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FINANCIAL DEVELOPMENT AND EXPORTS IN GHANA



DECEMBER, 2021

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university elsewhere.

Candidate's Signature:..... Date:.....

Name: Stephen Kester Donkor

Principal Supervisor's Declaration

I hereby declare that the preparation and subsequent presentation of the thesis were supervised according to the guidelines on supervision of thesis laid down by the University of Cape Coast.

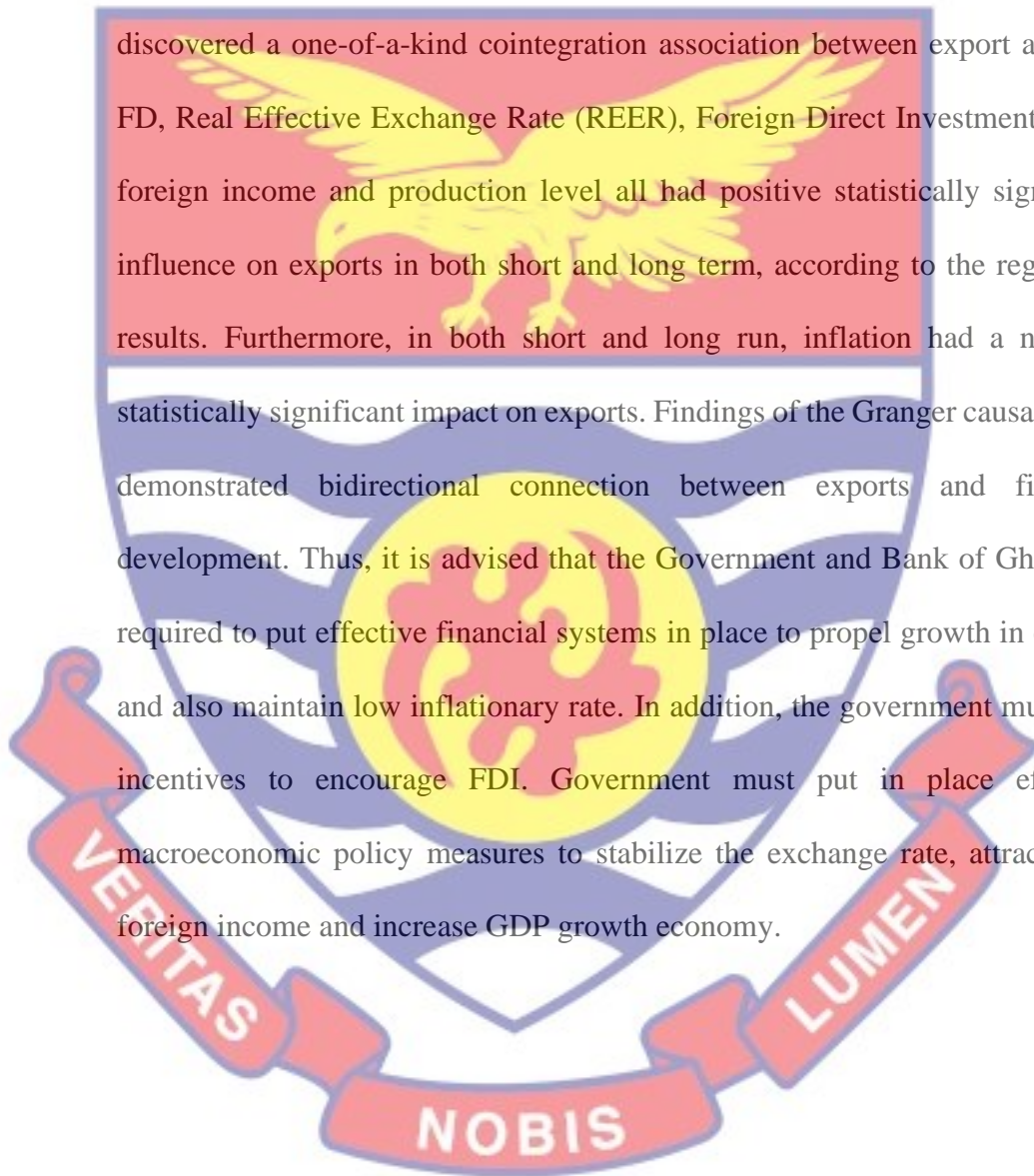
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ABSTRACT

Using quarterly data from 1990 to 2015, this research explores the association between Financial Development (FD) and exports in Ghana using the Autoregressive Distributed Lag (ARDL) technique and the Granger causality test. The causal research design is employed in studying the variables. The study discovered a one-of-a-kind cointegration association between export and FD. FD, Real Effective Exchange Rate (REER), Foreign Direct Investment (FDI), foreign income and production level all had positive statistically significant influence on exports in both short and long term, according to the regression results. Furthermore, in both short and long run, inflation had a negative statistically significant impact on exports. Findings of the Granger causality test demonstrated bidirectional connection between exports and financial development. Thus, it is advised that the Government and Bank of Ghana are required to put effective financial systems in place to propel growth in exports and also maintain low inflationary rate. In addition, the government must give incentives to encourage FDI. Government must put in place effective macroeconomic policy measures to stabilize the exchange rate, attract more foreign income and increase GDP growth economy.



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DEDICATION

To my family and to my friends as well. Special feelings of gratitude to my loving wife, children and parents for their prayers and support.



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LIST OF ACRONYMS

ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterion
ARDL	Autoregressive Distributed Lag
BOG	Bank of Ghana

CUSUM	Cumulative Sum of Recursive Residuals
CUSUMSQ	Cumulative Sum of Squares of Recursive Residuals
DW	Durbin Watson
ECM	Error Correction Model

ECT	Error Correction Term
EDIF	Export Development and Investment Fund
FD	Financial Development
FDI	Foreign Direct Investment
FINC	Foreign Income
GDP	Gross Domestic Product
GEPC	Ghana Export Promotion Council

IMF	International Monetary
INF	Inflation Rate
LX	Log of Exports
REER	Real Effective Exchange Rate

SBC	Schwarz Bayesian Criterion
WDI	World Development Indicator

CHAPTER ONE

INTRODUCTION

Ghana's export value decreased from 15.67 billion dollars in 2019 to 14.47 billion dollars in 2020, (Statista, 2021). There are few studies have been directly concerned about the role of financial development on export performance, and this seems unlike the case of the relationship between financial development and economic growth. In view of this, the researcher wants to investigate the effects of Financial Development on export in Ghana. This part provides an overview of the study, including the background of the study, the problem statement, the goal of the study, the objectives of the study, the hypotheses of the study, the importance of the study, the limits of the study, and the structure of the research.

Background to the Study

The ability of a country to export is critical for its economic growth and development. An increasing number of empirical studies show that financial development is important for lowering companies' borrowing costs (Beck, 2002, 2003; Manova, 2013; Svaleryd & Vlachos, 2005) and promoting quality upgrading (Fan et al., 2015) to enable enterprises to become more successful exporters.

The Monterrey Consensus (2002), in spite of the rise of globalization, observes that several developing countries are becoming increasingly reliant on local funds to achieve their development needs. Local financial institutions in these particular countries are expected to play an essential function in the process development, as financial institutions are widely acknowledged to support economic growth by mobilizing deposits, allocating these assets to the

most productive investments, and allowing the smooth flow of commerce essential in an economy which is largely market-driven. Many economists have developed theoretical models to support this viewpoint. This considerable body of theoretical literature presents persuasive arguments for a well-functioning financial sector's ability to boost export development and, as a result, economic growth in developing countries.

Furthermore, optimal economic performance is dependent on the presence of efficient, supplemented, powerful, and well-managed financial and real sectors. Because these two conditions are both essential and sufficient for an ideal economic system, the failure of one of these two sectors will have a detrimental impact on the functioning of the other portions. Thus, the economic system achieves long-term and stable equilibrium when both of them work under efficient and equilibrium circumstances with their linkages. According to classical economists, the financial sector and the real sector are two economic sectors, and obtaining stronger economic growth in any society need both efficient, complementary, and powerful real and financial sectors (Peetz et. al., 2011). In less developed nations, it appears that the financial sector initially grows, which ends in growth of the economy, and subsequently the function of the financial sector in economic development diminishes as time elapses, with the development of the real sector becoming increasingly essential.

As financial markets evolve, so do the feasibility and investment areas, and the private sector is able to pick a range of acceptable solutions to your demands for savings in low-risk conditions. It can also boost economic growth by mobilizing resources from members' savings funds and directing them toward profitable economic activities with high value added. It is critical to note

that, owing to national variances in financial institutions, a single interpretation of the association between economic growth and FD cannot be provided. Finally, through lowering transaction costs in the economy, the financial sector promotes saving, capital accumulation, technical advancement, and economic expansion. Financial development happens when the financial market's capacity to accomplish these tasks improves decision making for saving and investing, eventually leading to economic growth (Akbarian & Heidari-pour, 2012).

There is a considerable empirical literature conveniently demonstrating the association between growth and finance, as well as another unique literature relating trade and development (Hallaert, 2006; Ang, 2008). This research contends that these two works are connected. It is well documented that exports are one mechanism via which financial development (FD) may support growth. Recent studies on financial development (FD)'s influence on exports confirm this assertion. Financial development promotes industrial expansion, stimulates demand for new infrastructure, and consequently boosts exports (Levine, 2005).

According to international trade theory, economies of scale among nations, technology and variations in factor endowments are the origins of comparative advantage and consequently patterns of trade. Financial growth has lately been suggested as a possible origin of the comparative advantage of a given country, in addition to those conventional elements determining comparative advantage. This idea is based on the work of (Hanif et. al. 2012) and that of Baldwin (1989). The works show that nations with a reasonably properly-developed finance sector have merits, comparatively, in businesses and other sectors that rely more on foreign financing. Consequently, nations with increased levels of economic growth should enjoy higher levels of

international commerce. Beck (2002, 2003), Svaleryd and Vlachos (2005), Hur, Raj, and Riyanto (2006), and Manova (2007) investigated this empirically (2008).

