Section 4.3 reviews the extant literature on how external finance may affect the magnitude of exports. Section 4.4 describes the methodology used in the study. Section 4.5 discusses the empirical results while section 4.6 concludes the study and offer policy recommendations.

4.2 Overview of efforts to promote exports of manufactured products in Nigeria

High export levels are vital for economic growth and development of every nation owing to their ability to create jobs and increase foreign earnings. Basically, exports in Nigeria can be described under two main categories namely, oil and non-oil exports with the former contributing more than half to the country's total exports (Osuntogun, Edornu, & Oramah, 1997).

Nigeria's manufacturing sector is one of the non-oil sectors of the country's economy and continues to contribute moderately to total exports and GDP. Currently, the sector is dominated by various subsectors including food, beverages, tobacco, textiles, apparel, wood and wood products, chemical products and pharmaceuticals (NBS, 2014). Though the sector has seen some appreciable improvement in recent years, it has been noted that this may not be sustainable due to supply-side challenges which continue to suppress the nation's exports. For example, Nigeria recorded ₦16,426.8 billion in 2015, representing 30.6% less than the total value of trade registered in 2014 (NBS, 2015). This development which is attributed to a fall in export value between 2014 and 2015 may be triggered by lack of access to finance which is crucial to offset the working capital needs of financially constrained exporters. Several authors including Osuntogun et al. (1997) have argued that for Nigeria to reasonably increase its exports, renewed efforts may have to be redirected to enhancing the country's manufacturing sector in order to encourage exporters to increase their sales. It is important to point out that these researchers are

not the first to draw this conclusion, as efforts to promote firm-level exports in Nigeria have long been high on policy makers' agenda since the second half of the 1970s. Some of these notable efforts, which the study discusses in turn, include the establishment of the Nigerian Export Promotion Council (NEPC), the passing of the Export Incentives and Miscellaneous Provisions Decree, the establishment of the Nigerian Export Import Bank (NEXIM), the creation of Export Processing Zones and the recent allocation of 'export funds' by the Central Bank of Nigeria.

The Nigerian Export Promotion Council (NEPC) was established in 1976 as a government agency mandated to regulate, promote, record and monitor export trade in Nigeria. It is responsible for spearheading all exporting activities in Nigeria and particularly for providing indigenous manufacturers with the necessary help to enable them to export easily. Core activities of the agency include proffering trade information to existing and potential exporters, assisting in product and market development, being the lead provider of human resource training and development on issues of export, coordinating and liaising with multilateral agencies like the World Bank, the United Nations Development Programme (UNDP) and the administration of exports and incentive schemes.

Another effort by the Nigerian government to increase firm-level exports is the introduction of the Export Incentives and Miscellaneous Provision under Decree No. 18 of 1986. This Decree basically established three funds all meant to address various issues confronting exports with the principal aim of significantly driving up Nigeria's total value of exports. These funds include: the Export Development Fund, the Export Expansion Grant Fund and the Export Adjustment Scheme Fund.

The Nigerian government under Decree No. 38 of 1991 has also established the Nigerian Export Import Bank (NEXIM) as an export credit agency. This agency was specifically established to promote exports under the Structural Adjustment Programme which seeks to resolve Nigeria's worsening trade balance and to reignite economic growth. To date, NEXIM basically offers different types of export credit facility (Direct Lending Facility, Foreign Input Facility and Stocking Facility, among others) and also provides export insurance and guarantees to its clients.

To promote exports in Nigeria, the government also created Export Processing Zones through the pronouncement of Decree No. 34 of 1991. Under this, firms are exempted from normal custom duties on imported raw materials and the export of finished goods. Additionally, the country's industrial regulation has also been relaxed for beneficiary firms to enable them to increase their productivity and exports. For example, regulations on profit repatriation, access to foreign exchange and foreign ownership of firms, among others have all been relaxed.

Finally, in reaction to the 2015 economic downturn in Nigeria, which was largely attributed to a fall in export value and tighter financing conditions (IMF, 2015), the Central Bank of Nigeria has launched a ₦500 billion non-oil Export Stimulation Fund (ESF) to promote firm-level exports in order to reignite the economy. In addition, the Bank has also increased the export credit Rediscounting and Refinancing Facility (RRF) by ₦50 billion, as a liquidity window to encourage Deposit Money Banks (DMB) to expand their lending activities towards exporting.

In spite of the above efforts to promote Nigerian exports, current trends continue to show a decline in the country's total export value. Given the huge working capital gap that endangers most exporters in the country, increasing access to finance is paramount to enable such firms to overcome their marginal costs of trade and production which is critical in increasing exports size. Though efforts to provide export credit by successive Nigerian governments is clear, it appears such interventions did not yield much result.

4.3 Related literature

4.3.1 Theoretical literature

This chapter is based on an extension of the 'new new trade theory' under which Manova (2008), Manova et al. (2009) and Manova (2013) highlighted the importance of access to external credit²⁵ in dealing with working capital inadequacies of financially vulnerable exporters. In other words, the authors contend that just as firms need access to external credit to overcome the huge sunk and fixed costs of foreign market entry, they also need same financial access to remain buoyant in the export market. Under the theory, access to external credit is expected to increase exports size because retained earnings or internal cash flows from operations are often

²⁵By external credit, Manova is referring to the firms' working capital, which is solicited outside the firm.

inadequate to cover the total working capital of exporters. Specifically, these costs include expenditure on material inputs, payment of salaries, utility bills, duties, freight insurance and shipping, all of which are incurred before export revenues are realised. It is vital to note that the inability of the firm to meet these costs may interfere with production and repress exports. It has also been noted that unlike domestic production, cross-border shipping and delivery on average takes between 30 to 90 days to complete (Djankov et al., 2010), a development which further increases exporters' appetite for more external credit in order to remain buoyant. This long duration between cross-border shipping and delivery suggests that short-term credit may not be helpful to the exporting firm.

In summary, it is vital to note that since internal earnings or cash flows from operation are often inadequate and cross-border shipping and delivery also normally takes between 30 to 90 days to complete, access to affordable long-term external credit by financially vulnerable exporters is vital to enable them to remain functional and increase their export intensity.

4.3.2 Empirical literature

The empirical literature that examines the impact of external finance on firm level exports indicates mixed results, with very little attention to developing countries. Whereas some studies report a positive role of external finance in the export intensity of firms (see, Du & Girma, 2007; Amiti & Weinstein, 2011; Paravisini et al., 2011; Chor & Manova, 2012), others find no such evidence (see, Bellone et al., 2010; Berman & Héricourt, 2010; Stiebale, 2011; Lancheros & Demirel, 2012).

Generally, studies that report positive association between external finance and exports attribute such an observation to lack of adequate internal earnings or cash flows in the firm to overcome the total working capital needed to pay off the firm's marginal costs of trade and production. Consequently, such exporters tend to depend more on external finance to drive their exports. On the other hand, those that observe no relationship between external credit and exports size infer three main reasons why this may happen. First, they indicate the possibility that sampled firms may not be financially constrained since they have adequate internal earnings or cash flows to overcome their working capital needs. Second, some argue that since exporting is often

considered as more profitable relative to pure domestic production, exporters may be financially independent owing to the huge profit they may have accumulated from prior foreign sales, which makes external credit insignificant to their operations. Third, others argue that financial factors may not influence foreign market sales once all observable and unobservable factors have been properly accounted for. According to this view, accounting for endogeneity issues is essential in examining the effect of finance on exports size. It is fascinating to note that though a few studies like Du and Girma (2007), Berman and Héricourt (2010) and Lancheros and Demirel (2012), investigate the role of external credit in firms' exports size from a developing and emerging country perspective, none of these papers explicitly focus on sub-Saharan Africa,²⁶ where lack of access to finance is more pronounced.

On the positive impact of bank credit and exports, Du and Girma (2007) examine the relationship between export intensity, bank credit and foreign direct investment (FDI) for more than 28,000 manufacturing firms in China. Using longitudinal data from the Annual Report of Industrial Enterprise Statistics database over the period 1999-2002, the study finds that bank credit is positively associated with firm-level export. This finding suggests that access to external finance or bank credit is vital for financially vulnerable firms in driving their size of exports.

Similarly, Amiti and Weinstein (2011) investigate the association between bank health and export levels of Japanese firms during the country's 1990s financial crises. Specifically, the authors match exporters with the main banks that provide them with trade finance. Using data from the Development Bank of Japan (DBJ) and Nikkei NEEDS Financial Quest over the period 1990-2010, the study shows that banks' financial health is a critical factor in determining firm-level exports. In other words, banks that were financially weak during the crises were less able to financially support their clients,²⁷ resulting in the fall of those firms' export level. The finding partly implies that adequate access to financial resources is essential for firms that depend on external finance to boost their exports.

²⁶The dearth of identical studies in sub-Saharan Africa is frequently attributed to unavailability of credible data.

²⁷The exporters

Contributing to the literature, Paravisini et al. (2011) study the link between bank credit and export volume of a panel of Peruvian firms over the period 2007-2009. The findings reveal that a 10% drop in the supply of bank credit leads to a decrease of 2.3% in the volume of annual exports. This finding therefore underscores the need for adequate access to external finance to boost firms' exports size.

In a related study, Chor and Manova (2012) analyse the relationship between the recent international trade collapse and credit conditions over the period 2006-2009. With the aid of US import data, the authors observe that deficiencies in credit supply in source countries were an important conduit through which the crises affected trade volumes.

Of studies that report no relationship between external credit and exports, Bellone et al. (2010) investigate the effect of financial factors on export intensity of 25,000 French manufacturing firms as part of their study over the period 1993-2005. With the aid of data from *Enquête Annuelle d'Entreprise* and *DIANE* databases, the authors find no evidence of positive association between financial health and firms' export share. The implication of this result is that access to financial resources is insignificant in boosting firm-level exports.

Using data from World Bank Enterprise Surveys over the period 1998-2004, Berman and Héricourt (2010) examine the influence of financial factors on exporting decisions of 5,000 manufacturing firms in nine developing and emerging countries. Findings from the study confirm that access to finance is not essential in boosting firm-level exports.

Similarly, Stiebale (2011) investigates the link between financial factors and firms' export market entry and level of sales behaviour. Using data from the *AMADEUS* database over the period 1998-2005 for French manufacturing firms, the author observes that financial factors do not influence cross-border trade once all observed and unobserved factors are properly controlled for.

In contributing to the debate, Lancheros and Demirel (2012) examine the effect of finance on the exporting decisions of service firms in India. Using data from the *Prowess* database over the

period 1999-2007, the study finds no relationship between external finance and exports. The paper recommends that in increasing international trade activity, policy should be directed towards investment in plant size, technology and productivity since these factors are strongly related to exports rather than financial development.

In summary, the empirical work that investigates the influence of external finance on the export intensity of firms is inconclusive with little attention to SSA and also focuses more on formal credit relative to informal credit. Whereas some papers find a positive role of external credit in the exports size of firms, others observe no such role. This inconclusiveness of results and dearth of identical studies in SSA inevitably calls for more rigorous empirical work to ascertain the real impact of external credit on exports size in the region. The study also extends the empirical literature by including informal credit (suppliers and customer credit) as an alternative finance source for the firm. The findings of the study have important policy implications for the region's economies, many of which are currently looking for ways to boost their exports in order to impel their economic performance.

4.4 Methodology

4.4.1 Data

This study uses the World Bank Enterprise Surveys' (2014) standardised data²⁸ on manufacturing firms in Nigeria. Specifically, the paper focuses on exporters and extracts data on the level of external finance (bank finance, and 'suppliers and customer' credit) the firm uses, their exports size and other relevant firm-level characteristics. One of the key aims of the Survey is to provide researchers with reliable and comprehensive firm-level data to enable them to analyse factors that affect the development of businesses in the developing and emerging world. The survey collects data after every five to eight years on member countries and targets over 1,000 firms per country in each survey. The survey adopts the 'Global methodology' which is characterised by a consistent method of implementation, a uniform universe, a random sampling technique and a face-to-face interview in its data collection process. As a result, the approach generates representative samples and creates indicators that are credible for member countries. In

²⁸ This is the most recent data on Nigeria in this regard.

all, the study used 375 exporters of different sizes from different subsectors, which enables us to have a balanced sample of exporting firms.