Financial growth has a substantial influence on export quantity and patterns of specialization. Stronger financial institutions enable countries to export more and specialize in more capital-intensive industries. According to Berthou (2010), the true ramifications of finance are often considered to be dictated by the pace of economic expansion. Also, according to the World Business Environment Survey (2000), over half of Senegalese enterprises believe access to capital is a major barrier to exporting, compared to fewer than 4% in the United States.

There are several avenues via which financial progress might lead to a competitive advantage. The first finds its basis in the liquidity constraints that are faced by most institutions. Going by this theory, when a local banking firm is inefficient and weak, institutions in export-oriented industries face considerable liquidity limitations, preventing a subset of productive enterprises from entering the global market (Chaney, 2005). Conversely, Melitz (2008) posits that if companies encounter fewer restrictive credit limitations, as a consequence of changes in the banking sector, investments can consequently grow higher as an aftermath of reduction in variable export costs causing financial institutions with a relatively higher productivity above a particular level then engage in exportation.

As a result, theoretical studies have shown that financial growth should encourage commerce and output. Higher levels of FD put the organization nearer to the cut-off point, thus making entry more possible, more so if there are

relevant favorable conditions on the community financial market (Berthou, 2007). According to Beck (2002), economies of scale may also be a factor in financial development and exporting links.

In comparison to a sector that does not benefit from scale economies, a sector that benefits from scale economies benefits from a higher level of FD.

Nations with more developed financial sectors are net exporters, as they have a competitive edge in high-scalability firms. It is noteworthy also that the exports and financial development theory is highly dependent on the pre-existing circumstances of a given country, such as historical, economic, geographic or cultural peculiarities (Apoteker & Crozet, 2003).

Up until the 1980s, one of the most visible areas of state intervention was the financial sector, this phenomenon existed in both developed and developing countries, with banking firms owned or managed by the ruling government, credit allocation constrained, interest rates subject to ceilings, hinderances to foreign capital flows imposed, entry restrictions and, among other things (Abiad, Mishra, & Topalova, 2014). Providing enterprises with easier access to capital should have encouraged increased value of the incumbent firms' exports as well as entrance as a consequence of increased ability to pay the slated entry cost.

This should have resulted in a significant rise in the number of bilateral economic connections. There is a lot of evidence that exporting companies have a lot of fixed expenses. Identifying viable markets, manufacturing products to meet foreign regulations and tastes, and building marketing and distribution networks are all fixed expenditures for exporters. Such fixed costs are intangible and difficult to measure, have extended gestation periods, and are most likely

firm- or even person-specific. As a result, these fixed expenses are an obvious choice for initiatives which are not easy to externally fund, particularly when finances are undeveloped.

This implies that export performance may be affected by financial development. Aside from the usual trade variables such as size, geography, and wealth, financial development helps explain why some countries perform relatively poorly in trade, such as Austria, Egypt, Greece, and Venezuela, while others perform well, such as Finland, Norway, New Zealand, and Malaysia. The impact is significant: an entire one standard deviation improvement when it comes to our chosen financial indicator, accounting standards, end in a 57% rise in exports.

Financial markets are assumed to be flawless in standard international trade theories. However, in the actual world, financial markets are not frictionless. Financial frictions imply that financial limitations may have an impact on export performance. Exporting is an expensive operation, hence extra funding is required to pay the increased fixed, sunk and variable expenses of exporting according to Manova (2010). According to this particular reasoning, theoretical and empirical investigations reveal that financial possibilities have an impact on comparative advantage and export success (Kletzer & Bardhan, 1987; Beck, 2002, 2003; Hur et al., 2006; AbuAl-Foul & Soliman, 2008; Manova, 2008) despite establishing that a significant body of empirical research demonstrates the influence of domestic financial growth on the export's sectoral composition.

Again, Kletzer and Bardhan (1987) and Beck (2002) argue that when it comes to the context of financial frictions, financial growth is a source of competitive edge over other firms. According to Hur et al. (2006), nations that have properly developed their financial sectors tend to possess larger shares of export and trade balances in industries with a higher proportion of assets which are intangible. Agreeing with the current findings, equity market liberalization, as noted by Manova (2008), disproportionately boosts exports in businesses that rely heavily on external funding and intangible assets. Financial development may be significant due to international capital flows which are not ordinarily directed to the most beneficial purposes when there is an absence of an adequately functioning financial system.

Several developing nations, including Sub-Saharan African countries, have liberalized their financial systems since the mid-1980s. Many of the nations implemented policies directed at reducing levels of financial repression through limiting government engagement in the financial sector in general, mostly through the privatization of state-owned financial firms. These policies were anticipated to encourage development through financial development, such as savings mobilization, an upward adjustment in both domestic and international investments or an overall amelioration in the efficiency of resource allocation (McKinnon & Shaw, 1973; Goodwin, Cobbin & Logan, 1999). Ghana has also experienced a finance sector reorganization process and transformation in compliance with the World Bank and International Monetary Fund's compressive macroeconomic adjustment program (IMF).

Furthermore, the financial sector of Ghana reform commenced in the latter parts of the 1980s with the Financial Sector Adjustment Programme (FINSAP), which included reorganization of the financially troubled banking firms and the clean-up of non-functioning assets in order to reinstate institutions to viability and profitability. This program stabilized prices, began systemic changes such as monetary and fiscal operations, and privatization, particularly bank privatization (Bawumia, 2010). Since 1992, Ghanaian governments have acknowledged the importance of export finance to the health of the Ghanaian economy and have advocated for an export-led growth plan (GEPC).

As a result, the Export Development and Investment Act (2000) was created to offer exporters with better access to export funding. Nonetheless, twelve years later, Ghanaian exporters continue to complain about a shortage of export financing for their enterprises. Since 1992, export-led growth plans have been encouraged with the goal of modernizing Ghana's economy and diversifying it away from traditional cocoa, gold, and timber exports. As posited by Nsiah (2010), following a consistent performance from 1998 to 2000, when sales averaged around US\$400 million per year, the non-traditional exports industry rose at a 14 percent annual rate from 2001 to 2008, reaching US\$1.340 billion in 2008. However, overall non-traditional export revenues in 2009 were US\$1.215 billion, a 9.28 percent decrease from the previous year. This reduction has made the lofty goal of generating US\$5.00 billion in income by 2015 an even more difficult task.

Exporters have blamed the fall on a variety of factors, including a shortage of capital. Globalization has increased competition for export markets, and exporters are searching for any competitive edge that would help them boost

their earnings. As a result, export finance has become a critical component of their operations. The vast majority of small non-traditional export enterprises that were set up in Ghana failed due to a lack of funding as alluded to by the Ghana Export Promotion Council (GEPC).

It has also become vital for the government and other development agencies to implement particular financial, economic, and social policies to encourage export development as a major component of the overall economic and social growth of the country. Given recent advancements in financial and trade theories, it is worthwhile to conduct an enquiry into the relationship between export flows and financial development. The focus of this research is to evaluate experimentally the probable connection between financial development and export flows. It specifically aims to examine how influential financial growth or developments have impacted Ghana's export flows while adjusting for other variables influencing exports.

Statement of the Problem

Financial institutions and markets play a vital part in the performance during economy of a given country or state especially through the allocation of funds to various sectors of the economy. Empirical studies which have been done suggest that well-functioning and vibrant financial sector promote exports and consequently long run economic growth (Beck, 2003; Levine & Loayza, 2000; Hur et al., 2006). However, the paramount issue remains whether financial development is a conduit for export growth and long run economic growth, why are so many developing countries still financially under-developed?

Thus, exports contribute tremendously to the growth of most economies of which Ghana is no exception through foreign exchange earnings (He, Q, 2012; Hur et al., 2006). Despite the enormous performance of the export sectors of some Africa countries, others still experience low export growth due credit constraints fueled by the under-development of their financial sectors. Another interesting question remains, why are some countries still experience low export growth and others have high export growth? In Ghana, just a few empirical researches have been able to show the link between financial development and exports.

Again, these few empirical studies were done at different part of the world (Manova, 2005; Hur et al., 2006; Becker & Greenberg, 2003) whose findings cannot be directly applied to Ghana. This is because the findings may not adequately reflect the available data on Ghana's financial sector and export analysis due to socioeconomic differences among countries. Resultantly, this study will contribute to the literature while also serving as a reference for policymakers, as empirical studies focusing on the macro level in this particular sector in Ghana are few.

Also, a study conducted by Akoto and Adjasii (2020) to examine the effect of financial sector development on export diversification of 41 Sub-Saharan African countries using the data from 1995- 2013 reported that it is necessary to increase the roll out of financial infrastructure across Sub-Saharan African to widen the extent of financial access. The study further indicated that government should ensure macroeconomic stability to support financial sector development in the various Sub-Saharan African countries.

Research that highlights the place of financial development in export growth will have policy consequences and will impact future policy-oriented research. The importance that policymakers and advisers have on modifying financial sector rules will heavily be dependent on information concerning the impact of FD on exports. Furthermore, compelling proof that the financial sector fosters long term export growth will emphasize the crucial need for greater research on financial development's political, legal, regulatory, and policy components.

Despite Ghana's relatively underdeveloped financial industry, the number of intermediaries and their scope of operations have expanded, most noticeably in banking, capital and equity markets, insurance, and micro financing (Takyi, 2012). However, it still needs to be investigated in its relationship with the country's export growth. Exports in the country have grown slowly over the last fifty years even though it is still succeeding in its attempts to quicken the growth of the international trade through the help of Export Development and Investment Fund (EDIF) and Ghana Export Promotion Council (GEPC).

Based on the brief overview of the country's external sector from 2003 to 2007, Ghana's trade and current account deficits worsened in 2004 and 2005, putting a damper on GDP growth. The trade imbalance increased from 10.3% of GDP in 2003 to 17.1% in 2004 and was predicted to be 20.6 percent in 2005. Total imports increased by 32.9 percent in 2004 and another 31.9 percent in 2005, owing primarily to higher crude oil costs. Export profits (also in dollar terms) climbed at a slower rate of 8.7% in 2004 and were expected to rise by

4% in 2005, owing mostly to growth in the main conventional exports (cocoa, gold and timber products).