4.4.2 Model specification

The study investigates the influence of external finance on the magnitude of firms' exports in Nigeria. The paper focuses on bank credit and 'suppliers and customer' credit since these sources of credit are commonly use by exporters. The empirical model, which follows the work of Berman and Héricourt (2010), is specified below:

$$Exportsize_i = \alpha + \beta_1 ExternalCredit_i + X_i + \mu_i \quad (2)$$

Where $Exportsize_i$ is the dependent variable and represents the exports size of firm i , $ExternalCredit$ denotes the level of external credit (bank credit and 'suppliers and customer' credit) used by firm i . X_i represents a vector of control variables for firm i , including firm age, monthly power outages, customs processing time, ownership, labour productivity and firm size. μ_i is the error term. The definitions of the dependent and independent variables are provided in Table 4.1. Our choice of control variables followed standard trade literature.

Table 4.1 Definition of variables

Variable	Definition
Exports size	Ratio of exports over total sales multiplied by 100.
Bank credit	Bank finance as a proportion of total financing.
Suppliers and customer credit	Credit from suppliers and advances from institutional customers as a proportion of total financing.
Firm age	Number of years the firm has been in business.
Monthly power outages	Natural logarithm of average number of monthly power outages.
Customs processing time	Natural logarithm of average number of days it takes to process all paper works with custom officials at the port before goods are exported out of the country.
Ownership	A dummy variable =1 if firm is foreign owned, 0 otherwise. A firm has foreign ownership status if at least 10% of its shareholders are foreign nationals.
Productivity	Natural logarithm of labour productivity and defined as sales over number of employees.
Firm size	Natural logarithm of current value of total asset.
FinStatement	A dummy variable =1 if firm was audited in the last financial year by external auditors, 0 otherwise.

4.4.3 Theoretical underpinning of the model

External credit is measured by bank credit and ‘suppliers and customer’ credit. Bank credit is the proportion of bank finance in the total financing of the firm. Manova (2013) argues that because internal finance alone is often insufficient in mitigating all the working capital needs of exporters, constant access to external credit (particularly bank credit) is vital to enable them to remain vibrant. Specifically, such credit is used to finance the costs of duties, freight insurance and shipping most of which are incurred before export sales are earned. Furthermore, access to bank credit enables financially constrained exporters to offset the fixed costs they incur in expanding into new markets. Based on this discussion, we expect the sign of the estimated coefficient of bank credit to have a significantly positive relationship with exports size suggesting that access to bank credit is export enhancing in Nigeria. Also, ‘suppliers and customer’ credit which is an alternative source of external credit in the model is defined as the summation of credit from the exporter’s suppliers and customers. Owing to credit market imperfections, financially constrained exporters may resort to ‘suppliers and customer’ credit because of their flexibility in repayment and lower cost of acquisition compared to bank finance and other sources of non-bank credit. These attributes of ‘suppliers and customer’ credit may emanate from the closeness and good interpersonal relationship that often exist between providers of such credit and exporters. It is important to note that ‘suppliers and customer’ credit is often used by SMEs which are often turned down by banks because of their perceived high risk. This implies that SMEs which export may be unable to do so optimally if access to ‘suppliers and customer credit’ is deficient. Based on this discussion, we expect ‘suppliers and customer’ credit to have a significantly positive association with exports size in this study.

Age captures firm experience and a significantly positive or negative relationship is expected between firm age and exports size. On the positive side, Jovanovic (1982) argues that because older firms have more experience and better understanding of the operations of foreign markets relative to their younger counterparts, they tend to export more. Though experience is critical to succeed in both domestic and foreign trade, the latter requires more experience to remain buoyant owing to complexities that are associated with foreign markets in terms of customer taste, and increased competition, among others. It is argued that these characteristics of overseas markets may be better understood and efficiently handled with increased experience in the field,

which is often largely dependent on the number of years the firm has been in business. On the negative side, Astarloa et al. (2012) argue that some firms are specifically established to export right from the outset. An implication is that the benchmark thinking that the ability of firms to succeed in international market is largely based on the enormous experience gained domestically over the years with regard to the operations of the industry may not always apply. The authors remark that these ‘born-to-export firms’ often adopt the strategy of entering the foreign market right from their establishment because they are either established to do so or by their characteristics have no or little domestic demand for their products and thus are compelled to focus on the international market.

With respect to power, Lean and Smyth (2010) show that consistent power supply is crucial to foster production, processing and other export-related activities, which suggests that challenges in electricity generation and distribution may endanger the flow of exports. Based on this argument, we hypothesise a significantly negative relationship between exports size and monthly power outages.

Customs processing time is the processing time at the port before goods are exported out of the country. Hummels (2001) and Wilson, Mann and Otsuki (2005) observe that long delays in export processing owing to inefficiencies in customs administration and other forms of time-related impediments may constitute significant trade cost and serve as a disincentive to efficient and consistent international trade flow. *A priori*, we therefore expect a significantly negative association between exports size and customs processing time, signalling a fall in magnitude of exports when customs processing time rises.

We also include ownership as a control variable. Kneller and Pisu (2007) argue that foreign-owned firms may export more relative to their domestic counterparts because of their affiliation with their foreign counterparts, which make certain resources easily available to them. These resources may include already established access to foreign distribution channels, advanced technology and cheap capital among others. As a result of this, we expect a significantly positive association between exports size and ownership in this study.

With respect to labour productivity, Melitz (2003) and Berman and Héricourt (2010) show that increased productivity is vital for firms' exports as firms ought to meet a certain threshold of productivity that satisfies domestic consumption before exporting the surplus. However, recent papers including Manova (2013) note that increased productivity may have nothing to do with exports as some less productive firms export also while their more productive counterparts do not. Despite this theoretical controversy in the literature, this study supports the view of Melitz (2003) and Berman and Héricourt (2010). Consequently, we expect productivity to positively and significantly drive exports size in this study.

Finally, firm size captures the effect of plant capacity. Roberts and Tybout (1997) and Carpenter and Petersen (2002) argue that larger firms tend to benefit from economies of large-scale production as they produce at lower cost. This suggests that exporters who produce on a large scale may be more competitive in overseas markets which encourage them to export more. Contrary to this view, a recent work by Astarloa et al. (2012) suggests that smaller firms may also drive up exports significantly depending on what they are set up to do. The authors argue that some firms are 'born-to-export' right from their establishment in order to create jobs, increase foreign revenue and promote economic performance. Thus, though most of these firms may be small²⁹ at inception, policy and or poor domestic demand for their products may necessitate them to focus on foreign market. Based on these divergent views, we expect either a significantly positive or a negative association between firm size and exports in this study.

4.4.4 Estimation technique

The study employs instrumental³⁰ variable estimation procedure via two-stage least squares (2SLS) to estimate the model. We also use an alternative estimator called Limited Information Maximum Likelihood (LIML) for robustness. This estimator performs better than 2SLS when the sample size is small and also when the excluded instruments are weak. Thus the choice of this alternative estimator is justified given the small sample size of the study. The study uses STATA version 12 for all data management and estimation purposes.

²⁹It is standard thinking to assume that at inception most firms are small (in terms of total assets); with the possibility of becoming big with time as productivity and sales improve.

³⁰"FinStatement" is used as instrument in this study and it is defined as whether a firm's financial statement has been externally audited in the last financial year.

4.4.5 Identification issues and post-estimation tests

In the empirical model, bank credit has the possibility of being endogenous to exports size. In such a circumstance, an IV is required to address the problem. This instrument must be relevant (that is, strongly correlated with the endogenous regressor) and valid (that is, uncorrelated with the regression error term). Instrument validity also means that the instrument must not be correlated with any unobserved factors that influence the dependent variable. This implies that the instrument must not affect the explained variable directly. However, instrument validity cannot be determined practically when an empirical model is just-identified³¹ (exactly-identified) and in such circumstances validity is proven based on persuasive argument (Cameron & Trivedi, 2009). In practice, finding an instrument which is both relevant and valid is difficult. In this study, we use 'FinStatement' (whether the firm's financial statement has been externally audited within the last accounting period) as instrument to control for use of bank credit. Our choice of this instrument is premised on the fact that firms that are externally audited stand a better chance of being considered for more credit than those that are not. This implies that our instrument is likely to be highly correlated with our endogenous regressor. It is essential to note that in the credit market, the borrower's capacity to repay is the most important factor that influences whether their credit applications will be considered. It is also reasonable to argue that this instrument is not likely to affect firms' exports size directly.

In testing for endogeneity in the study, the regression-based test of exogeneity shown in Table 4.4 in the Appendix rejects at 10% the null hypothesis that bank credit is exogenous suggesting that the variable is indeed endogenous. For the instrument's strength, the study compares the F-value in the first-stage regression of the model with Staiger and Stock's (1997) rule of thumb of $F\text{-statistic} > 10$ being enough to rule out issues of weak instrument. In this study, the F-value is 15.69 and significant at 1%, which is $>$ Staiger and Stock's rule of thumb of 10 implying that the instrument is strong. Table 4.5 in the Appendix shows this result.

The study also uses Cragg-Donald's (1993) and Stock and Yogo's (2005) critical values as a further check on the instrument's strength. The Stock and Yogo (2005) critical values

³¹A model is just-identified when the number of excluded instruments is equal to the number of suspected endogenous regressors.

demonstrate ‘2SLS size of nominal 5% Wald test’ and ‘LIML size of nominal 5% Wald test’ at rejection rates of 10%, 15%, 20% and 25%. Their table also reports ‘2SLS relative bias’ at rejection rates of 5%, 10%, 20% and 30% under the joint scheme where two instruments are employed. In using this method, concerns about weak instrument can be ignored if the Cragg-Donald F-statistic is $>$ a critical value of any of the schemes at the researcher’s choice of rejection rate. In this study, the Cragg-Donald F-statistic is 47.84, while the ‘2SLS size of nominal 5% Wald test’ and ‘LIML size of nominal 5% Wald test’ stands at 16.38 at 10%, confirming the earlier test that the instrument is strong. Table 4.6 in the Appendix presents this result. The study, however, does not test whether the instrument is uncorrelated with the regression error term because the empirical model is exactly-identified and in such a case, such a test is impracticable, but rather a persuasive argument is resorted to (Cameron and Trivedi, 2009). As a result, the study argues that ‘whether a firm’s financial statement is externally audited’ within the last financial year is not correlated with the error term or affects exports size directly. Rather, such a status is used to screen potential loan seekers where firms which were externally audited are given credit to expand their exports since they can repay their loans. It is imperative to note that more profitable firms are more likely to self-select themselves to be externally audited and creditors are not unaware of this.

4.5 Empirical results

4.5.1 Descriptive statistics

The descriptive summary statistics for the explained and explanatory variables are provided in Table 4.2.

Table 4.2 Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Exports Size	375	39.5580	20.4696	1	100
Bank Credit	375	12.5539	14.2887	0	90
Suppliers and Customer Credit	375	17.8310	17.5514	0	100
Firm Age	320	18.1313	13.8513	1	99
Monthly Power Outages	375	3.0668	0.8987	0	7.6009
Customs Processing Time	375	1.0533	0.7639	0	4.2195
Productivity	375	11.7093	1.6202	6.3969	20.0301
Firm Size	375	11.0930	2.7145	2.3026	25.3284
Dummy Variable:					
Ownership:-	Frequency	Percentage			
Foreign	142	37.87			
Domestic	233	62.13			
Total Obs.	375	100			

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

Table 4.2 shows that close to 38% of exporters are foreign-owned, with a mean exports size of about 40% and an average age of 18 years. On average, bank credit represents approximately 13% of total financing of exporting firms and credit from suppliers and advances from customers constitute approximately 18% of total financing. This suggests that exporters in Nigeria use more 'suppliers and customer' credit to finance their exporting activities than credit from bank sources. The study also employs a correlation matrix to check for the level of multicollinearity among the independent variables. The result which is provided in Table 4.7 in the Appendix confirms that multicollinearity may not be a problem in the model.

4.5.2 Regression results

We present the regression results for the effect of external credit (bank credit and 'suppliers and customer' credit) on exports size in Table 4.3. Specifically, we show the 2SLS estimates in model 1 while the LIML estimates are contained in model 2.

Table 4.3 Effect of external credit on exports size

Variable	(1) 2SLS	(2) LIML
Constant	68.9010*** (0.000)	68.9010*** (0.000)
Bank Credit	-0.3069** (0.030)	-0.3069** (0.030)
Supplier and Customer Credit	0.1235* (0.095)	0.1235* (0.095)
Firm Age	-0.1756** (0.033)	-0.1756** (0.033)
Monthly Power Outages	-3.1894*** (0.000)	-3.1894*** (0.000)
Customs Processing Time	-3.8195*** (0.000)	-3.8195*** (0.000)
Ownership	-1.4789 (0.345)	-1.4789 (0.345)
Productivity	0.3501 (0.421)	0.3501 (0.421)
Firm Size	-1.2548*** (0.000)	-1.2548*** (0.000)
Test Statistics		
Observation	320	320
Wald Chi ²	494.75	494.75
Prob>Chi ²	0.0000	0.0000
P-value of regression-based test of endogeneity	0.081	0.081

Note: ***, ** and * show 1%, 5% and 10% significance levels respectively. P-values in parenthesis are based on robust SEs clustered around subsector. The H_0 (null hypothesis) of the regression-based test of endogeneity is that the variable is exogenous.