As previously stated, there has been minimal progress in export diversification. As a result, exports were expected to stall, contributing to the trade imbalance worsening in 2006 and 2007. (African Economic Outlook,

2006). The study tries to analyze the connections that may exist between financial growth and exports in Ghana based on the picture painted above.

Purpose of the Study

The paramount aim of the study was to assess the relationship between financial development and exports in Ghana.

Research Objectives

Particularly, this study sought to:

1. establish the long run effect of financial development on exports.
2. investigate the short run effect of financial development on exports.
3. determine the direction of causality between financial development and exports.

Hypotheses

This study was able to test three hypotheses

1. H_0 : There is no significant long run relationship between financial development and exports.

H_1 : There is a significant long run relationship between financial development and exports.

2. H_0 : There is no significant short run relationship between financial development and exports.

H_1 : There is a significant short run relationship between financial development and exports.

3. H_0 : There is no direction of causality between financial development and exports.

H_1 : There is direction causality between financial development and exports.

Significance of the Study

The current research is motivated by the premise that even though our financial sector is not well developed, it is still an alternative for external finance and essential for savings mobilization for investment to achieve long run growth. Policy-makers certainly acknowledge the contribution of financial development in achieving economic development. For this to be enhanced further, it is important to design policies that will promote financial development in Ghana. Again, the exports of the country have been increasing over the years and have impacted the advancement of the economy. It is vital important that, a thorough awareness of the link or connection between financial development and exports will allow for policies to better develop our financial sector in order that the export-oriented sectors of the economy received available funds. The Ghanaian financial system has been profoundly transformed since the joint IMF-World Bank Financial Sector Assessment Program (FSAP) assessment in 2000 (and its update in 2003).

Policies that would ensure better development of the country's financial are crucial. There have been interventions in the export sector of the country to develop and promote our exports such as the EDIF and GEPC. However, there is more to be done promote and develop sectors of the country. This is by way of efficiently and effectively developing our financial system to be able to pool

together savings for investment and consequently growth of our exports. Thus, the current study will add to the existing knowledge by way of empirically examining the response of the country's exports to the financial sector development. This will to a larger extent allow for policy recommendations for the better development of the sector of finance.

This study will also allow us to identify the existing policies of the government that are affecting the financial sector and exports. This will allow the government to undertake the necessary policy reforms required for national development. Again, the study's findings will allow for policies to streamline regulations and capacity building in the sector of finance.

Delimitations

This study sought to research into the connections between FD and exports in Ghana employing the aid of yearly time series data set for the 1990 to 2015 time period. This research used the Auto Regressive Distributed Lag (ARDL) in studying this relationship. Also, the study will employ seven variables-ratio of exports to GDP as a proxy for exports, ratio of private sector credit to GDP as a proxy for FD, US real GDP as a proxy for foreign income, REER, GDP as a proxy for output level, and inflation.

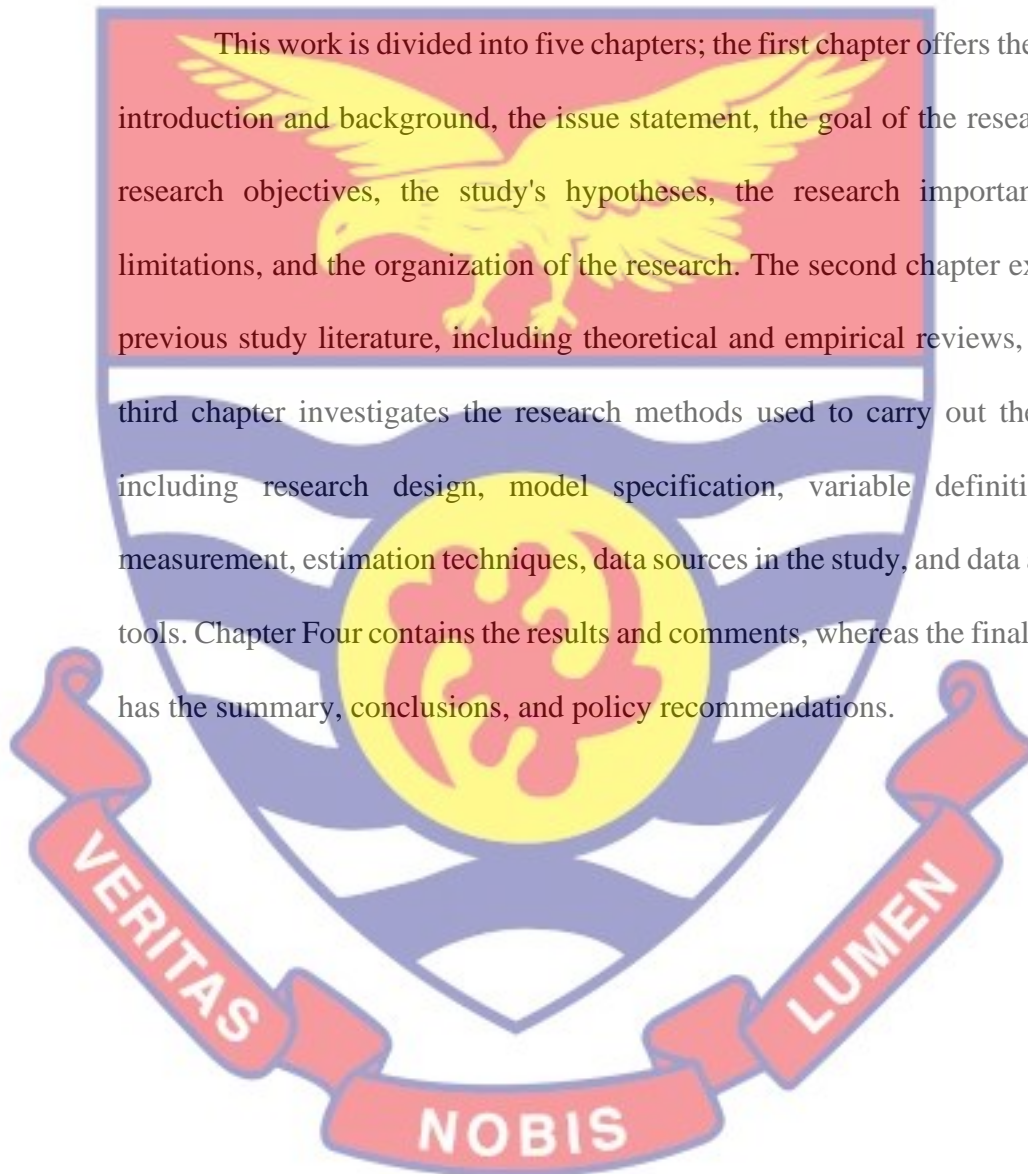
Limitations

The primary limitations identified in this study are linked to data availability. From 1990 to 2015, the study employed a smaller sample size due to an absence of data points for all variables included in the analysis. Furthermore, a sectoral and regional analysis was required to effectively analyze the impact of FD on exports, taking into account the distribution and, as a result, the contribution of financial development to specific sectors and components of

the exports sector, as well as the Ghanaian economy's regions. This, in turn had the tendency of permitting the development of particular initiatives to solve defects in the sectors. Although, due to a lack of such data, as well as data on other aspects, this sort of research was ruled out.

Organization of the Study

This work is divided into five chapters; the first chapter offers the study's introduction and background, the issue statement, the goal of the research, the research objectives, the study's hypotheses, the research importance, the limitations, and the organization of the research. The second chapter examines previous study literature, including theoretical and empirical reviews, and the third chapter investigates the research methods used to carry out the study, including research design, model specification, variable definition and measurement, estimation techniques, data sources in the study, and data analysis tools. Chapter Four contains the results and comments, whereas the final chapter has the summary, conclusions, and policy recommendations.



CHAPTER TWO

LITERATURE REVIEW

Introduction

This section examines theoretical and empirical research on financial development and exports. It is separated into 2 sections with the first section giving an overview of the financial system in Ghana, and the second presenting an empirical studies' review of researches conducted to assess the influence, if any, that financial development has on exports, and the third presents a review of empirical research conducted to evaluate the relationship between financial development and exports.

Theoretical Review

Theories on financial development

Many theories of financial development have been considered by many researchers. However, for the purpose of this study, McKinnon and Shaw (1973) theory will be considered. This is because of its relevance to the study. According to McKinnon and Shaw, government constraints on financial system operations like the interest rate ceilings, directed credit policies, and high reserve requirements may impede financial deepening. As a result, the quality and quantity of investments may suffer, resulting in a negative impact on economic development. As a result, the McKinnon-Shaw financial repression paradigm argues that a badly functioning financial system can stifle a country's export and economic growth.

Going by the hypotheses of McKinnon and Shaw (1973), financial development would result in higher levels of investment and export growth because resources would be channeled towards funding more productive

ventures. McKinnon (1973) and Shaw (1973) coincidentally raised arguments against policies of financial repression. They emphasized the role of the financial sector in increasing the volume of savings by creating appropriate incentives. In order to reach higher savings and investment rates, they recommended governments to abolish interest rate ceilings and advised them to

give up raising seignories through inflationary monetary policies. As a result, real interest rates should rise to market clearing values, thus raising increased savings. An important feature of the McKinnon-Shaw models is that they explain only temporarily higher growth rates. Many governments in developing countries followed their policy advice and achieved significant accelerations in growth rates, but sometimes also excessively high and volatile real interest rates. According to this viewpoint, an increase in real interest rates during the financial liberalization process should promote saving while also increasing the amount of credit available to companies. As a result, a greater volume of investment may be financed; moreover, through easy access to credit, previously rationed high-return initiatives can compete for funding, adding to economic productivity and growth.

Clearly, Ghana's financial liberalization approach has resulted in some modification of the overall financial system. In terms of the openness of financial market institutions and the availability of financial instruments for private sector investments, the process has also had an impact on the climate in which enterprises in the manufacturing (especially export) sector operate. Consequently, efficient financial markets are critical components when it comes to the development of industry and this makes a favorable impact on a country's export growth. The hypothesis asserts that an increase in real interest rates

during the financial liberalization process should promote saving while also increasing the amount of credit available to companies. As a result, a greater volume of investment may be financed; moreover, through easy access to credit, previously rationed high-return initiatives can compete for funding, adding to economic productivity and growth thereby increasing the financial base of firms as well as the economy of Ghana. This implies that the firms can expand their base good financial standing to increase productivity of export products. The theory will be applied to the area of the study to determine the extent to which the financial development affects country's export.

Trade theory

The classical Ricardian model is frequently alluded to when describing the comparative cost advantage principle, which is relevant to our study. Ricardo demonstrated that each country has a comparable in an item or service that it can provide at a cheaper (opportunity) cost than any other. As a consequence, output is maximized when each country focuses on the good or service that it will be able to produce at the cheapest cost, i.e., the one in which it has a comparative advantage. Because specialization in an item or service with a comparative advantage boosts output, trade may benefit every country by increasing welfare. Relative labor productivities, according to the traditional Ricardian theory of comparative advantage, affect trade patterns and hence play a critical role in international economics (Golub & Chang-Tei, 2000).

Autarky under the Ricardian theory assumes homogenous (homothetic) preferences. Homogenous preferences according Ricardo means that, everybody in a given society has similar preferences. Thus, homogeneous preferences explain why, for a given relative price, the proportion of items

consumed is regardless of income level. Furthermore, the pricing of the commodities produced are determined by labor expenses. This illustrates how, if any price was strictly above its labor costs, we might have limitless profits by extending production of that commodity to an infinite level, assuming a certain pay and fixed input coefficients (Golub & Chang-Tei, 2000). As a result of the

assumption of perfect competition and limitless production levels, the price must be less than or equal to the labor expenses.

The Ricardian paradigm, on the other hand, has been heavily criticized. Leamer and Levinsohn (1996), for example, thought the paradigm was too basic for meaningful empirical examination. They claim that the Ricardian model overlooks all other inputs of production and comes with the overambitious consequence that countries specialize in marketable products. Furthermore, the Ricardian model proposes that nations specialize entirely in the production of trade products, except when a smaller country is unable to meet the demand of a larger country. Practically, however, import-competing sectors seldom vanish when they are faced with foreign competition.

Furthermore, the classical model's focus excludes other crucial factors of comparative advantage, such as capital costs and other intermediate inputs (Golub & Chang-Tei, 2000). The Ricardian model of comparative advantage has been replaced by the neoclassical Heckscher-Ohlin (HO) theory of trade, which focuses on factor endowments (labour, land, physical capital, etc.) to forecast trade flows between nations. International trade covers up for the uneven spatial dispersion of productive resources according to the H-O factor-proportion theory of comparative advantage.

Going further, the classical model's emphasis misses other important comparative advantage considerations, such as capital costs and other intermediate inputs (Golub & Chang-Tei, 2000). The Ricardian model of comparative advantage has been adequately succeeded by the neo - classical Heckscher-Ohlin (HO) theory of trade, which forecasts trade flows between states based on factor endowments (labour, land, physical capital, etc.)

Theories of new trade were created to shed more light on high levels of trade that occur internally within industries as well as the substantial share of global trade that occurs between comparable nations. Krugman (1979) and Ethier (1982) established paradigms within which the foundations of commerce between similar nations is as a result of scale economies, and the much modern economic geography theories integrated trade costs with economies of scale to illustrate the clustering of enterprises in one area (Krugman, 1991). In addition to the focus on comparative advantage that classic trade theory relies on, contemporary trade theories emphasize the significance of market access as a predictor of industrial structure. This theory will be relevant to the area of study to determine the exact sector the country needs to channel its financial resources to boost its export base.

The new trade models contain four neoclassical economic innovations: strategic behavior & the modern industrial economics, market defects, new growth theory and political economy arguments. Whereas majority of the work relating trade and new growth theory highly skews towards trade liberalization, primarily on the basis of knowledge spillovers, the potential of free trade is capability of being damaging to economic development is permitted in this study as well. Overall, even those in the vanguard of these theories oppose

interventionist trade policy, citing political economics considerations such like rent seeking (Amiti, 1998).

Export-led growth hypothesis (ELGH)

One key factor of growth, according to the export-led growth theory, is export expansion. As a result of this phenomenon, countries' overall growth cannot be accomplished by just increasing the amount of labor and capital in an economy; increasing exports is also a key aspect. Exports can operate as a growth engine, according to proponents of this phenomenon. The link between development and exports is typically attributed to possible economic benefits from a country's participation in global markets, such as economies of scale, resource reallocation, and various labor training benefits (Madina-Smith, 2001; Agyapong, 2012).

Many supporters of the free trade and export-led approach highlight that that many developing nations, mainly in Latin America, that pursued inward-oriented policies which is conveniently found within the Import Substitution Strategy (ISS), had dismal economic outcomes (Balassa, 1985). Between 1960 and 1990, several of them experienced no gain at all, while real income decreased (Baro & Sala-i Martin, 1995). These contributed to the significant transformation that happened in the trade literature in the 1980s (Madina-Smith, 2001).

According to theoretical and empirical studies, well-functioning financial markets provide competitive advantage, which increases exports. Kletzer and Bardhan (1987) and Beck (2002), on the theoretical side, argue that when faced with financial frictions, financial progress is a source of competitive

advantage. According to Beck (2003), economies that have greater margins of financial development often specialize in foreign funded industries.

Hur et al. (2006) suggests that nations that have their financial markets to be adequately developed have greater trade balances and export shares in industries with a higher proportion of intangible assets. Manova (2008) arriving at similar findings, reveals that exports are boosted in a disproportionate manner during equity market liberalization even further in enterprises that rely largely on external capital and intangible assets. Because foreign capital flows cannot be steered to the most desirable objectives without a well-functioning financial system, FD may be critical. FD is measured as the ratio of individual credit given by deposit money banks and other financial institutions to Gross Domestic Product (Beck et al., 2003). Again, the Export-led growth hypothesis will be relevant to the study area and it will help determine the effect of good financial development on the export.

Conceptual Review

Meaning of financial development (FD)

Financial Development covers policies, variables, and institutions that promote effective financial markets and optimal intermediation (Mutenyo, 2013). The following characteristics are seen in a well-developed financial system: stable monetary arrangements; a variety of banks, some with domestic and others with foreign tendencies, and maybe those with both orientations; a central bank to handle international financial ties and stabilize domestic finances; as well as financial markets which are performing well. The depth, access, scale, soundness, effectiveness, and strength of the financial structure, which comprises its market, intermediaries, and variety of assets, institutions,

and laws, might be used to quantify FD. As a result, FD entails the construction and extension of institutions, tools, and markets which support the investment and growth process.

The performance and operations of financial markets, banks, bond markets, and financial institutions can also be used to assess financial development. A solid financial system provides risk diversification as well as efficient capital allocation. Once in place and operational, such an articulated financial system may mobilize capital domestically, promoting a country's exports, economic growth, and development. Nations which have more advanced financial systems find themselves engaging in more commerce and seem to be more interconnected with other economies.

Determinants of financial development

Institutional Environment- This includes policies, regulations, legislation, and oversight. Countries that have a robust institutional environment that protects investors attain high levels of financial development (Kellermann, 2014).

Business Environment- This includes the availability of competent people, physical and technical infrastructure, and the cost of doing business, all of which contribute to the improvement of financial service quality (Kellermann, 2014).

Financial stability- Financial stability may be defined as the balance between risks and rewards. The stability and soundness of a financial system are critical indicators of financial progress. Financial rules are a critical component in this respect (Čihák, 2007).

Policy- The policy perspective emphasizes the relevance of certain macroeconomic policies, market openness, and financial liberalization in encouraging financial growth. Policy may have a considerable impact on

financial development by acting either on the supply or demand aspect of the equation (Huang, 2010). Some significant national macroeconomic strategies, such as keeping inflation low and increasing investment, have been shown to be beneficial to financial development.

Geography- Countries closer to the equator in Africa often have a more tropical climate. Landlocked, remote from huge markets, or with restricted access to beaches and oceans, navigable rivers are related with financial development. Countries with a closer proximity to the major global market centers obtain a better level of financial growth. Economic expansion is another characteristic regarded a predictor of financial development; as an economy expands, the costs of financial intermediation reduce owing to intense competition, resulting in a bigger scale of money accessible for productive investment (Abuodha, 2009).

Also influencing financial development include income level, population level, religion, language, culture, political rights, and so forth. As a result, financial development encourages investment, responds to any or all changes in a nation's real regions, reduces the cost of searching and marketing, lowers the cost of external finance to firms, and improves successful innovation, thereby accelerating export growth and, as a result, economic growth (Huang, 2010).

Purpose of a financial system

Without a financial system, money mobilization is inefficient owing to market flaws such as the cost of gathering information and ensuring contracts are enforced. A financial system responds to market frictions by (i) appraising investment opportunities and providing corporate governance, and (ii) credit risk analyses and lowering transaction costs (Levine, 1996).

A financial system which is well developed is capable of effectively supplying these financial services to the real economy.

Financial Development is, according to Ali and Hassan (2008), "a measure of the expansion of an economy's financial sector or a measure of the degree of financial intermediation by financial intermediaries in an economy."

FD as defined by Calderon and Liu (2002) "improvement in the number, quality, and efficiency of financial intermediary services." Low transaction costs, a minimal interest rate gap between lending and borrowing rates, low risk, conveniently available services, and a diverse variety of financial products characterize an efficient financial system. A competent accounting system and transparency regulations, fewer government intrusion, greater corporate governance and a strong legal framework all contribute to this efficiency (Gries et al., 2009).

Ghana's exports performance

Ghana is Africa's economic success story. The country's GDP growth rate, in 2011, was as high as (14.4 percent). This development appears to be linked to an increase in exports, a large part of the country's economy (37 percent of GDP) that has developed rapidly during the previous three decades. Ghana's constant attempts to have its economy stabilized and to boost its export industry have resulted in this accomplishment. After 1982, several market-oriented modifications have been instituted. Currency rate realignment and inflation control were two of the most significant macroeconomic developments. Both policies have improved Ghana's export pricing competitiveness, as assessed by the real effective exchange rate.