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

The 2SLS estimates in Table 4.3 shows that six of the independent variables are significant (bank credit, suppliers and customer credit, firm age, monthly power outage, customs processing time and firm size) while two are not (ownership and productivity). Specifically, the table shows that bank credit is significant and negatively related with exports size signifying that bank credit is exports reducing in Nigeria. Furthermore, suppliers and customer credit is significant and positively associated with exports size in the model suggesting that access to suppliers and customer credit is exports enhancing. Table 4.3 also shows that firm age and firm size are significant and inversely related with exports which mean that younger and smaller firms export more in Nigeria relative to their older and bigger counterparts. Finally, monthly power outage and customs processing time both enter the regression significantly negative with exports size

suggesting that reliable monthly power supply and reduced customs processing time promote exports of manufacturing firms in Nigeria. These results are confirmed in our alternative model. The next section discusses the significant results with more focus on the influence of external credit (bank and ‘suppliers and customer’ credit) on exports size, in line with the objective of the study.

4.5.3 Discussion

Contrary to our expectation, the negative relationship between bank credit and exports size as shown in Table 4.3 has an intuitive explanation, namely, a maturity mismatch between export proceeds and repayment of bank credit. Specifically, there is some substantial process and time involved in export activities from origin to destination and finally payment. This process and time lag has a delayed effect on export revenues, a delay which is more suitable for long-term finance. Most bank credits to firms in Nigeria are however short-to-medium term in nature, thus introducing a maturity mismatch between export proceeds and loan repayment. This phenomenon exerts pressure to pay back on bank credit when export revenues (which mature with a longer lag) have not fully been recovered and therefore distorts the ability of exporters to efficiently plan and repay their loans. The situation is worsened further with the high cost of credit in Nigeria. Thus in the presence of these constraints, exporters may be confronted with two choices. First, they may decide to go for the credit facility with its stringent conditions. Second, they may decide to distant themselves from such a loan facility. If the first option is chosen, then the total cost of production will increase rapidly and eventually repress exports size. However, if the second option is desired and no alternative source of finance is used, then total production for exports will plummet and exports size will shrink. This finding provides fresh evidence on how access to bank finance may affect exports size of manufacturing firms. Theoretically, the study contradicts the works of Manova (2008), Manova et al. (2009) and Manova (2013) who highlighted the importance of mere access to external credit (formal credit) in resolving the working capital inadequacies of exporters. Empirically, the finding also disputes the conclusion of Du and Girma (2007), Amiti and Weinstein (2011), Paravisini et al. (2011) and Chor and Manova (2012) who contend that sheer access to finance (formal credit) promotes exports size. The key issue here is that though external credit is useful for exports, its repayment period need to be long-term for this positive effect to be seen. This is a pre-requisite which

earlier researchers did not explicitly mention. It is also worthy to note that the finding controverts the works of Bellone et al. (2010), Berman and Héricourt (2010), Stiebale (2011) and Lancheros and Demirel (2012) who assert that finance plays no role in firms' exports size.

In line with our *a priori* expectation, the significantly positive association between our alternative external finance variable, 'suppliers and customer' credit and exports size as indicated in Table 4.3 implies that exporters with access to these sources of credit in Nigeria export more. It is critical to note that the flexibility in repayment and the cheaper cost of acquiring credit from these sources enable exporters to use more of such credits in financing their working capital gap in Nigeria. The finding may also be attributed to the sound interpersonal relationship between suppliers and customers (as providers of credit) and the exporting firms in Nigeria. In fact, such relationship helps in reducing challenges associated with information asymmetry and encourages creditors to comfortably extend more flexible and cheaper credit to customers. Relative to bank credit, it is imperative to note that the flexibility associated with 'suppliers and customer' credit in meeting the peculiar needs of exporters in Nigeria helps in dealing with the maturity mismatch associated with bank credit. In fact, whereas suppliers and customers are often willing to extend long-term working capital loans to exporters, banks are mostly unprepared to do so. It is therefore vital to recognise that the ability to stay in the export market and increase intensity of participation (size) hinges on access to the appropriate credit to cover the marginal and operational costs (CIF, logistics, etc.) of export intensity. This result confirms the extension of the 'new new trade theory' that embeds external credit (working capital) as an essential driver of export intensity and supports prior empirical works including Du and Girma (2007), Amiti and Weinstein (2011) and Chor and Manova (2012). In spite of this affirmation, it is important to note that these authors predominantly use formal credit (bank sources) in their studies as a measure of external finance whereas the conclusion here is based on the use of 'suppliers and customer' credit (informal sources) as a measure of external finance.

The significantly negative association between firm age and exports size as reported in Table 4.3 affirms the conclusion of Astarloa et al. (2012) who argue that some firms are specifically established to export right from the outset (born-to-export firms). Thus, the standard thinking that the ability of firms to succeed in international markets is largely based on the vast

experience gained domestically over the years with regard to the operations of the industry may not always apply since younger firms are shown to export more than their older counterparts in Nigeria. The finding however contradicts earlier works in the field including Jovanovic (1982) who argues that because older firms have more experience and better understanding of the operations of foreign markets relative to their younger counterparts, they tend to export more.

With regards to monthly power outage, the significantly inverse relationship it has exhibited with exports size in Table 4.3 supports our *a priori* expectation and the finding of earlier researchers including Lean and Smyth (2010) who show that consistent power supply is crucial to promote production of goods and other export-related activities. This suggests that challenges in electricity generation and distribution may endanger the flow of exports and thus exports size.

Also, the significantly negative relationship between unwieldy customs processing time and exports size as shown in Table 4.3 confirms our *a priori* expectation and affirms the finding of previous researchers including Hummels (2001) and Wilson et al. (2005). These authors argue that long delays in export processing due to inefficiencies in customs administration and other forms of time-related impediments may constitute significant trade cost, and serve as a disincentive to efficient and consistent international trade flow.

Finally, the considerably inverse relationship between firm size and exports as revealed in Table 4.3 supports the conclusion of Astarloa et al. (2012) who suggest that smaller firms export more than their larger counterparts particularly if they are set up to export right from inception. The authors argue that these ‘born-to-export’ firms which are mostly SMEs are established through government assistance to create jobs, increase foreign revenue and promote economic performance. In fact, due to policy and sometimes owing to poor domestic demand, these smaller firms tend to concentrate on the foreign market to sell all or most of their products. However, the finding of this present study contradicts those of Roberts and Tybout (1997) and Carpenter and Petersen (2002) who contend that larger firms tend to benefit from economies of large-scale production as they produce at comparatively lower cost. As a result of this, larger firms are more competitive compared to their smaller counterparts, an attribute which encourages the former to produce and export more.

4.6 Conclusion

Using the 2014 World Bank Enterprise Surveys' standardised data for Nigeria and employing 2SLS estimation technique, the study assesses the influence of external credit (bank credit and 'suppliers and customer' credit) on exports size of manufacturing firms in Nigeria. The findings reveal that bank credit has a significantly negative relationship with exports size owing to maturity mismatch between bank loans and export revenue outlays and the high cost of bank credit. However, 'suppliers and customer' credit which is an alternative credit source, significantly increases exports size in Nigeria. This positive role of 'suppliers and customer' credit in exports size may be attributed to its flexibility in repayment and affordability relative to bank credit, thus making it more preferable to exporters. These positive features may emanate from the closeness and good interpersonal relationship between suppliers and customers and exporters. It is essential to note that owing to the considerable time lag between exporters' sales and cash receipts, long-term loans are more suitable to keep exporters afloat. Furthermore, unlike banks, which often turn away exporters when they apply for a loan, or extend it to them at an exorbitant price because of their high perceived risk, 'suppliers and customer' credit is able to assist such exporters financially, making it possible for them to mitigate their marginal and operational costs of trade. It is therefore vital to appreciate that though external credit is essential in promoting exports size, exporters need to be mindful of which source to employ since not all external sources of credit may be helpful.

The findings have important policy implications. First, banks need to be encouraged to put measures in place to foster the design of more suitable financial products that are long-term and or ensure similar maturity between bank credit and exporters' cash receipts. Finally, government may also provide incentives³² to suppliers and customers who advance credit to exporters to encourage them to expand and provide more affordable export credit.

³²A reduction in their tax commitments or credit guarantee schemes may be considered here.

APPENDIX

Table 4.4 Test of endogeneity

Ho: variable is exogenous

Robust regression $F(1, 13) = 3.58885$ ($P = 0.081$)

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

Table 4.5 First-stage regression summary statistics: Post-estimation test (F-test) on the strength of the instrument 'FinStatement'

IV	F(1, 13)	Prob> F
FinStatement	15.69	0.0016

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

Table 4.6 First-stage regression summary statistics: Post-estimation test on the strength of the instrument 'FinStatement'

Variable	R-Sq.	Adjusted R-Sq.	Partial R-Sq.	F (1,147)	Prob> F
Bank	0.2578	0.2387	0.1333	15.6933	0.0016

Cragg-Donald minimum eigenvalue statistic = 47.84

H ₀ = Instruments are weak	Critical values			
	10%	15%	20%	25%
2SLS Size of nominal 5% Wald test	16.38	8.96	6.66	5.53
LIML Size of nominal 5% Wald test	16.38	8.96	6.66	5.53

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

Table 4.7 Correlation matrix

	Exports size	Bank Credit	Supplier and Customer Credit	Firm Age	Monthly Power Outage	Customs Processing Time	Ownership	Productivity	Firm Size
Exports size	1.0000								
Bank Credit	-0.0878	1.0000							
Supplier and Customer Credit	0.1062	0.1808	1.0000						
Firm Age	-0.1684	0.0204	-0.1599	1.0000					
Monthly Power Outage	-0.1288	-0.1140	-0.0827	0.0450	1.0000				
Customs Processing Time	-0.1775	0.2626	0.0539	0.0839	-0.0487	1.0000			
Ownership	-0.0248	0.2399	0.2282	0.0202	-0.1552	0.0377	1.0000		
Productivity	-0.0212	0.0058	-0.1014	0.1339	0.0479	0.0390	-0.0888	1.0000	
Firm Size	-0.1805	0.0059	-0.1459	0.1291	0.0394	-0.0487	-0.1147	0.0990	1.0000

Source: Author's computation based on 2014 World Bank Enterprise Surveys' standardised data for Nigeria

CHAPTER FIVE

FINANCIAL DEVELOPMENT AND EXPORT DIVERSIFICATION IN SUB-SAHARAN AFRICA³³

5.1 Introduction

The importance of finance for trade has long been recognised by several researchers including Kletzer and Bardhan (1987), Baldwin (1989), Demirgüç-Kunt and Maksimovic (1998), Beck (2002), Ju and Wei (2005) and Manova (2013) among others. With regards to scope, the literature in the field is limited and has focused largely on examining the influence of financial development on export volume, export share, trade balance and number of bilateral trade flows (see, Beck, 2002; Berman & Hericourt, 2010; Manova, 2013). Consequently, little is known about how finance may affect other little but equally important areas of trade including the effect of financial development on export diversification which is one of the most critical aspects of trade for developing countries. Basically, export diversification is important because of its capability to reduce the aggregate risk level associated with a country's export basket which is necessary to increase trade receipts and propel economic growth and development (Presbish, 1950; Singer, 1950; Herzer & Nowak-Lehmann, 2006; Hausmann, Hwang, & Rodrik, 2007).

In this study, we examine the influence of financial development on export diversification from a developing country perspective. Specifically, we investigate the effect of private credit on export diversification or concentration in SSA. The paper focuses on SSA because of the region's declining share in world trade compared to other developing regions like Asia, a phenomenon which has largely been attributed to overdependence on a few primary commodity exports (Abdon & Felipe, 2011; Ndikumana, 2015). It is also vital to study this phenomenon in SSA because relative to other developing regions, it is a region where financial access is most lacking (Menyah et al., 2014), a predicament which may have diverted the economic activity of most economies in the region away from the world's average (Aghion, Howitt, & Mayer-Foulkes, 2005).