Ghana's risk exposure may have increased as the country shifted to a more export-oriented, specialized and liberalized economy. Indeed, despite efforts to diversify its export base and improve other sectors of the economy, Ghana continues to be heavily reliant on export profits by way of a small quantity of countries and goods. The key factors of a country's export performance as assessed by changes in export volumes, according to export demand theory, are price competitiveness and foreign income. Unpredictability in currency rates, on the other hand, contributes to revenue uncertainty.

According to the Decision Theory, export enterprises are unlikely to invest in new technologies, diversify production, or expand operations in order to limit losses. If manufacturers are risk-averse and risk management tools are restricted, just like in developing countries, the effect is increased (Hooper and Kohlhagen, 1978). As a result, overall export volumes are likely to take a nose dive down. In this context, the question arises, "Does the influence of currency rates, inflation, and foreign income on Ghana's export performance, and if so, how?" This study sought to investigate the following hypotheses: 1. Ghana's export quantities have not been affected by price competition or foreign income. 2. Exchange rate fluctuations have not impacted Ghana's export quantities.

Empirical Review

Country-level study

Several studies using cross-country aggregate data indicate evidence of favorable benefits of different financial development strategies on exports. It should be noted that financial progress is usually accompanied by an increase in several metrics of financial depth.

Fernando Leibovici (2013) studied the aggregate impacts of financial development on international commerce. To that end, he developed a general equilibrium model of numerous industrial sectors of international commerce in homogeneous companies based on frictions and financial costs of exports. According to the results of this research, financial development has had a substantial influence on international commerce in a variety of industries with varied degrees of reliance on external money.

Becker et al. (2012) concluded, using country-level data, that financial growth enhances exports, particularly in settings with high fixed costs. Furthermore, Becker and Greenberg (2003) discovered that a country with a superior financial system improves exports while conducting cross-country research in their quest to establish a connection between financial development and exports.

Kinder-Begu (2012) assessed the link between FD and industrial products export in a number of nations. The Granger Causality test is utilized in this study to confirm the connection that exists between financial development and industrial products export. In other words, in nations with higher levels of development, the bidirectional correlation between variables of the manufactured products export and financial development is confirmed. Financial progress in emerging nations is mostly attributable to an increase in manufactured goods exports, with no proven two-way link.

Rounsi (2011) evaluated the influence of restricted financial resources to international trade on ten nations' businesses using combined data indicating they had major financial crises and balance of payments trade through time, and financing of their business sector decreased drastically. The findings revealed

that trade finance had a short-term favorable influence on exports and imports. According to the analysis, the decrease in external financial resources explains just a minor portion of the trade downturn. Furthermore, the findings imply that the reduction in funding for domestic banking crises has had a significant impact on overseas commerce.

Demir et al. (2011) find, using factory export data from 28 developing nations from 1978 to 2005, that FD has a favorable and substantial impact on the percentage of total exports and GDP technology in the south. However, no substantial influence of FD on north-south trade has been identified, indicating that FD has asymmetric impact on international trade.

Mostova (2009), like earlier authors, reveals a considerable positive connection between financial growth and international trade structure for 10 transition economies. Furthermore, she demonstrates that a high degree of inflation has a detrimental influence on the share of industries that are financially reliant in multinational trade performance.

Muuls (2008) and Berman and Hericourt (2008) discovered a mismatch between the productivity of a firm and their status of export using a comprehensive cross-country company-level database in emerging and developing countries. According to their findings, when a country's financial growth improves, the number of exporters grows, and this has an influence on exporter selection by balancing the disparity. Their findings concur with the proposition that FD has an impact on patterns of export and that countries with greater financial development levels should have a greater competitive edge.

Monova (2008) created a model that included credit-constrained heterogeneous enterprises, nations at various stages of financial development, and sectors with differing financial risk. She demonstrates that as nations become exporters, they are more inclined to export bilaterally and ship larger amounts. She discovered consistent, systematic disparities in export involvement, quantities, product diversity, product turnover, and trade partners among nations with varying degrees of financial growth and among industries with varied levels of financial risk.

According to Kletze and Bardhan (2006), a well-developed financial industry can aid a nation gain a competitive edge in enterprises that rely on foreign capital. Following empirical enquiries, the causal chain has been believed to extend from FD to commerce (Beck, 2002, 2003; Hur, Raj & Riyanto, 2006; Huang & Temple, 2005; Svaleryd & Valchos, 2002). That notwithstanding, there is a potential that financial growth will be driven by trade, or that a third factor [like that of an anti- or pro-market government policies] will promote both trade and financial development. Demand drives the link between commerce and financial development, according to Beck (2003) and Huang and Temple (2005). To put it another way, nations with specialized industries in scale economies are likely to seek outside capital, hence promoting financial growth.

Manova (2006) develops a paradigm based on heterogeneous credit-constrained enterprises in a range of financially fragile industries at varying stages of financial growth. She says that the higher the financial development of an exporter, the lower its trading partners' minimum GDP and the more countries it sells to. The resulting ramifications are particularly severe in

financially distressed sectors. Many of the author's points are similar to those made by Rajan and Zingales (1998), as they emphasize the need of financial sector expansion for the success of export. Financially adept nations export substantially more in businesses that rely on external financing and in sectors with fewer collateralizable (physical) assets as they export a wider range of goods, according to the estimates.

Examining OECD nations, according to Svaleryd and Vlachos (2005), nations with financial sectors that perform optimally tend to concentrate on businesses that are heavily reliant on financial sector services. They contend that disparities in FD have a greater impact on OECD nations' specialization patterns than differences in human capital. In confirmation of this theory, the researchers assess the importance of relationships between financial intensity (dependence) and FD indices.

The consequence of financial growth on trade balance structure are studied by Beck (2002). The goal of this study is to develop and evaluate a theoretical paradigm in which trade balance is influenced by the level of external funding across industries. A thirty-year panel of sixty-five nations is employed for empirical analysis. According to the findings, the larger a country's level of FD, the greater its GDP and share of total merchandise exports, and the higher its trade balance in produced goods.

Sackey (2001) and Bhattarai & Armah (2001) investigated the export demand of Ghana. They made use of the cointegration techniques to show that a long-run equilibrium exists between exports and their determinants. In another perspective, Sackey (2001) observed a positive correlation between export performance and foreign income. Bhattarai & Armah (2005), however, reported

a negative correlation (however insignificant). According to both evaluations, Ghana's currency depreciation improved the country's export performance.

Industry-level study

A modest but expanding literature on finance and commerce has also discovered intriguing evidence of an extra comparative advantage channel depending on financial development level. A number of studies, in particular, have claimed that countries which are financially developed do export substantially higher in areas that need overseas financing.

Wang and Whalley (2010) find a lot of variations when they take a look at the before and after trade performance of the main economies in Asia after the financial crisis of 2008. As a result, they discovered that Korean production exports fell less and returned faster than Chinese exports, highlighting demand worries as the main reason behind these patterns. Chor and Manova (2012), on the other hand, use industry-level data to ascertain that, exports in finance-dependent industries (which, following Rajan and Zingales (1998), were measured in the United States) seem to react better to internal financial difficulties (measured using the level of local interest rates) throughout the financial crisis. They further posit that financial challenges are crucial for export supply.

Hur et al. (2006) and Monova (2008) examine the influence of a country's financial growth and the asset structure of a business on the trade flow of various sectors. They discovered that economies that have larger trade balances and export shares in industries with higher intangible assets are the ones with greater levels of financial development and this conclusion was reached using data from 27 industries in 42 nations.

Beck (2003), for example, shows that across 56 nations and 36 industries, the average 1980-1990 export share of industries that employ more outside money is greater in financially developed countries. Similarly, Hur et al. (2004) demonstrate that a better financial climate is related with a higher 1980-1990 average proportion of exports in industries with less money and physical assets. Wurgler (2000), shows that in nations with more sophisticated financial systems, the pace of increase in investment is largely related to recent growth in value added. The study was conducted using industry-level data.

Firm-level study

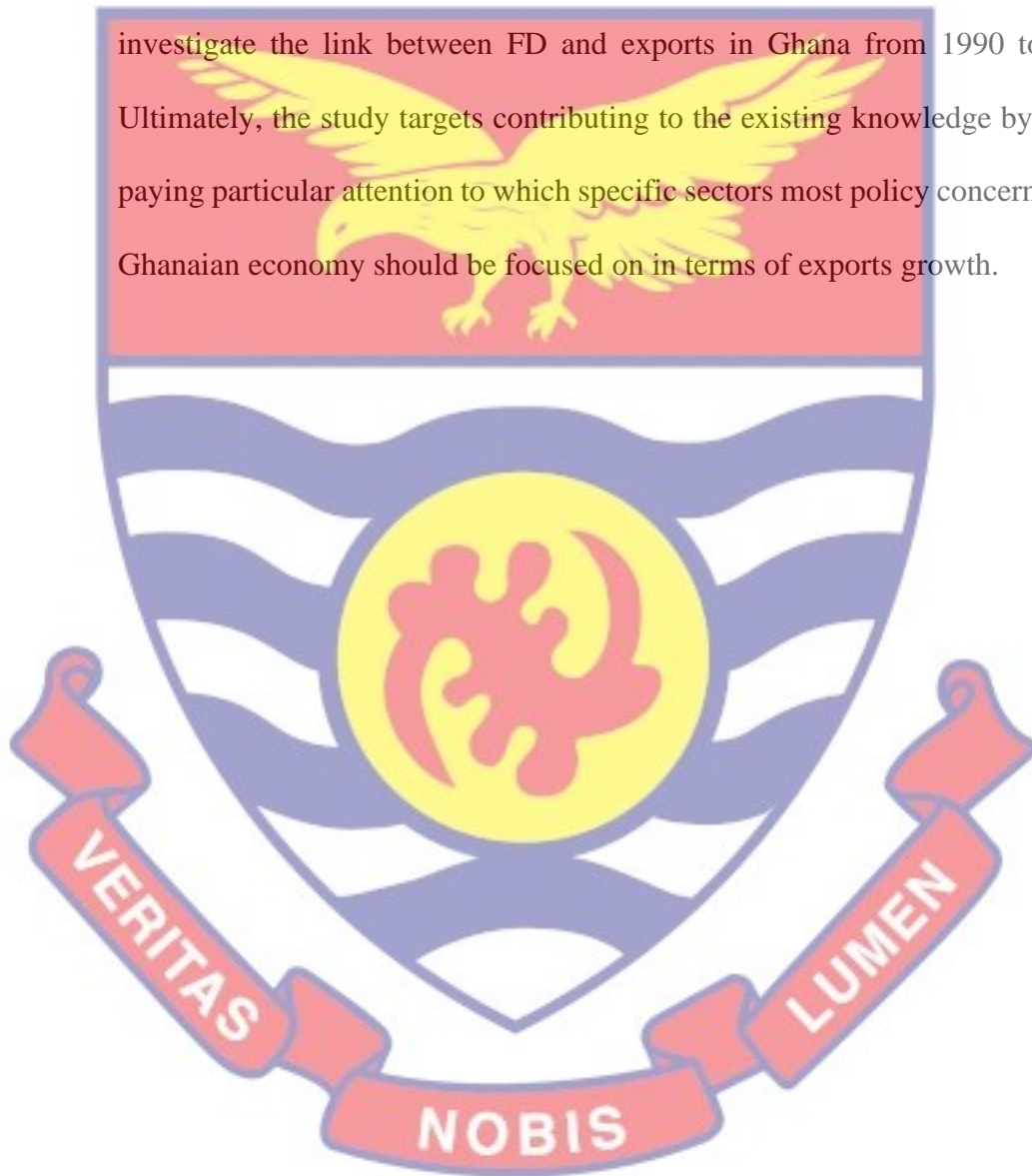
Chari and Henry (2002) show, using company-level data from Jordan, Malaysia, Korea and Thailand, that following account liberalization, the typical business enjoys an increase in both Tobin's Q and investment.