³³This paper has been presented at the 2017 African Review of Economics and Finance Conference organised at the Ghana Institute of Management and Public Administration, Accra, Ghana from 30-31 August, 2017.

Exploring the link between financial development and export diversification is crucial for two interconnected reasons. First, if we find that financial development has a significantly positive influence on export diversification; then it will underscore the importance of financial sector development for increased export diversification activity and thus increase trade performance in developing countries. Second, in spite of the fact that the constraints facing export processing or manufacturing (which is at the heart of export diversification) in developing economies are hydra-headed, it is often argued that lack of financial access may be one of the most prevalent (Demir & Dahi, 2011; Ndikumana, 2015), a hypothesis which merits further empirical interrogation.

It has been observed that export diversification in SSA requires access to substantial amounts of finance to thrive (Subramanian, 2008; Ndikumana, 2015). Such finance is needed to overcome the huge costs of research and development (R&D), private infrastructural upgrading for product processing or manufacturing, innovation, coordination and also to conquer new export destinations. Thus it is predicted that countries with more developed financial systems will export more diversified products from industries that depend on external finance for exports than their counterparts in poorly developed financial enclaves (Kletzer & Bardhan, 1987; Beck, 2002). It is critical to also note that Ndulu et al. (2007) and Beck, Maimbo, Faye and Triki (2011) blame lack of sustainable economic growth in Africa on the continent's low level of financial development and poor trade performance over the decades.

Three important interrelated benefits of export diversification have been pointed out in the literature. First, export diversification promotes sustainable economic growth through favourable terms of trade. According to Presbish (1950) and Singer (1950), the overdependence of many developing countries on primary commodities for exports may severely reduce their trade receipts and suppress their economic performance if the world market price of such commodities tumbles. The recent fall in the world market price of crude oil and other primary commodities, which has left the economies of many African countries like Nigeria, Angola and Zambia among others struggling is a classic example. In averting this adverse effect, it is imperative to note the critical role of high financial development in capacity building, which is vital in promoting export diversification for sustainable growth and development. Second, Ferreira and Harrison

(2012) note that export diversification dampens the risk associated with export volatility and foreign exchange swings and thus prevents exporter's currency from depreciating. The authors argue that in a diversified export basket, a fall in the price of one commodity can be offset by a rise in the price of another, thus negating the adverse effects of erosion in foreign exchange receipts. To this end, the role of financial sector development cannot be questioned in acquiring new inputs, training facilitation, research and other related activities which are essential in producing and exporting variety of goods. Third, the spill over effects of export diversification like advanced methods of production, labour training, and marketing among others which go a long way to enhance aggregate output and economic growth (Herzer & Nowak-Lehmann, 2006), require better financial systems to thrive owing to the huge costs associated with realising them (Ndikumana, 2015).

The paper contributes to the literature by extending our knowledge on how finance may drive export diversification in SSA, an area which has hitherto been left unexplored. The study achieves this objective by using a panel of 41 SSA countries on which data is available over the period 1995-2013, using 'system GMM' estimation procedure.

The rest of the study is organised as follows: section 5.2 presents the overview of export diversification in SSA. Section 5.3 reviews the extant literature on how financial development may affect trade. Section 5.4 describes the methodology used in the study. Section 5.5 discusses the empirical results. Section 5.6 shows the robustness of the results while section 5.7 concludes the study and offer policy recommendations.

5.2 Overview of export diversification in Sub-Saharan Africa

Ali, Alwang and Siegel (1991) defined export diversification as a change in the structure of an economy's export product mix or an increase in its export destination. Basically, export diversification can be viewed from three perspectives. First, it may be a mere increase in the number of export commodities within the same sector; for example, adding non-traditional primary products to a traditional primary exports basket. Second, it may involve a progression along the value chain of production; for example, a progression from a primary export sector to a secondary export sector. A classic example is the progression from cocoa beans export (primary

sector) to the export of chocolate products (secondary sector). The third dimension of export diversification is an increase in the number of a country's export destinations.

Export diversification has been touted as one of the major economic strategies that may be pursued by developing countries to achieve long-term economic growth (Singer, 1950; Hausmann et al., 2007). The growth and development experience of East Asian economies and others from other developing regions of the world have shown the efficacy of diversifying a country's export base. In SSA, most economies have pursued the idea of export diversification in order to stimulate sound economic growth, which has eluded them for decades. However, though some success has been chalked up, there is still a long way to go to make SSA's export base comparable to other successful developing regions of the world.

SSA is mainly a primary exporter of commodities but also trades some manufactures like motor vehicles, trailers, pharmaceuticals and wood products among others. The region's primary export commodities are few (Subramanian, 2008) and can be categorised into three. The first category is agricultural products, which include commodities like cocoa, cotton, coffee, timber, sugar and palm oil among others, with the main exporting countries being Côte d'Ivoire, Ghana, Togo, Mauritius and Ethiopia. The second category is energy products, which is basically crude oil, with the main exporting countries being Nigeria and Angola. The third category of primary export commodities exported by SSA countries is metal. This includes gold, diamond, iron ore, copper and phosphate among others. The main exporting countries include Ghana, South Africa, the Democratic Republic of Congo, Botswana and Zambia. The major destinations of the region's exports include China, India, the United Kingdom, Germany, France and North America.

An examination of SSA's exports show a high level of concentration in primary products (Subramanian, 2008). A major implication of this is the susceptibility of the regions' trade receipts to volatility in world market prices and other external shocks. For example, an adverse movement in the world market price of crude oil will negatively affect the export earnings of economies in the region that export crude, while export receipts of countries that export

agricultural commodities and metals will plummet when the global market prices of those commodities decline.

Despite the concentration of SSA's exports, Brenton, Dihel, Gillson and Hoppe (2011) and Songwe and Winkler (2012) observe that the last decade was a success for the region's exports, with growth rates hovering around 10-20% in most countries till the onset of the 2009 global financial crisis. Nonetheless, the authors were quick to point out that much of this success was influenced by heightened world demand for primary commodities and thus most countries in the region would have struggled if this were not the case. The authors therefore urge member countries in the region to consider expanding their export base so as to derive the optimum from export trade.

To promote export diversification in SSA, some researchers have recently identified some key challenges facing the initiative and call for interventions to address them. The first and foremost is lack of finance, which deters most firms from acquiring the necessary inputs to embark upon effective and efficient export diversification strategy (Subramanian, 2008; Ndikumana, 2015). Second, Ndikumana (2015) notes that SSA needs to attract more foreign direct investment (FDI) in order to achieve a successful export diversification story. This is because of the positive spill over effects like improved production technology, innovation, attitude towards work and new marketing techniques that come with FDI. Third, Brenton et al. (2011) argue that export diversification in SSA may be boosted through the deepening of regional integration using Regional Trade Agreements (RTAs) aimed at reducing tariffs and providing a sound regulatory environment to facilitate easy movement of people, capital and goods.

To conclude, SSA is a primary exporter of commodities. The region is also known for its high concentration on export of primary products. This phenomenon represses sustainable economic growth and development owing to increased risk and unreliable trade receipts. As a result of this, several trade economists have recommended the expansion of SSA's export base. Specifically, they argue that countries in the region need to add more non-traditional exports to their export baskets than they have already done in the past and also consider value-addition to their exports as vital in increasing their trade earnings and economic growth. To achieve these, member

countries need to consider increasing access to credit, which has been the main bane of export growth in SSA over the decades. Currently, SSA lags behind other developing regions like East Asia and Pacific in export expansion and international trade performance.

5.3 Related literature

5.3.1 Theoretical literature

This study derives its theoretical underpinning from Demir and Dahi's (2011) Ricardian trade model which advocates for high financial sector development as a strategy to gain comparative advantage in international trade. This theoretical framework basically shows that countries with better financial systems will have a comparative advantage in the export of processed or manufactured products, while their counterparts with poorer financial systems will rely on the export of primary goods since the former requires higher external finance to thrive. The notion, however, can be traced to earlier theoretical endeavours in the field by Kletzer and Bardhan (1987), Beck (2002) and Beck (2003) who posit that owing to credit market imperfections, high financial development may be a source of comparative advantage to industries³⁴ that rely on external credit to flourish.

Building on the Hecksher-Ohlin-Samuelson (HOS) trade model, Kletzer and Bardhan (1987) were the first to study the savings and credit allocation function of the financial system and report that financial development is crucial for international trade specialisation patterns. Specifically, these researchers use a two-country two-sector open economy where the sectors (an intermediate goods sector and a finished goods sector) differ in their need for finance. They observe that the more financially developed economy exports more of the finished goods (which require more finance to produce) than its less financially developed counterpart.

Beck (2002) and Beck (2003) further build on the theoretical framework of Kletzer and Bardhan (1987), but assume that the sectors have a similar need for finance; however, the manufacturing sector provides increasing returns to scale while the other, the food sector delivers constant returns to scale. With this setup, financial development will shift the incentives of entrepreneurs

³⁴Owing to their huge capital outlays, it has been observed that processing/manufacturing concerns are the main economic activities that depend more on external credit to function.

towards the goods that deliver increasing returns to scale since shareholder value maximisation and the high profit motive of producers remain supreme in business. The authors therefore argue that, all else being equal, countries that have high financial development will have a comparative advantage in the production and export of manufactured products relative to their financially undeveloped counterparts.

Demir and Dahi (2011) build on the above theoretical works and show the association between financial development and overseas trade, using the simple two-country two-sector Ricardian trade model outlined above. The authors relate that as a result of credit market imperfections, lack of access to finance will affect the manufacturing sector more negatively than the primary sector. This is because the primary sector, which requires relatively less finance, can continue to produce with its existing technology, while the manufacturing sector needs access to constant substantial working capital to renew its technology in every period before it can produce. The authors therefore argue that high financial development would therefore give rise to comparative advantage in financial access and a shift from the export of primary commodities to the export of processed or manufactured goods. An important implication of this is that the production and export of processed or manufactured goods may lead to the production and export of variety of products or increased export diversification, an export strategy that most SSA states currently need to stabilise their economies and or increase their trade receipts.

To sum up, the theoretical trade models by Kletzer and Bardhan (1987), Beck (2002), Beck (2003) and Demir and Dahi (2011) all predict that economies that are more financially developed could have comparative advantage in industries (processing and manufacturing concerns) that require higher external finance to flourish. Export commodity diversification is a capital intensive activity and involves introducing new primary commodities and export processing along the value chain of production. Given the huge financial commitment, commodity export expansion activity just like the activities involved in the increasing returns to scale sector mentioned in Demir and Dahi (2011) may not blossom without access to external credit. Based on this observation, this study argues that an economy that is more financially developed may have a comparative advantage in exporting more varied commodities to its trading partners than those from less developed financial systems.

5.3.2 Empirical literature

The empirical literature that examines the role of finance in international trade is vast and can be categorised from diverse perspectives. In this study, we group the literature in the field into the type or level of data that researchers have used in their work. Researchers have explored data at the firm, industry and country levels. We begin our review with firm-level studies which include: Bernard and Jensen (2004), Du and Girma (2007), Muûls (2008) and Berman and Héricourt (2010). This will be followed by industry-level papers including Beck (2003), Svaleryd and Vlachos (2005), Hur, Raj and Riyanto (2006) and Manova (2013). We conclude the section with country-level works including Beck (2002), Svaleryd and Vlachos (2002) and Demir and Dahi (2011).

At the firm level, researchers who study the role of finance in trade mostly focus on how financial access may help firms to overcome the huge sunk and fixed costs of foreign market entry. Indeed, most of these studies find that access to finance is vital in paying for the huge upfront costs of internationalisation and therefore advocate financial development as a means to promoting foreign trade. For example, in examining the drivers of foreign market entry decisions of a US manufacturing plant over the period 1984-1992, Bernard and Jensen (2004) find that the upfront costs of foreign market entry were very high and may deter firms from going abroad. The authors therefore argue that financial development is critical to enable firms to mitigate these costs of internationalisation. Similarly, Du and Girma (2007) examine the relation between export intensity, foreign direct investment (FDI) and bank loans for over 28,000 manufacturing firms in China over the period 1992-2002 and report that bank credit was significant and positively related to export market orientations. The authors therefore note that financial development may enhance exports, at least in the case of China. Also, Muûls (2008) investigates the role of liquidity inadequacies in the exporting decisions and number of export destinations served by Belgian firms over the period 1999-2005 and observes that lower liquidity constraints promote higher export market activities. This finding further buttresses high financial system development for accelerated exporting activity. Contributing to the literature on how finance may influence exports, Berman and Héricourt (2010) examine the influence of financial factors on the probability to export and export share of 5,000 manufacturing firms over the period 1998-2004 in nine developing and emerging countries and find that financial access is essential for

both the entry decision and export share, though it is more important for the former. These authors therefore conclude that financial development is indeed paramount in enhancing firm-level exports as it enables firms to overcome the huge upfront costs of foreign market entry and working capital constraints of exporters.