Those studies that concentrate on firm-level statistics include Berman and Hericourt (2008) and Muuls (2008). Muul examines the interplay between credit limitations and exporting behavior with the aid of a company tier export transactions dataset for the manufacturing sector of Belgium. He discovered that businesses that have greater production levels and lower financing limitations are more inclined to export. He finds that credit limitations do indeed affect patterns of export. Berman and Hericourt on the other hand, demonstrate that the financial element influences both firm export choices and firm export volume.

Chapter Summary

Several publications, including those here in Ghana, have explored the origins of exports in both developed and developing nations, according to the above review. The vast majority of these works focused on the determinants and

interdependence of export growth without paying much attention to particular areas like financial development and export linkages although that should be the focus of most policies and strategies should be aimed in order to achieve the expected export growth. As a result, there are considerable gaps in the literature on export-determinants. In light of these and other factors, this study seeks to investigate the link between FD and exports in Ghana from 1990 to 2015. Ultimately, the study targets contributing to the existing knowledge by mostly paying particular attention to which specific sectors most policy concerns in the Ghanaian economy should be focused on in terms of exports growth.



CHAPTER THREE

RESEARCH METHODS

This section presents the procedures employed in data collection and processing in the current study. Research Approach, Research Design, Theoretical framework, Empirical Model Specification, Definition and Measurement of Variables in the Model, Estimation Technique, Sources of data and Tools for Data Processing and analysis are among the main issues to be considered.

Research Approach

A quantitative research approach was applied in this research. Quantitative research, according to Bell and Bryman (2007), comprises obtaining absolute data, like numerical data, in order to objectively analyze. (Mason & Bramble, 1997). Also, quantitative analysis decreases the researcher's preconceptions, allowing generalizations to be formed on the basis of the findings of the study. Owing to the fact that almost all of the data utilized in this study is quantitative, the quantitative technique is applied.

Research Design

The study used a causal research methodology in which there was collection of quantitative data and subsequent analyses to characterize the specific phenomena in its present trends, current happenings, and links between distinct elements at the moment. The causal research methodology was used because it allowed the study to ascertain the impact of financial growth on exports.

Data Sources and Description

The theoretical model the study employs is the one by Beck (2003) and Kletzer and Bardhan (1987), whilst an empirical model to be employed in the current study is an imperfect substitute model. This model assumes that in any given country, exports are not necessarily the perfect substitutes for domestic products. The reason for employing this model is that, it provides the standard approach for the specification and estimation of foreign trade equations. Also, satisfactory results have been obtained by many researchers when applied in its basic form (Prasad, 2000; Agyapong, 2012). This research was undertaken at the macro level and that all the macroeconomic variables used are in time series. This allowed the study to actually assess the behavior of the variables over a period of time.

The study spans the years 1990 to 2015 and will rely on yearly secondary time series data. Exports, real GDP, foreign income, FDI, inflation statistics and real effective exchange rate will be provided in the World Development Indication- World Bank, while financial development data will be provided by the Global Financial Development and Structural Database (GFDS) (private sector credit to GDP).

Theoretical Model

This section illustrates one path by which the degree of FD effects the structure of international trade, production decisions, and export levels, using a theoretical model based on finance and commerce established by Kletzer and Bardhan (1987) and Beck (2003). The concept emphasizes finance's role in aggregating savings and aiding large-scale, high-return businesses. This model is based on two industries (manufacturing and agriculture) and two production

methodologies (food and growing returns to scale) (manufacturing). Larger levels of FD aid manufacturers of things more than producers of other commodities in raising returns to scale, because higher amounts of external financing allow them to capitalize on scale efficiencies which in turn, leads to trade balance of this good and an overall increase in production and in total output in nations with a more sophisticated system of finance.

A plethora of agents afflict the economy, each of which exists for just two periods of time. Each generation is brought up to be a part of each other's lives. Agents are born with financial resources and the skill to manage a manufacturing system which converts money into consumer products. Young agents utilize their money to start businesses in the first period, and the ensuing income q_k is split between first-period consumption and savings, with q representing the return on equity. Agents deposit their savings with financial intermediaries at the start of their second life period and earn interest $R = 1+iD$, which they consume at the end of their lives. According to the research, the younger generation's agents are entrepreneurs, whereas the elder generation's agents are savers. The study also discusses how producers employ production technology in connection to financial intermediation.

The Producers

A stochastic manufacturing approach is available to entrepreneurs at all times thereby allowing them to generate either a good x (agricultural or services) or variety (y_j) of produced commodities.

$$x = z_i = z(k + 1) \dots \dots \dots (1)$$

$$y_j = \alpha z_i - T = \alpha z(k + 1) - T \dots \dots \dots (2)$$

Whereas k stands for the equity of the entrepreneur, the l 's are loans that are provided by financial mediators. Finally, z also stands for a firm-specific shock

with a uniform distribution function $F(z) = \frac{z}{b}$, support between 0 and b and an

$$\text{expected value } \zeta = \int_0^b z dF(z) = \frac{b}{2}$$

These are start-up expenses that are later considered sunk costs, whereas $\alpha > 1$ is a productivity characteristic that makes manufacturing more efficient than food production.

Although food production demonstrates consistent returns to scale, the manufacturing process shows a rather growing one. Owing to the fact that manufacturing entrepreneurs may mark their products as unique without incurring additional costs while all created commodities reach a symmetrical demand, each company will specialize on a certain item. Prior to manufacturing, entrepreneurs together with their intermediaries would engage in debt agreements. To distribute their production risk, entrepreneurs will in turn, join mutual insurance agreements. Following completion of manufacture, each producer inspects output privately and repays debt in line with the contract. Finally, the issue of information asymmetry is solved; producers can see the output of each other, and insurance contracts are honored.

Model Specification

To be able to examine the connection between FD and exports pertaining to international trade structure in Ghana, the study builds on an empirical model for exports combining both the agricultural, services, and manufacturing goods based on imperfect substitute's model under the premise that, exports cannot be a perfect substitute for domestic products in the importing countries. The rationale

for this combination is because the study is simply time series, and we want to see the whole influence of financial growth on Ghana's overall exports. Following that, the export function will be approximated using the Autoregressive Distributive Lag (ARDL) technique to ascertain co-integration, bounds testing and an error correction model.

Following Prasad (2000), Sharma (2003), and Agyapong (2012), the export equation is specified as:

$$X_t = f(FD_t, FINC_t, REER_t, GDP_t, FDI_t, INF_t) \dots \dots \dots (3)$$

Where X is the export at time t , FD is Financial Development, $FINC$ is foreign income, real effective exchange rate is represented by $REER$, GDP is the level of output, Foreign Direct Investment is represented by FDI , and INF is inflation.

Transforming equation (1) into natural logarithms produce the empirical formulation given as:

$$LX_t = \beta_0 + \beta_1 LFD_t + \beta_2 LFINC_t + \beta_3 LREER_t + \beta_4 LGDP_t + \beta_5 LFDI_t + \beta_6 LINF_t + \varepsilon_t \dots \dots \dots (4)$$

Where L denotes the natural logarithm, X is exports, FD is Financial Development, $FINC$ is foreign income, real effective exchange rate is represented by $REER$, GDP is the level of output, Foreign Direct Investment is represented by FDI , and INF is inflation. Equation (4) is consequently modelled with optimal lags of the variables to depict the ARDL representation.

Expected signs of the variables

The following coefficients: $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5,$ and β_6 found in equation (4) represents the respective variables' different elasticities. The drift component, time, and error term are represented by β_0, t and ε . The apriori expected signs

for the coefficients in equation (4) are as follows: $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0$, and $\beta_6 < 0$.

The Autoregressive Distributive Lag bounds testing approach in dealing with co-integration worked on by Peseran & Peseran (1997), Peseran & Shin (1991), and Peseran et al (2001) is then modeled. This is in two steps; the first step

requires estimating the following conditional Autoregressive Distributive Lag model which is specified in equation (5)

$$\Delta LX_t = \lambda_0 + \sum_{i=1}^p \lambda_{1i} \Delta LFD_{t-i} + \sum_{i=1}^p \lambda_{2i} \Delta LX_{t-i} + \sum_{i=1}^p \lambda_{3i} \Delta LFINC_{t-i} + \sum_{i=1}^p \lambda_{4i} \Delta LREER_{t-i} + \sum_{i=1}^p \lambda_{5i} \Delta LGDP_{t-i} + \sum_{i=1}^p \lambda_{6i} \Delta LFDI_{t-i} + \sum_{i=1}^p \lambda_{7i} \Delta INF_{t-i} + \eta_1 LFD_{t-i} + \eta_2 LX_{t-i} + \eta_3 LFINC_{t-i} + \eta_4 LREER_{t-i} + \eta_5 LGDP_{t-i} + \eta_6 LFDI_{t-i} + \eta_7 INF_{t-i} + v_t \dots \dots \dots (5)$$

λ 's are the short run coefficients, and v is the error term where $\eta_1 \dots \dots \dots \eta_7$ are the long run multipliers.