At the sectoral or industry level, Beck (2003) attempted to answer the empirical question of whether financial development offers a comparative advantage to industries that rely on external credit for exports. Using data for 36 industries from 56 countries, the author finds that financial development positively and significantly drives export shares and trade balances in sectors that depend on external finance. Similarly, Svaleryd and Vlachos (2005) investigate the association between the level of financial development and industrial specialisation of 32 manufacturing industries from 20 Organisation for Economic Cooperation and Development (OECD) countries. The researchers note that causation runs from the level of financial development to industrial specialisation in a manner consistent with the Heckscher-Ohlin-Vanek model implying that increased financial development is vital for increased industrial specialisation and thus exports. Hur et al. (2006) also explore the relationship between international trade, asset tangibility, and financial development of 27 industries from 42 developed and developing countries. The authors find that countries from more developed financial systems are more associated with higher export share and trade balance in sectors that have more intangible assets. This finding partly suggests that high financial development enhances the export share and trade balance of economies and thus should be high on policy makers' agendas. Manova (2013) examines the influence of financial development on international trade by establishing causality via exploring differences in financial development across countries and differences in financial susceptibility across sectors over the period 1985-1995 in 107 countries. The findings of the study show that high financial development is associated with high export levels in financially vulnerable sectors suggesting that high financial development may drive trade.

On countrywide level analyses, Beck (2002) examines the effect of financial development on exports of manufactured goods in a 30-year panel of 65 countries. After accounting for country-specific effects and potential reverse causality, the author relates that financial development has a significantly positive impact on exports share and trade balance of manufactured commodities.

This finding suggests that financial development is vital for increased international trade of nations. However, in a related study, Svaleryd and Vlachos (2002) using panel data over 1966-1994 in more than 80 countries show that international trade and financial development both influence each other suggesting that financial development and liberal trade policies should both be given high attention by policy makers as they endeavour to draw policies for the economic performance of their countries. Contributing to the literature, Demir and Dahi (2011) investigate the influence of financial development on total and high-skill manufactured exports from a South-South and South-North standpoint in 28 developing countries over the period 1978-2005. The authors find that financial sector development has a significantly positive effect on total and high-skill manufactured exports in the South-South trade, but no such evidence was noted in the South-North trade. This finding underscores the importance of financial sector development for trade, at least from a South-South perspective.

In conclusion, the empirical literature that investigates the influence of finance on international trade is huge and can be categorised into firm, industry and macro level studies. Though few of these papers find a bidirectional relationship between finance and international trade, most of them note a unidirectional effect with causation positively and significantly running from finance to trade. This implies that financial sector development is critical in promoting the international trade of nations and thus should be given priority on policy makers' agendas. It is also clear from the literature that in spite of the prevalence of the huge studies that investigate the role of finance in international trade, those that examine the influence of financial sector development on export diversification are rare.

5.4 Methodology

5.4.1 Data

Data for the study are extracted from UNCTAD (2016b) database and two³⁵ sub-databases of the World Bank over the period 1995-2013 on 41 SSA countries³⁶.

³⁵These include the Global Financial Development (2016) and World Development Indicators (2016) databases.

³⁶Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of Congo, Djibouti, Equatorial Guinea, Eritrea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Swaziland, Tanzania, Togo, Uganda and Zimbabwe.

5.4.2 Model specification

The empirical model is focused on examining the effect of financial development on commodity export diversification across countries and over time. We specify a dynamic log linear model, which includes a lagged dependent variable as one of the regressors to account for the adjustment speed and path dependency of exports. The empirical model which is specified below follows the work of Demir and Dahi (2011) and Iwamoto and Nabeshima (2012).

$$\ln Exportcon_{it} = \alpha_1 \ln Exportcon_{it-1} + \alpha_2 \ln PrivateCredit_{it} + \alpha_3 \ln CV_{it} + \mu_i + \lambda_t + \varepsilon_{it} \quad (3)$$

Where $\ln Exportcon$ is log of export concentration and is an indicator of export diversification, $\ln Exportcon_{it-1}$, denotes a one-year lag of log of export concentration, $\ln PrivateCredit$ is log of private credit and represents financial sector development, $\ln CV$, is a set of conditioning variables including log of GDP per capita, log of squared GDP per capita, log of gross fixed capital formation, log of trade openness, one year lag of log of trade openness and a year's lag of log of inflation. $i = 1, \dots, 41$, and $t = 1995, \dots, 2013$ respectively refers to country and time period. Also, μ and λ are country and time-specific effects respectively. ε , is the error term assumed to be independent and identically distributed. The definition and source of variables is provided in Table 5.1. Our choice of control variables is informed by standard trade literature.

Table 5.1 Definition and source of variables

Variable	Definition	Source
Export Concentration	This is Herfindhal-Hirschman Product Index (HHPI) which is a concentration index. The index assesses whether exports of a particular country are concentrated in a few product or otherwise. The index ranges from 0-1 with values towards 0 indicating less concentration or more diversification.	UNCTAD
Private Credit	Ratio of private credit from banks and non-bank financial institutions divided by Gross Domestic Product (GDP) x 100	GFD-World Bank
Liquid Liabilities	Ratio of current liabilities of banks and non-bank financial institutions divided by (GDP) x 100	GFD-World Bank
GDP per capita	GDP converted to international dollars at purchasing power parity divided by total population.	WDI-World Bank
Gross Capital Formation	Gross capital formation as a percentage of GDP.	WDI-World Bank
Trade Openness	Imports plus exports divided by GDP.	UNCTAD
Inflation	Nominal GDP divided by real GDP x 100.	WDI-World Bank

Export diversification is proxied by Herfindhal-Hirschman Product Index (HHPI), which is a concentration index. The index assesses whether the exports of a particular country are concentrated in a few products or otherwise. The number of products which is derived from

Standard International Trade Classification (SITC Revision 3 at three-digit group level) must have export value higher than or equal to USD100, 000.00 to be considered in the computation of the index. The index is normalised to rank between 0-1 with higher values indicating more concentration in fewer products or less diversification. Thus for developing countries that desire to boost economic performance through export diversification, it is imperative for them to work towards achieving a lower value of the index. In spite of its popular appeal in the literature, it is critical to note that a low HHPI index may not necessarily mean a country has a well-diversified export portfolio if the number of products is low: it merely suggests that the country exports comparable values of each product (World Bank, 2014). The index is computed as:

$$H_j = \frac{\sqrt{\sum_{i=1}^n \left(\frac{x_{ij}}{X_j} \right)^2} - \sqrt{1/n}}{1 - \sqrt{1/n}} \quad (2)$$

Where, H_j = country index, x_{ij} = value of exports for country j and product i , $X_j = \sum_{i=1}^n x_{ij}$ and n = number of products

5.4.3 Theoretical underpinning of the model

Private credit is the most widely used measure of financial sector development in the literature since it sufficiently captures most of the mobilised savings that are channeled to the private sector. Liquid liabilities of banks and non-bank financial institutions are also often used as an alternative measure of financial development. It is vital to note that financial market imperfections and financial constraints adversely affect the activities and growth of firms. Several researchers including Fazzari, Hubbard and Petersen (1988), Kashyap, Lamont and Stein (1994), Sharpe (1994) and Bernanke, Gertler and Gilchrist (1996) note that financial market insufficiencies are known to be responsible for a myriad of fluctuations at the firm level including investment, inventories, employment, sales and short-term borrowing. This suggests that firms need access to credit to efficiently avert these challenges and grow. According to Beck (2002) and Demir and Dahi (2011), high financial development increases access to external finance and thus encourages financially constrained firms to intensify their exporting activities.

Specifically, commodity export diversification requires access to external credit to meet investments in R&D, human resource development and infrastructural upgrading among others to flourish since internally generated earnings alone cannot offset these costs. Based on this, we expect a significantly negative relationship between private credit and export concentration in this study suggesting that high financial development may promote export diversification.

GDP per capita is included in the model as a control variable to proxy and account for the level of economic development or income levels. The seminal works of Imbs and Wacziarg (2003) and Cadot, Carrère and Strauss-Kahn (2011) show that the relationship between income and export diversification is non-linear. The authors specifically argue that specialisation follows a U-shaped curve. At lower levels of income, countries tend to specialise, then diversify and re-specialise again at higher income levels. A plausible reason may be the inability of countries to innovate and expand quickly at initial levels of increased income, but are able to do so with time owing to increased economic development or income level and its associated benefits and re-specialise according to their comparative advantages at higher levels of income. Contrary to the above finding, Hausmann et al. (2011) argue that high income countries tend to diversify more than their low income counterparts since they have more resources to do so and that the re-specialisation stage espoused in Imbs and Wacziarg (2003) and Cadot et al. (2011) does not exist. According to Bahar (2016), the nature of the relationship between income and export diversification may be influenced by the type of export data and countries used in the analysis. He argues that when highly disaggregated export data and non-rich resource countries are used, the non-linearity of the relationship is less pronounced than otherwise. Owing to the above discussions, we include the squared log of GDP per capita in the model to capture any possible U-shaped effect. Thus, we expect a significantly positive relationship between GDP per capita and export concentration, but a negative relationship between squared GDP per capita and export concentration in this study since we use aggregated export data and our sample consists mainly of resource-rich countries.

Gross capital formation is included in the model to control for investment effect. Habiyaemye and Ziesemer (2006) and Demir and Dahi (2011) argue that investment in infrastructure including modern technology is critical to significantly drive export activity. On this premise, we

expect a significantly negative relationship between gross capital formation and export concentration in the study implying that an increase in investment in infrastructure may propel export diversification activity.

Trade openness is used to control for the effect of trade reforms on exports in the economies. Such reforms may affect export diversification in diverse ways. According to Baily and Gersbach (1995) and Miller and Upadhyay (2000), trade reforms promote export diversification since they enable local firms to gain access to quality inputs, cheaper and superior technology, and advanced managerial skills which are critical to the success of any export diversification activity. The view of these authors suggests that a current value of trade openness would have significantly negative relationship with export concentration. In contrast, Agosin, Alvarez and Bravo-Ortega (2012) note that in economies where exports are concentrated in primary products, the factor-endowment Heckscher-Ohlin trade model may be more suitable in explaining the possible influence of trade openness on export diversification. The authors argue that in these economies, trade reforms have the possibility of improving the profitability of traditional industries which consequently represses export diversification activity.

In another vein, it is also vital to note that in infrastructure deficient primary commodity export-dependent economies, trade liberalisation policies may not instantaneously promote export diversification owing to the substantial preparation involved between the implementation of such reforms and actual export diversification activity. In these countries, trade reforms may initially increase imports of machinery and other foreign inputs necessary to build capacity before any export diversification activity can take place, as sound infrastructural presence is critical in promoting exports (Shepherd & Wilson, 2009; Portugal-Perez & Wilson, 2012). However, over time, this phenomenon diminishes and gives way to increase export diversification as firms have now become more equipped to embark upon increase production of varied goods for exports. Thus, we include trade openness and its one-year lag in the model to capture any such effects. Based on this, we expect a significantly positive relationship between the current value of trade openness and export concentration and a negative relationship for its one-year lag in this study. Finally, a one-year lag of log of inflation is used in the model to control for the lagging effect of macroeconomic instability which may distort economic activity in the economies.

5.4.4 Estimation technique and identification issues

The dynamic model specification, where a lagged dependent variable is included in the model as an additional regressor raises endogeneity concerns and thus makes it impossible to use the fixed effect estimator precisely in estimating the model since such an attempt introduces ‘Nickell bias’ into the parameter estimates (Nickell, 1981). Furthermore, while employing the standard 2SLS including the Anderson-Hsiao estimator to deal with the problem produces consistent results, it fails to account for all potential orthogonality conditions, thereby estimating the model imprecisely (Arellano and Bond, 1991).

In fixing the problem above, we employ a superior estimator called ‘system GMM³⁷’ which combines a system of equations in differences and levels to estimate the model. This estimator uses lags of the variables themselves as instruments to correct any potential endogeneity issue. Prior researchers including Demir and Dahi (2011) note that ‘system GMM’ is capable of efficiently dealing with any endogeneity problem emanating from the presence of unobserved country-specific effects, reverse causality and simultaneity bias. The estimator is developed by Arellano and Bover (1995) but popularized by Blundell and Bond (1998) and Roodman (2009a) who show that the estimator yields superior results relative to the ‘difference GMM’ estimator developed earlier by Arellano and Bond (1991).