The second step is where the alternative hypothesis of the presence of a long run relationship among the variables is compared to the null hypothesis of no long run relationship among the variables in equation (3) using the F-test. These are given by:

$$H_0 : \eta_1 = \eta_2 = \eta_3 = \eta_4 = \eta_5 = \eta_6 = \eta_7 \qquad H_1 : \eta_1 \neq \eta_2 \neq \eta_3 \neq \eta_4 \neq \eta_5 \neq \eta_6 \neq \eta_7$$

The Autoregressive Distributive Lag ($p, q_1, q_2, q_3, q_4, q_5, q_6$) model is approximated in order to acquire the long run coefficients (estimates). This is achieved by:

$$LX_t = \lambda_0 + \sum_{i=1}^p \eta_1 LX_{t-i} + \sum_{i=0}^{q_1} \eta_2 LFD_{t-i} + \sum_{i=0}^{q_2} \eta_3 LFINC_{t-i} + \sum_{i=0}^{q_3} \eta_4 LREER_{t-i} + \sum_{i=0}^{q_4} \eta_5 LGDP_{t-i} + \sum_{i=0}^{q_5} \eta_6 LFDI_{t-i} + \sum_{i=0}^{q_6} \eta_7 INF_{t-i} + \mu_t \dots \dots \dots (6)$$

When a long run relationship among the variables exists, the unrestricted ARDL error correction representation (short run) is approximated as:

$$\Delta LX_t = \alpha_0 + \sum_{i=1}^p \eta_{1i} \Delta LX_{t-i} + \sum_{i=0}^{q_1} \eta_{2i} \Delta LFD_{t-i} + \sum_{i=0}^{q_2} \eta_{3i} \Delta LFINC_{t-i} + \sum_{i=0}^{q_3} \eta_{4i} \Delta LREER_{t-i} + \sum_{i=0}^{q_4} \eta_{5i} \Delta LGDP_{t-i} + \sum_{i=0}^{q_5} \eta_{6i} \Delta LFDI_{t-i} + \sum_{i=0}^{q_6} \eta_{7i} \Delta INF + \phi ECT_{t-i} + \mu_t \dots \dots \dots (7)$$

From equation (5), the coefficients pertaining to the short run dynamics of the convergence to equilibrium are represented by η 's, the error correction term resulting from the estimated long run equilibrium relationship is represented by ECT_{t-i} , whereas when there is a shock in the system, ϕ is the coefficient representing the speed of correction to long term equilibrium.

Definition and Measurement of the Variables

In the above model, the variables were chosen on the basis of the economic theory, literature perused, accessible data and their importance to the model in the research.

Exports(X)

Exports will be expressed in terms of export values stated in millions of US dollars. As a result, the research will use the export-to-GDP ratio as a metric of exports (Majeed & Ahmed, 2007). Exports are predicted to have a favorable impact on economic development.

Financial development (FD)

Financial Development (FD) simply explained is the policies, conditions, and institutions that encourage efficient intermediation and successful financial markets (Mutenyo, 2013). This will be computed as a percentage of GDP of the share of private credit which deposit banks and other financial institutions are able to give (Beck, 2003; Hur et al, 2006; Kletzer & Bardhan, 1987; Manova, 2005). According to the study, this variable has a deterministic impact on exports in emerging economies. The research foretells a positive relationship between FD and exports.

Foreign Income (FINC)

Revenue earned by the other trade partners is referred to as this. The revenue of other trading partners has a considerable influence on the exports of the local country. Foreign income will be proxied by US real GDP as a gauge of trading partner income (Maxwell & Moore, 2002; Agyapong, 2012). Exports and trade partner income have a favorable relationship, according to the study.

Real Effective Exchange Rate (REER)

Goods and services' prices in the home country are compared to those in other countries in this graph. Because currency rate variations have an influence on the country's exports, this was chosen. The product of the effective relative price indexes and nominal effective exchange rate determines the actual effective exchange rate (Afari, 2004; Agyapong, 2012). Afari (2004) and Agyapong (2012) are two examples of this. From the findings, the effective exchange rate and exports will have a positive relationship.

Gross Domestic Product (GDP)

This refers to the summation of worth of services and products generated in the country over the course of a year. It will be quantified by the gross domestic product (GDP) growth (Barro, 1991; Dwivedi, 2000). (Barro, 1991; Dwivedi, 2000). GDP has a favorable influence on exports because it increases the availability of products and services in the economy, which encourages exports.

Foreign Direct Investment (FDI)

FDI is a long-term investment in companies that operate outside the investor's economy. As a result, FDI denotes the movement of capital into a country. It comprises of a bundle of capital, knowledge, and talents, among

other things. According to Asiedu (2006) and Agyapong (2012), Foreign Direct Investment will be calculated as a ratio of FDI to GDP, and the study anticipates a positive association between foreign direct investment and exports.

Inflation (INF)

Inflation is described as a gradual upsurge of price of goods and services over time. The consumer price index, that can be defined as the annual change (%) in the cost to the typical consumer of purchasing a predefined basket of goods and services that can be fixed or updated at specific intervals, such as yearly, will be used to quantify this. Inflation is projected to have a negative impact on exports.

Data Processing and Analysis

The descriptive and quantitative analysis were used in this research. The descriptive analysis was aided by graphs, charts and tables. The ADF and PP tests were used to identify the order of integration of all variables to avoid spurious regression. The Granger causality test was used to assess the direction of causation between the dependent and independent variables, as well as the Autoregressive Distributed Lag (ARDL) econometric method of cointegration. This was done to get both short and long run parameters of the key variables. All computations were performed using the software packages Microfit 4.1 and Eviews 9.0. The following test techniques were employed.

Unit root tests

Because macroeconomic time series data is frequently nonstationary (Nelson & Plosser, 1982), the Phillip Perron (PP) and Augmented Dickey-Fuller (ADF) tests will be used to look at the data's time series qualities first. The null hypothesis of a unit root in a series is compared against the alternative

hypothesis of no unit root in a series in these tests. The Akaike Information Criterion (AIC) and Schwartz Bayesian Criterion (SBC) will be employed to determine the optimal lag period for the unit root testing.

Cointegration test

The Johanson (1998) and Johnson and Juselius (1990) approaches were used for cointegration. This offers the benefit of examining endogenous vectors of variables and testing the existence and quantity of cointegration vectors.

Granger Causality Test

On the assumption that X does not granger cause Y, the Granger causality test will be used to identify the causation's direction. The Chow test was used to check for structural fractures as well. Diagnostic and stability testing further validates the goodness of fit of the models. The diagnostic test looks at the chosen models' serial correlation, functional shape, normality, and heteroskedasticity. Completing stability testing, according to Peseran & Peseran (1997), is crucial.

This approach is described in two terms: cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ). In a recursive fashion, data obtained with CUSUMSQ and CUSUM are updated and plotted against the break points. The null hypothesis of stable coefficients in the given regression cannot be rejected if the plots of the two stays within the key limitations of a 5% level of significance (Peseran and Peseran, 1997).

Chapter Summary

The methodological basis for carrying out the investigation was examined in this chapter. To capture the link between financial growth and exports, the study used finance and trade theory developed by Kletzer and

Bardhan (1987) and Beck (2003). To specify the econometric model for exports, the study follows the mainstream literature of Kletzer and Bardhan (1987) and Beck (2003). The study will employ quarterly time series data on exports, financial development, consumer price index, real GDP, FDI, foreign income, and real effective exchange rate from 1990 to 2015. The ADF and PP tests were

also utilized. Finally, the long- and short-run dynamics of the variables were investigated using an Autoregressive Distributed Lag econometric technique.



CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The outcomes and findings of the research are provided and discussed in this chapter. This is to shed more light on the relationship between Ghana's economic growth and exports. The inquiry began with an examination of the time series' stationary properties. To find unit roots in the series, the ADF and PP tests were utilized. Autoregressive Distributed Lag Model (ARDL) was used to test for cointegration and causality whereas the Pair Wise Granger causality test was also employed.

Descriptive Statistics

Descriptive statistics are shown in table 1 for the important factors studied in this research. The table further demonstrates that the average values of all the variables are positive (means). As shown by the standard deviation, the lowest deviation of the variables from their averages reflects the variables' rapid rates over time, excluding LGDP. All of the variables are positively skewed in terms of skewness, with the exception of LGDP, which is negatively skewed.

Table 1: Summary Statistics of the Variables

	LX	LFD	LFDI	LFINC	INF	LREER	LGPD
Mean	7.5563	1.7871	5.8406	3.5799	5.9666	3.0349	2.6722
Median	7.3676	1.7639	5.2677	3.5976	5.3261	2.9523	2.6732
Max	8.9707	1.0021	3.6881	3.2319	15.384	2.3756	2.7083
Min	6.8592	2.4281	8.9489	3.9829	1.6199	3.7754	2.6446
Std. Dev	0.5454	0.3476	1.3391	0.1419	3.1489	0.3144	0.0163
Skewness	0.9786	0.0202	0.7388	0.3841	1.0591	0.7488	-0.0398
Kurtosis	2.7799	1.9135	2.4853	2.9430	3.7840	2.8127	1.8753
Jarque-Bera	16.164	4.9259	10.200	2.4721	21.255	9.4906	5.2971
Probability	0.0003	0.0852	0.0061	0.2905	0.0000	0.0087	0.0708
Sum	755.63	178.71	584.06	357.99	596.68	303.49	267.216
Sum Sq. Dev	29.448	11.962	177.54	1.9933	981.70	9.7866	0.0262
Observations	104	104	104	104	104	104	104

Note: Maximum is represented by Max, Minimum is represented by Minimum, Std. Dev. stands for Standard Deviation whereas Sum Sq. Dev. stands for the Sum of Squared Deviation.