We estimate the model with a full set of time-fixed effects in order to control for any country-specific time-fixed effects (Arellano & Bover, 1995). Since some of the first-differenced instruments that are used for the variables in levels may be correlated with the country-unobserved effects, we employ the instruments only in the differenced equation (Roodman, 2006). We presume that our independent variables are at least weakly exogenous since we used lagged variables as instrument. Also, the study use the closest three lags in instrumenting our GMM-style variable (log of export concentration), while including the other regressors as IV-style variables. According to Roodman (2009b), deeper lags of GMM-style variables are not likely to contain much additional information and thus may not be helpful, especially when the number of groups is small. In estimating the model, we employ the two-step robust estimation

³⁷ Specifically, the study employs the xtabond2 estimator in Stata.

procedure with Windmeijer's (2005) finite-sample correction method that yields asymptotically robust standard errors.

Finally, the consistency of the ‘system GMM’ estimator depends on three important conditions. First, the error term should not exhibit any serial correlation (Arellano & Bond, 1991). Second, the instruments should be jointly valid (Arellano & Bond, 1991). Third, it is advisable to keep the number of instruments less than or equal to the number of groups (Roodman, 2009b). In this study, the test of serial correlation, which is applied to the differenced residuals and has the null hypothesis of ‘no autocorrelation’, is upheld since the test is unable to reject the null hypothesis. Furthermore, the Sargan and Hansen tests of overidentifying restriction are also unable to reject the null hypothesis of ‘the instruments as a group are exogenous’, which suggests that our instruments are jointly valid. Third, the number of instruments we employ in the estimation is equal to the number of groups, indicating that our Sargan test is not weak. All the test results in Table 5.3 suggest that our findings are consistent and efficient.

5.5 Empirical results

5.5.1 Descriptive statistics

Table 5.2 presents the descriptive statistics of our dependent and independent variables.

Table 5.2 Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Export concentration	779	0.4717	0.2199	0.0886	0.9659
Private credit	779	17.5878	22.0160	0.4128	150.2097
GDP per capita	779	3794.303	6118.811	269.6376	48710.7
Gross capital formation	779	21.4972	17.4659	-2.4244	219.0694
Trade openness	779	58.2869	31.7964	7.6152	236.5595
Inflation	779	25.8678	228.8687	-31.5659	5399.507

Table 5.2 shows a considerable variation in export concentration, ranging from a low of 0.089 to a high of 0.966, with a mean of 0.472 suggesting a wide variation in the export basket of SSA economies. Private credit also shows a significant variation across countries, with a low of 0.413% to a high of 150.2% and a mean of 17.59%. The correlation matrix shown in Table 5.4 in the Appendix indicates that there is a negative and highly significant correlation between private credit and export concentration. This indicates a possible relationship between financial sector

development and export diversification. The table suggests that multicollinearity may not be a problem in the model.

5.5.2 Regression results

We show the regression results for the influence of private sector credit on export concentration in Table 5.3. To begin with, it is important to note that our lagged dependent variable enters the regression significantly positive with its current value or the dependent variable suggesting that export concentration is indeed dynamic which confirms the rationale behind our empirical framework.

Table 5.3 Effect of private sector credit on export concentration

Export concentration	Model 1	Model 2
	Private Credit	Liquid Liabilities
Export concentration_lag1	0.5293** (0.019)	0.5657** (0.014)
Private credit	-0.1545** (0.024)	
Liquid liabilities		-0.1609** (0.038)
GDP per capita	0.0109 (0.975)	-0.1011 (0.778)
Squared GDP per capita	0.0033 (0.876)	0.0090 (0.673)
Gross capital formation	-0.0064 (0.845)	-0.0102 (0.749)
Trade openness	0.1186* (0.068)	0.1488** (0.048)
Trade openness_lag1	-0.1058* (0.094)	-0.1229* (0.059)
Inflation_lag1	-0.0095 (0.343)	-0.0009 (0.926)
Constant	-0.3330 (0.805)	0.2990 (0.829)
Number of observation	671	671
No.'s of groups	41	41
No.'s of instruments	41	41
AR1 test (P-value)	0.035	0.031
AR2 test (P-value)	0.309	0.289
Hansen test of OIR	0.531	0.538
Sargan test of OIR	0.155	0.186

Notes: ***, ** and * show 1, 5% and 10% significance levels respectively. P-values in parenthesis are based on Windmeijer's (2005) corrected standard errors. We estimated the model with a full set of time-fixed effects, which are not reported. All variables are in logs. 'OIR' is overidentifying restriction.

Source: Author's computation based on the various databases used

The results in Table 5.3 indicate that private sector credit has a significantly negative association with export concentration suggesting that countries with high levels of financial development have more diversified export baskets in SSA. Also, trade openness enters the regression significantly positive with export concentration; while its one-year lag enters significantly negative implying that trade liberalization policies in SSA initially enhance the import of foreign inputs, a phenomenon which is vital to build domestic capacity for export diversification. The results are confirmed in our alternative model. The next section discusses these results.

5.5.3 Discussion

It is vital to note that access to credit is imperative to enable firms to diversify into the production and export of wide variety of products. The product variety in this case may be an extension in a country's existing primary products to cover non-traditional export commodities or export processing or manufacturing, which simultaneously generates new products and adds value. Particularly, financial access is essential to embark upon R&D into the viability of non-traditional exports, infrastructural upgrading, acquisition of new machinery and other state-of-the-art equipment and other related costs that are incurred in the commodity export diversification process. The finding of this present study confirms our *a priori* expectation and the theory of high financial sector development as a comparative advantage in shifting from exports of primary commodities to the export of processed or manufactured goods as espoused in Demir and Dahi (2011) Ricardian trade model. It is important to note that better financial systems make credit more available to enable a country or firm to build the necessary capacity required to transform from the export of primary goods to the production and export of processed or manufactured goods, since the latter require a higher financial commitment. Our finding supports prior empirical works including Beck (2002) and Demir and Dahi (2011) who argue that high financial sector development is critical for the production and export of wide-range products.

Trade openness enters the regression significantly positive with export concentration, while its one-year lag enters significantly negative. These results confirm our *a priori* expectation and the findings of previous studies including Shepherd and Wilson (2009) and Portugal-Perez and Wilson (2012) who assert that trade liberalisation policies have a lagging effect. It also affirms

earlier work by Agosin et al. (2012) who note that in economies where exports are concentrated in primary products, the factor-endowment Heckscher-Ohlin trade model may be more appropriate in elucidating the influence of trade openness on export diversification. These authors argue that in these economies, trade reforms have the possibility of improving the profitability of traditional industries, which consequently stifles export diversification activity. Our finding however contradicts the conclusion of Baily and Gersbach (1995) and Miller and Upadhyay (2000) who suggest that trade reforms impact export diversification activities instantaneously.

5.6 Robustness test

Using liquid liabilities as an alternative indicator of financial sector development, the results presented in Model 2 of Table 5.3 confirm our finding that financial development promotes export diversification in SSA.

5.7 Conclusion

Within a dynamic framework, this study examines the effect of financial development on the commodity export diversification of 41 SSA countries in a 19-year panel using ‘system GMM’. The results reveal that financial sector development appears to be significant in diversifying a country’s export basket. This finding is consistent with our alternative measure of financial sector development.

To the best of my knowledge, this is the first regional-level study that provides empirical insight into how financial sector development may influence export diversification in SSA using ‘system GMM’. The findings underscore the importance of financial sector development in SSA. Specifically, it is necessary to increase the roll out of financial infrastructure across SSA to widen and deepen the extent of financial access. Finally, government of the various countries in the region must also ensure macroeconomic stability to support financial sector development.

APPENDIX

Table 5.4 Correlation matrix

Variable	Export concentration	Private credit	GDP per capita	Gross capital formation	Trade openness	Inflation
Export concentration	1					
Private credit	-0.5087 (0.0000)	1				
GDP per capita	0.0120 (0.7388)	0.4119 (0.0000)	1			
Gross capital formation	-0.0165 (0.6456)	0.1994 (0.0000)	0.3858 (0.0000)	1		
Trade openness	0.0763 (0.0333)	0.1499 (0.0000)	0.5849 (0.0000)	0.4041 (0.0000)	1	
Inflation	0.1682 (0.0000)	-0.2653 (0.0000)	-0.0196 (0.6112)	-0.0854 (0.0269)	0.0739 (0.055)	1

P-values are reported in parentheses

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This thesis is a compilation of three essays designed to investigate the relationship between financial access and international trade in SSA. The main idea was to find out how access to external credit influences international trade activities in SSA. The study has become necessary because of inconclusiveness in the empirical literature on how financial access affects firms' foreign market entry decisions and exports size, coupled with lack of similar studies in SSA. It is also evident that the literature in the field has focus mainly on formal credit, particularly bank credit in examining the relationship between finance and trade. Additionally, it is observed that the finance-trade literature is also limited in scope as critical and burgeoning issues in the field have been left unexplored. For example, little is known about how financial access may affect export diversification, which is an important area of trade for developing countries among others. Consequently, the thesis firstly examines the association between external credit and export decision and specifically shows how bank credit and non-bank credit influence the exporting probability of manufacturing firms in Nigeria using an IV probit model. Secondly, it also investigates the link between external credit (bank credit and 'suppliers and customer' credit) and exports size of manufacturing firms in Nigeria, also using an IV estimation technique via 2SLS. Thirdly, the thesis further assesses the influence of financial sector development on commodity export diversification in selected SSA countries using the 'system GMM' estimation procedure. Data for the study are drawn from various databases of the World Bank and UNCTAD. It is essential to note that the above estimation techniques employed in the thesis allowed any possible endogeneity problem that may affect the use of credit in the models to be sufficiently dealt with thereby enabling reliable estimates to be reported.

Though the first and second essays focus exclusively on Nigeria, it is argued that they are representative of SSA given the economic size of the country in the region. In fact, after rebasing its GDP, Nigeria surpassed South Africa to become the biggest economy in Africa in 2014 (IMF, 2015). As a result, the level of Nigeria's exporting activities which have implications for SSA's total trade outcome and economic growth and development are of uttermost research significance to trade economists who are currently looking for prudent ways to enhance the region's

economic might. Besides, Nigeria has established numerous export development and promotion institutions compared to most other countries in SSA over the past decades (Markham, 2004), a feature which is likely to make the country's exporting activities more pronounced in the region. Additionally, the first and second essays focus on Nigeria because the 2005 financial sector reform which brought the number of commercial banks from 89 to 21 (UHY, 2015) led to a more consolidated and stronger banking system with increased lending and less non-performing loans (KPMG, 2015) implying an improved access to finance for the country's exporting firms and firms intending to internationalise. As a consequence, this phenomenon may make exporting in Nigeria more obvious relative to other SSA countries most of which have seen financial stagnation over the years. Finally, the essays also focus on Nigeria because it is the most populated country in SSA (Investment climate statement–Nigeria, 2013) suggesting that the accessibility of low-cost labour coupled with the prevalence of the country's other natural resources are more likely to attract several enterprises into the country. To this end, many of these enterprises may be exporters or firms whose business activities would promote exports. The third essay nonetheless focuses on a panel of 41 SSA countries.

The finding of the first essay is presented in Table 3.4. The table reveals that both bank credit and non-bank credit enhance foreign market entry decision in Nigeria. This finding buttresses prior empirical works which find that access to external credit (particularly bank credit) is critical in helping firms to overcome the huge sunk and fixed costs of foreign market entry. The essay contributes uniquely to the literature by empirically showing that in addition to bank credit, access to non-bank credit is also vital in encouraging more firms to go into exporting in SSA.

The result of the second essay is offered in Table 4.3. The table shows that bank credit is exports reducing, whereas 'suppliers and customer' credit, which is an alternative credit source appears to be export promoting. This finding is indicative of the high cost of bank credit and maturity mismatch between bank loans and exporters' economic activity in Nigeria relative to 'suppliers and customer' credit. It is imperative to note that whereas the high cost of bank credit is a disincentive to increased exporting activity owing to the high cost of production, maturity mismatch necessitates exporters to repay loans faster than the maturity of export revenue outlays, thereby creating an incentive for most firms to divert bank loans to domestic production which

has a shorter revenue realisation period. This essay therefore contributes to the finance-trade literature in two distinct ways. First, it demonstrates that ‘suppliers and customer’ credit, which is an alternative credit source to bank finance is vital in promoting exports size in SSA. Second, it suggests that the high cost of credit and short-term loans are not useful in promoting exports size in SSA.

Finally, the study reports the result of the third essay in Table 5.3. The table reveals that countries with high financial sector development export more diversified products. The essay contributes to the literature by being the first regional-level study to empirically show that increased financial sector development can help promote export diversification in SSA. This information is timely, as most SSA states are currently looking for ways to expand their export base in order to stabilise and or increase their export receipts, which is critical for economic growth and development.

6.2 Contributions of the study

The contributions of this study can be summarised in threefold. Firstly, it shows that beyond bank credit, access to non-bank credit is very important in promoting export decision of SMEs in developing countries. Very little is known about the use of bank and non-bank sources of finance in firms’ export decision. Previous studies hardly test for the effect of non-bank credit on export decision. The study therefore presents fresh evidence to show that both forms of credit help to mitigate the huge sunk and fixed costs associated with entering the export market. This new confirmation also explains the apparent but needless inconclusiveness in the empirical literature on how external credit may influence firms’ exports size.

Secondly, the study also reveals that for an exporting SME to increase its exports size and survive in the export market, structured finance in the form of ‘suppliers and customer’ credit is more relevant and serves the cause better than bank credit. Indeed, we find that bank credit is detrimental to the size and survival of SME exports owing to the maturity mismatch between loan repayments and export receipts. We show clearly that the flexibility associated with ‘suppliers and customer’ credit in meeting the peculiar needs of exporters in Nigeria helps in dealing with the maturity mismatch associated with bank credit. In fact, whereas suppliers and

customers are often willing to extend long-term working capital loans to exporters (which is critical in meeting the time their trade receipts will be due), banks are mostly unprepared in doing so. It is critical to note that access to external credit is not only necessary to encourage more firms to overcome the huge sunk and fixed costs of foreign market entry, but it is also vital to maintain the survival of exporters through the provision of their working capital needs. We therefore demonstrate that the ability to stay in the export market and increase intensity of participation (size) hinges on access to the appropriate credit to cover the marginal and operational costs (CIF, logistics, etc.) of export intensity. This fresh evidence also explains the obvious but unnecessary inconclusiveness in the empirical literature on external credit and exports size.

Finally, this study is the first regional-level study that provides empirical insight into how financial sector development may influence export diversification in SSA and reveals that high financial sector development can help SSA countries diversify their export baskets.

6.3 Recommendations

The findings of the study suggest some policy recommendations. Generally, SSA economies need to create an enabling environment that would stimulate an increase in the breadth and depth of financial presence across the countries. Specifically, intervention may be directed at encouraging banks to adopt innovative strategies like branchless banking and mobile banking, which have the potential of increasing financial access without a huge capital outlay for physical infrastructure. Banks may also be encouraged to develop innovative credit facilities for firms that are willing to go into exporting and those already in exporting but have no or low collateral value to secure credit. Such packages should ensure a parallel maturity match between the credit facility and exporters' economic activity through the offering of affordable long-term loans. To minimise cases of bad debt under the scheme, the banks may create a special task force to monitor, advice and redeem such loans when they fall due.

The development of non-bank sources of credit is also vital for increased access to finance to stimulate export activities and drive economic growth and development in SSA. To this end, it is imperative to create an enabling environment using special tax incentives to attract more

entrepreneurs to enter into the non-bank credit lending business. Government may also establish credit guarantee schemes to encourage providers of non-bank credit to extend more credit to exporters and firms willing to enter exporting. Furthermore, owing to their often good interpersonal relationship with the firm, government may also channel export credit through non-bank financial institutions for efficient reallocation and recovery to firms that are engaged in exporting activities. Finally, an appropriate legal framework which promotes effective and efficient contract enforcement is also needed to encourage non-bank credit providers to extend more export credit, since they would thus be assured of prompt and effective judicial decisions when misunderstanding and other non-payment issues arise.

A limitation of this study has been the use of cross-sectional data in investigating the effect of financial access on firms' foreign market entry decision and exports size in the first and second empirical essays respectively. While this may be seen as a limitation, it needs to be added that the available data do not allow rich panel data analysis due to incompleteness in the dataset. Thus, future work should consider using longitudinal data when it becomes richly available. Additionally, future work could also examine the influence of Foreign Direct Investment (FDI) on export diversification in SSA.

REFERENCES

- Abdon, A., & Felipe, J. (2011). *The product space: What does it say about the opportunities for growth and structural transformation of sub-Saharan Africa?* (No. 670). New York, NY.
- Abor, J. Y., Agbloyor, E. K., & Kuipo, R. (2014). Bank finance and export activities of Small and Medium Enterprises. *Review of Development Finance*, 4(2), 97–103.
- Adjasi, C. K. D. (2007). Africa's trade future: Hope or business as usual? *Africagrowth Agenda*.
- Adjasi, C. K. D. (2015). On financing economic activity and development in Africa. Stellenbosch: University of Stellenbosch.
- Adjasi, C. K. D., & Biekpe, N. (2006). Stock market development and economic growth: The case of selected African countries. *African Development Review*, 18(1), 144–161.
- AfDB. (2011). *Comparative study on export policies in Egypt, Morocco, Tunisia and South Korea*. Tunis.
- Aghion, P., Howitt, P., & Mayer-Foulkes, D. (2005). The effect of financial development on convergence: theory and evidence. *Quarterly Journal of Economics*, 120(1), 173–222.
- Agosin, M. R., Alvarez, R., & Bravo-Ortega, C. (2012). Determinants of export diversification around the world: 1962–2000. *The World Economy*, 35(3), 295–315.
- Akerlof, G. (1970). The market for “lemons”: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488–500.
- Ali, R., Alwang, J., & Siegel, P. B. (1991). *Is export Diversification the best way to achieve export growth and stability? A look at three African Countries* (No. 729). Washington DC.
- Amiti, M., & Weinstein, D. (2011). Exports and financial shocks. *Quarterly Journal of Economics*, 126, 1841–1877.
- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data. Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 59, 277–297.
- Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68, 29–51.
- Askenazy, P., Caldera, A., Gaulier, G., & Irac, D. (2011). *Financial constraints and foreign market entries or exits: firm-level evidence from France* (No. 328). France.
- Astarloa, B. D., Eaton, J., Krishna, K., Aw-Roberts, B. Y., Rodríguez-clare, A., & Tybout, J. (2012). *Born-to-export firms: Understanding export growth in Bangladesh* (No. F-3007-

BGD-1). London.

- Auboin, M. (2011). World Trade Organization response to the crisis: A convening power to boost the availability of trade finance. In J. P. Chauffour & M. Malouche (Eds.), *Trade finance during the great trade collapse*. Washington D.C.: World Bank.
- Bahar, D. (2016). *Diversification or specialization: What is the path to growth and development?* The Brookings Institution, Washington DC.
- Baily, M. N., & Gersbach, H. (1995). Efficiency in manufacturing and the need for global competition. *Brookings Papers on Economic Activity*, 307–358.
- Baldwin, R. (1989). Exporting the capital markets: Comparative advantage and capital market imperfections. In D. Audretsch, L. Sleuwaegen, & H. Yamawaki (Eds.), *The convergence of international and domestic markets* (pp. 135–152). Amsterdam: North-Holland.
- Beck, T. (2002). Financial development and international trade: Is there a link? *Journal of International Economics*, 57, 107–131.
- Beck, T. (2003). Financial dependence and international trade. *Review of International Economics*, 11(2), 107–131.
- Beck, T., & Demirgüç-Kunt, A. (2006). Small and Medium-Size Enterprises: Access to finance as a growth constraint. *Journal of Banking and Finance*, 30(11), 2931–43.
- Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2005). Financial and legal constraints to growth: Does firm size matter. *Journal of Finance*, 60(1), 137–77.
- Beck, T., Maimbo, S. M., Faye, I., & Triki, T. (2011). *Financing Africa through the crisis and beyond*. Washington DC.: World Bank.
- Bellone, F., Musso, P., Nesta, L., & Schiavo, S. (2010). Financial constraints and firm export behaviour. *World Economy*, 33(3), 347–373.
- Ben-David, D. (1993). Equalizing exchange: Trade liberalization and income convergence. *Quarterly Journal of Economics*, 108, 653–679.
- Berg, A., & Krueger, A. (2002). Lifting all boats: Why openness helps curb poverty. *Finance and Development*, 39, 16–19.
- Berman, N., & Héricourt, J. (2010). Financial factors and the margins of trade: Evidence from cross-country firm-level data. *Journal of Development Economics*, 93(2), 206–217.
- Bernanke, B., Gertler, M., & Gilchrist, S. (1996). The financial accelerator and the flight to quality. *Review of Economics and Statistics*, 78, 1–15.

- Bernard, A. B., & Jensen, J. B. (2004). Why some firms export. *Review of Economics and Statistics*, 86(2), 561–569.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87, 115–143.
- Bordo, M. D., & Rousseau, P. L. (2012). Historical evidence on the finance-trade-growth nexus. *Journal of Banking and Finance*, 36, 1236–1243.
- Brenton, P., Dihel, N., Gillson, I., & Hoppe, M. (2011). *Regional trade agreements in Sub-Saharan Africa : Supporting export diversification* (No. 15). Washington DC.
- Brush, C., Edelman, L., & Manolova, T. (2002). The impact of resources on small firm internationalization. *Journal of Small Business Strategy*, 13(1), 1–17.
- Cadot, O., Carrère, C., & Strauss-Kahn, V. (2011). Export diversification: What’s behind the hump? *Review of Economics and Statistics*, 93(2), 590–605.
- Cameron, A. C., & Trivedi, P. K. (2009). *Microeconometrics using stata*. Texas: Stata Press.
- Carpenter, R. E., & Petersen, B. (2002). Is the growth of small firms constrained by internal finance? *Review of Economics and Statistics*, 84, 298–309.
- Chaney, T. (2005). Liquidity constrained exporters. *Mimeo, University of Chicago*.
- Chikura, C. (2013). The non-tariff barrier monitoring mechanism. South African Institute of International Affairs and European Center for Development Policy Management.
- Chor, D., & Manova, K. (2012). Off the cliff and back? Credit conditions and international trade during the global financial crisis. *Journal of International Economics*, 87(1), 117–133.
- Contessi, S., & De Nicola, F. (2012). The role of financing in international trade during good times and bad. *The Regional Economist*, pp. 1–6.
- Cragg, J. G., & Donald, S. G. (1993). Testing identifiability and specification in instrumental variable models. *Econometric Theory*, 9, 222–240.
- Das, S., Roberts, M. J., & Tybout, J. R. (2007). Market entry costs, producer heterogeneity, and export dynamics. *Econometrica*, 75(3), 837–873.
- Demir, F., & Dahi, O. S. (2011). Asymmetric effects of financial development on south–south and south–north trade: Panel data evidence from emerging markets. *Journal of Development Economics*, 94, 139–149.
- Demirgüç-Kunt, A., & Maksimovic, V. (1998). Law, finance and firm growth. *Journal of Finance*, 53, 2107–2137.

- Djankov, S., Freund, C., & Pham, C. S. (2010). Trading on time. *The Review of Economics and Statistics*, 92, 166–173.
- Dollar, D. (1992). Outward-oriented developing countries really do grow more rapidly: Evidence from 95 LDCs. *Economic Development and Cultural Change*, 40, 523–544.
- Dollar, D., & Kraay, A. (2001). *Growth is good for the poor* (No. 2587). Washington D.C.
- Du, J., & Girma, S. (2007). Finance and firm export in China. *Kyklos*, 60(1), 37–54.
- EC. (2004). The European Union's Generalised System of Preferences. Brussels: European Commission.
- ECA. (2010). Assessing regional integration in Africa IV: Enhancing Intra-African trade. United Nations Economic Commission for Africa.
- ECA. (2015). Industrializing through trade. Addis Ababa: United Nations Economic Commission for Africa.
- ECA, & AUC. (2013). Making the most of Africa's commodities: Industrializing for growth, jobs and economic transformation. Addis Ababa: United Nations Economic Commission for Africa.
- ECIS. (1977). The Lome convention: A north/south initiative. Washington D.C.: European Community Information Service.
- Fazzari, S. M., Hubbard, R. G., & Petersen, B. C. (1988). Financing constraints and corporate investment. *Brookings Papers on Economic Activity*, 1, 141–206.
- Ferreira, G., & Harrison, R. W. (2012). From coffee beans to microchip: Export diversification and economic growth in Costa Rica. *Journal of Agricultural and Applied Economics*, 44(4), 1–15.
- Foster, V., & Briceño-Garmendia, C. (2010). Africa's infrastructure: A time for transformation. Washington DC: World Bank.
- Funke, N., & Nsouli, S. M. (2003). *The New Partnership for Africa's Development* (No. WP/03/69). Washington D.C.
- Global Financial Development (2016) Global Financial Development, World Bank databank, Washington DC, World Bank
- Greenaway, D., Guariglia, A., & Kneller, R. (2007). Financial factors and exporting decisions. *Journal of International Economics*, 73, 377–395.
- Habiyaremye, A., & Ziesemer, T. (2006). *Absorptive capacity and export diversification in Sub-*

- Saharan African countries* (No. 30). Maastricht.
- Hanouz, M. D., & Ko, C. (2013). Enabling African trade: Findings from the Enabling Trade Index. In M. D. Hanouz & C. Ko (Eds.), *The Africa competitiveness report 2013* (pp. 41–67). Geneva: World Economic Forum.
- Hartzenberg, T. (2011). *Regional integraton in Africa* (Staff Working Paper ERSD-2011-14). Switzerland.
- Hausmann, R., Hidalgo, C. A., Bustos, S. B., Coscia, M., Chung, S., Jiménez, J., Simoes, A., and Yildirim, M. A. (2011). *The atlas of economic complexity: Mapping paths to prosperity*. Cambridge, MA,.
- Hausmann, R., Hwang, J., & Rodrik, D. (2007). What you export matters. *Journal of Economic Growth*, 12(1), 1–25.
- Herzer, D., & Nowak-Lehmann, D. (2006). Export diversification, externalities and growth: Evidence for Chile. In *German Development Economics Conference*. Proceedings of the German Development Economics Conference.
- Hummels, D. (2001). *Time as a trade barrier* (No. 1152). West Lafayette.
- Hur, J., Raj, M., & Riyanto, Y. E. (2006). Finance and trade : A cross-country empirical analysis on the impact of financial development and asset tangibility on international trade. *World Developmentment*, 34(10), 1728–1741.
- Imbs, J., & Wacziarg, R. (2003). Stages of diversification. *American Economic Review*, 1993, 63–86.
- IMF. (2015). *Regional economic outlook: Sub- Saharan Africa*. Washington DC.
- Investment climate statement–Nigeria. (2013). Retrieved from <https://www.state.gov/e/eb/rls/othr/ics/2013/204707.html>
- Iwamoto, M., & Nabeshima, K. (2012). *Can FDI promote export diversification and sophistication of host countries ? Dynamic panel system GMM analysis* (No. 347). Chiba.
- Jovanovic, B. (1982). Selection and evolution of industry. *Econometrica*, 50, 649–70.
- Ju, J., & Wei, S. (2005). *Endowment versus finance: A wooden barrel theory of international trade* (No. 05/123). Washington D.C.
- Kashyap, A., Lamont, O., & Stein, J. (1994). Credit conditions and the cyclical behavior of inventories. *Quarterly Journal of Economics*, 109, 562–592.
- King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *Quarterly*

- Journal of Economics*, 108, 717–737.
- Kletzer, K., & Bardhan, P. (1987). Credit markets and patterns of international trade. *Journal of Development Economics*, 27, 57–70.
- Kneller, R., & Pisu, M. (2007). *Export barriers: What are they and who do they matter to?* (No. 2007/12). Nottingham.
- KPMG. (2015). Banking in sub-Saharan Africa. Africa
- Lancheros, S., & Demirel, P. (2012). Does finance play a role in exporting for service firms? Evidence from India. *World Economy*, 44–60.
- Lean, H. H., & Smyth, R. (2010). Multivariate granger causality between electricity generation, and GDP in Malaysia. *Energy*, 35(9), 3640–3648.
- Levchenko, A. A., Lewis, L. T., & Tesar, L. L. (2010). The collapse of international trade during the 2008–2009 crisis: In search of the smoking gun. *IMF Economic Review*, 58, 214–253.
- Levine, R., Loayza, N., & Beck, T. (2000). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics*, 46, 31–77.
- Lucas, R. E. (2009). Trade and the diffusion of the industrial revolution. *American Economic Journal: Macroeconomics*, 1(1), 1–25.
- Manova, K. (2008). Credit constraints, equity market liberalizations and international trade. *Journal of International Economics*, 76, 33–47.
- Manova, K. (2013). Credit constraints, heterogeneous firms, and international trade. *Review of Economic Studies*, 80, 711–744.
- Manova, K., Wei, S.-J., & Zhang, Z. (2009). *Firm exports and multinational activity under credit constraints* (No. 16905).
- Markham, T. (2004). *A framework of export strategy for the Federal Republic of Nigeria, 2005 - 2010*. Abuja.
- Marwa, N. (2014). Micro, Small and Medium Enterprises' external financing challenges: The role of formal financial institutions and development finance intervention in Tanzania. *International Journal of Trade, Economics and Finance*, 5(3), 230–234.
- Melitz, M. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, 71(6), 1695–1725.
- Mengistae, T., & Pattillo, C. (2002). *Export-orientation and productivity in Sub-Saharan Africa* (No. 02/89). Washington D.C.

- Menyah, K., Nazlioglu, S., & Wolde-Rufael, Y. (2014). Financial development, trade openness and economic growth in African countries: New insights from a panel causality approach. *Economic Modelling*, 37, 386–394.
- Miller, S. M., & Upadhyay, M. (2000). The effects of openness, trade orientation, and human capital on total factor productivity. *Journal of Development Economics*, 63(2), 399–423.
- Muûls, M. (2008). *Exporters and credit constraints: A firm-level approach* (No. 139). Belgium.
- Muûls, M. (2015). Exporters, importers and credit constraints. *Journal of International Economics*, 95, 333–343.
- NBS. (2014). *Nigerian manufacturing sector: Summary Report 2010-2012*. Abuja.
- NBS. (2015). *Foreign trade statistics*. Abuja.
- NBS. (2016). *Foreign trade statistics*. Abuja.
- Ndikumana, L. (2015). Mobilizing African resources for export diversification and development. Lusaka: Afreximbank.
- Ndulu, B., Chakraborti, L., Lijane, L., Ramachandran, V., & Wolgin, J. (2007). *Challenges of African growth: Opportunities, constraints, and strategic directions*. Washington DC.: World Bank.
- Nickell, S. (1981). Biases in dynamic models with fixed effects. *Econometrica*, 49, 1417–1426.
- Nkurunziza, J. D. (2010). The effect of credit on growth and convergence of firm size in Kenyan manufacturing. *Journal of International Trade and Economic Development*, 19(3), 465–94.
- Odedokun, M. (1996). Alternative econometric approaches for analysing the role of the financial sector in economic growth: Time-series evidence from LDCs. *Journal of Development Economics*, 50, 119–146.
- Odhambo, N. M. (2008). Financial depth, savings and economic growth in Kenya: A dynamic causal linkage. *Economic Modelling*, 25, 704–713.
- Ofa, S., Spence, M., Mevel, S., & Karingi, S. (2012). Export diversification and intra-industry trade in Africa. *Paper presented at the African Economic Conference*. Kigali.
- Osuntogun, A., Edordu, C. C., & Oramah, B. O. (1997). *Potentials for diversifying Nigeria's non-oil exports to non-traditional markets* (No. 68). Nairobi.
- Paravisini, D., Rappoport, V., Schnabel, P., & Wolfenson, D. (2011). *Dissecting the effect of credit supply on trade: Evidence from matched credit-export data* (No. 16975).
- Portugal-Perez, A., & Wilson, J. S. (2012). Export performance and trade facilitation reform:

- Hard and soft infrastructure. *World Development*, 40(7), 1295–1307.
- Presbish, R. (1950). *The economic development of Latin America and its principal problems*. New-York: United Nations.
- Rajan, R. G., & Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88, 559–586.
- Ramachandran, V., Gelb, A., & Shah, M. K. (2009). Africa's private sector: What's wrong with the business environment and what to do about it. Washington, DC: Washington, DC: Center for Global Development.
- Roberts, M., & Tybout, J. (1997). An empirical model of sunk costs and the decision to export. *American Economic Review*, 87(4), 545–564.
- Roodman, D. (2006). *How to do xtabond2: An introduction to "Difference" and "System" GMM in stata* (No. 103).
- Roodman, D. (2009a). How to do xtabond2: An introduction to difference and system GMM in stata. *The Stata Journal*, 9(1), 86-136.
- Roodman, D. (2009b). A note on the theme of too many instruments. *Oxford Bulletin of Economics and Statistics*, 71(1), 135–158.
- Rothschild, M., & Stiglitz, J. E. (1976). Equilibrium in competitive insurance markets: An essay on the economics of imperfect information. *Quarterly Journal of Economics*, 90(4), 630–649.
- Rousseau, P. L., & Sylla, R. (2003). Financial systems, economic growth, and globalization. In M. D. Bordo, A. M. Taylor, & J. G. Williamson (Eds.), *Globalization in historical perspective*. Chicago, IL: University of Chicago Press.
- Samuelson, P. A. (1939). The gains from international trade. *Canadian Journal of Economics*, 5(2), 195–205.
- Schmidt-Eisenlohr, T. (2013). Towards a theory of trade finance. *Journal of International Economics*, 91, 96–112.
- Sharpe, S. A. (1994). Financial market imperfections, firm leverage, and the cyclicalities of employment. *American Economic Review*, 84, 1060–1074.
- Shepherd, S. B., & Wilson, J. S. (2009). Trade facilitation in ASEAN member countries: Measuring progress and assessing priorities. *Journal of Asian Economics*, 20, 367–383.
- Singer, H. W. (1950). The distribution of trade between investing and borrowing countries.

- American Economic Review*, 40, 531–548.
- Songwe, V., & Winkler, D. (2012). *Exports and export diversification in Sub-Saharan Africa: A strategy for post-crisis growth* (No. 3). Brookings.
- Staiger, D., & Stock, J. H. (1997). Instrumental variables regression with weak instrument. *Econometrica*, 65(3), 557–586.
- Stiebale, J. (2011). Do financial constraints matter for foreign market entry? A firm-level examination. *World Economy*, 123–153.
- Stiglitz, J., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review*, 71(3), 393–410.
- Stock, J. H., & Yogo, M. (2005). Testing for weak instruments in linear IV regression. In D. W. K. Andrews & J. H. Stock (Eds.), *Identification and inference for econometric models: Essays in honor of Thomas Rothenberg* (pp. 80–108). New York: Cambridge University Press.
- Subramanian, T. C. V. (2008). Promoting export diversification in Africa: Traditional financing techniques and innovative options. Cairo: Afreximbank.
- Svaleryd, H., & Vlachos, J. (2002). Markets for risk and openness to trade: How they are related. *Journal of International Economics*, 57(2), 369–395.
- Svaleryd, H., & Vlachos, J. (2005). Financial markets, the pattern of industrial specialization and comparative advantage: Evidence from OECD countries. *European Economic Review*, 49, 113–144.
- Udombana, N. J. (2004). Back to basics: The ACP-EU Cotonou Trade Agreement and challenges for the African Union. *Texas International Law Journal*, 40(59), 1–112.
- UHY. (2015). Doing business in Nigeria. Lagos.
- UNCTAD. (2016a). *Key statistics and trends in international trade* : Geneva.
- UNCTAD. (2016b). UNCTAD databank. Geneva, UNCTAD.
- UNCTAD. (2017). UNCTAD databank. Geneva, UNCTAD.
- World Bank. (2014). *World Integrated Trade Solution: Online trade outcomes indicators user's manual* (Version 1). Washington D.C.: World Bank.
- World Bank Enterprise Surveys (2014) World Bank Enterprise Surveys, World Bank databank, Washington DC, World Bank

- World Development Indicators (2016) World Development Indicators, World Bank databank, Washington DC, World Bank
- World Development Indicators (2017) World Development Indicators, World Bank databank, Washington DC, World Bank
- Williams, B. R. (2015). *African Growth and Opportunity Act (AGOA): Background and reauthorization*. Washington D.C.
- Wilson, J. S., Mann, C. L., & Otsuki, T. (2005). Assessing the potential benefit of trade facilitation : A global perspective. *World Economy*, 28(6), 841–871.
- Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two step GMM estimators. *Journal of Econometrics*, 126, 25–51.
- Yartey, C., & Adjasi, C. K. D. (2007). *Stock market development in Sub-Saharan Africa: Critical issues and challenges* (No. WP/07/209.). Washington D.C.