Source: Field data (2021)

The Jarque-Bera statistic indicates that the null hypothesis which all series are drawn from a random process which is normally distributed is not capable of being rejected for exports (LX), financial development (LFD), foreign income (LFINC), foreign direct investment (FDI), real effective exchange rate (REER), gross domestic product (LGDP), and inflation (INF).

Unit Root Tests Results

The variables used in the inquiry needed to be tested at the unit root level. This is because, while the limit testing approach does not necessarily need checking variables for the presence of unit roots, it does require integrating no series of order greater than one. The issue of false regression, which results in outcomes that aren't economically sound is avoided when this is done. The (ADF) and (PP) tests were used to determine unit root. The Schwarz-Bayesian Criterion (SBC) and Akaike Information Criterion (AIC) were used to determine the appropriate number of delays to include in the test. The results of the unit root test may be found in Appendices A, B, C, and D. The intercept alone and intercept and trend tests were used on the variables' levels and starting differences.

The ADF and PP statistics for all variables do not exceed the critical values in absolute terms except the real effective exchange rate (LREER) suggesting that they are nonstationary, according to Appendices A, B, C, and D. LREER is thus stationary at levels and hence has an integrated order of zero [I(0)]. The PP and ADF statistics were higher in absolute terms than their critical values when the first difference was applied to each of the nonstationary variables, suggesting that they were stationary after first difference. Unit root tests were run on levels and initial differences with only the intercept and trend.

In conclusion, exports (LX), financial development (LFD), FDI (LFDI), foreign income (LFINC), output level (LGDP), and inflation (INF) are integrated of order one [I(1)] whereas the real effective exchange rate (LREER) is integrated of order zero [I(0)].

Cointegration Analysis

The presence of a long run connection among the variables was established utilizing the limits testing approach under cointegration since the major aim of this research is to examine the link between FD and exports. The boundary test is performed with a maximum lag length of 4 when data obtained on quarterly bases are utilized, as recommended by Pesaran & Pesaran (1997). A lag length of four was employed during borders test. After that, the F-test statistic was obtained using the ARDL model. Pesaran's and Pesaran's crucial values were then compared to this statistic (1997). Table 2 shows the limits test for exports and FD, where export is the dependent variable. The number of regressors in the export equation is K.

Table 2: Bounds test results for cointegration

F-statistics	5 percent CV	
K=6	Intercept & Trend.	
	I(0)	I(1)
$F(LX LFD, LFDI, LFINC, LREER, LGDP, INF) = 5.800$	3.189	4.329
$F(LFD LX, LFDI, LFINC, LREER, LGDP, INF) = 2.054$		
$F(LFDI LX, LFD, LFINC, LREER, LGDP, INF) = 1.278$		
$F(LFINC LX, LFD, LFDI, LREER, LGDP, INF) = 1.731$		
$F(LREER LX, LFD, LFDI, LFINC, LGDP, INF) = 4.580$		
$F(LGDP LX, LFD, LFDI, LFINC, LREER, INF) = 4.839$		
$F(INF LX, LFD, LFDI, LFINC, LREER, LGDP) = 4.443$		

Critical values were obtained from Pesaran and Pesaran (1997)

Source: Field data (2021)

The calculated F-statistic for LX as the dependent variable in equation (5) is $F(5, 800) = 5.800$, as shown in Table 2. Because the F-statistic (5.800) is greater than the upper critical bound value (4.329) at the 5% significance level, it indicates that there is a long-run relationship between exports, financial development, foreign direct investment, foreign income, real effective exchange rate, output level, and inflation. As a consequence, the null hypothesis of no cointegration between the variables is rejected, and it is discovered that the variables do, in fact, have a long-run relationship. Because the variables cointegrated, the long and short run estimates of the ARDL paradigm were calculated to derive the long run coefficients and standard errors. The Schwarz Bayesian Criterion was used for estimate (SBC).

Results of the Long Run Relationship (LX is dependent variable)

The findings of the long-term connection are presented in this part, which answers the study's primary goal. The calculation of their long run relationship coefficients is necessitated by the presence of a cointegration connection between export as the dependent variable and financial development, real effective exchange rate, foreign direct investment, foreign income, GDP, and inflation as explanatory factors. As a result, Table three displayed the effects of the long-term connection. Foreign direct investment, financial development, real effective exchange rate, foreign income and production level all have a positive and statistically significant impact on export, according to long-run data from Table 3. Exports, on the other hand, were negatively impacted by inflation, which was statistically significant.

Furthermore, Foreign Direct Investment (LFDI) has a good and considerable impact on export. The coefficient of LFDI is 0.0993 and is extremely significant at the 1% level. Assuming all other conditions remain unchanged, a 1 percent rise in foreign direct investment will result in a 0.1 percent rise in exports (LX). This study's findings are consistent with those of earlier research (Sun 2001;

Zhang & Song, 2000; Njong, 2008) that indicate a favorable association between FDI and exports.

Table 3: Long Run Estimates based on SBC-ARDL (2,2,0,0,0,0,0)
(Dependent variable is LX)

Variable	Coefficient	Standard error	T-Ratio	[Prob.]
LFD	0.4443	0.0968	4.5899	[0.000]
LFDI	0.0993	0.0156	6.3653	[0.000]
LFINC	0.6827	0.3175	2.1502	[0.034]
LREER	0.5468	0.1148	4.7631	[0.000]
LGDP	0.4151	0.0812	5.1120	[0.000]
INF	-0.0052	0.0016	-3.2500	[0.002]
C	-22.9175	8.4660	-2.7070	[0.008]
T	0.0391	0.0035	11.1714	[0.000]

Diagnostic Tests

Test Statistics	LM Version	F Version
Serial Correlation	CHSQ (4) = 2.6568 [0.617]	F(4, 66) = 0.4747[0.754]
Functional Form	CHSQ (1) = 0.6736[0.412]	F(1, 69) = 0.4927[0.485]
Normality	CHSQ (2) = 1.4647 [0.481]	N/A
Heteroscedasticity	CHSQ (1) = 0.0748 [0.785]	F(1,93) = 0.0733[0.787]

Source: Field data (2021)

In his research on the impact of Foreign Direct Investment inflows on exports in Cameroon, Njong (2008) stated that FDI inflows had a positive and considerable influence on export growth in Cameroon due to competition and spill-over effects of new technology and production techniques to local enterprises. Multinational companies have access to new advanced technology and also access to foreign markets which through the spill-over effects benefit local firms who improve their productive capacity by adopting this new technology and also increase their export potential as a result of access to foreign markets.

Competition for local market from foreign investors makes local firms also to look for alternative markets by engaging in exports (Zhang & Song, 2000). The export-oriented FDI also invariably leads to increase in export as MNCs look to take advantage of local resource to feed their parent firms.

The outcome illustrates that foreign income (LFINC) has a direct and positive influence on exports (LX) at 5 percent level of significance. Thus, with a coefficient of 0.6827, it can be illustrated that a 1 % rise in foreign income (LFINC) leads to an estimate 0.7 % increase in exports (LX). Thus, as income of trading partners of Ghana increase, they demand more of exports from Ghana thereby leading to increase in exports. The results of this research is consistent with that of Maxwell and Moore (2002), Shane, Roe, and Somrawu (2008) and Prasad (2000) who find a positive impact of trading partner income on exports. Growth in trading partner income is the main cause of increase in demand for Ghana exports as this allows them to demand more exports. As destination countries grow in income, the more they demand exports from Ghana.

Furthermore, the findings prove that (LREER) influences exports in a favourable and statistically significant way (LX). With a positive coefficient of 0.5468, a 1% rise in LREER is predicted to lead to a 0.5 percent gain in exports (LX). The coefficient of LREER is statistically significant at a 1% significance level.

As predicted, the local currency's depreciation lowers the cost of Ghanaian exports, resulting in more export demand, whereas an appreciation raises the cost of exports, resulting in a long-term reduction in exports. This conclusion is similar to the one reached by (Nguyen, 2010; Fidan, 2006; Majeed & Ahmad, 2007). Because it reveals the bottom-line relative movement of prices both home and abroad, as well as export competitiveness, the real exchange rate has a substantial impact on export performance. Exchange rate depreciation lowers relative local pricing, making exports less expensive in international markets and increasing demand for exports, and vice versa (Majeed & Ahmad, 2007).

Table 3 also demonstrates that the level of GDP (LGDP) has a positive and statistically significant influence on exports (LX). Its coefficient (0.4151) is significant at the 1% level of significance, and a 1% rise in LGDP is predicted to boost exports (LX) by around 0.4 percent. This conclusion is consistent with Majeed and Ahmad's (2007) and Kumar's (1998) findings.

As countries find markets to exhaust their output, higher output levels enable them the luxury of exporting. Because developing countries (such as Ghana) have relative advantages in primary products, they may profit from lower production costs by executing export growth strategies (Majeed &

Ahmad, 2007). Thus, output increases give the possibility to export leading to rise in exporting activities in the long run.

Ultimately, the findings prove that the inflation coefficient (INF) is statistically significant and negative, implying that exports are negatively affected (LX). A 0.005-percentage-point drop in export (LX) is caused by a one-percentage-point increase in inflation with a -0.0052 connection. The INF coefficient is statistically significant at 1% significance. However, given that the size of the coefficient is small, the impact on exports is negligible.

Gylfason's (1999) discovery of a negative connection between exports and inflation for low-, middle-, and high-income nations supports this conclusion. According to Gylfason (1999), higher inflation rates lead to a real-terms national currencies' overvaluation, which in turn influences the exchange rate and negatively affects output by creating a gap between financial capital returns and real capital returns reducing savings in the process. The resulting decrease in returns on investment and manufacturing in turn, reduced export performance.

From the error correction term, any shock to the system that results in disequilibrium can be corrected in long run. The short run adjustment which was estimated to equilibrium by the error correction term was generated as follows:

$$ECM = LX - 0.4443 * LFD - 0.0993 * LFDI - 0.6827 * LFINC - 0.5468 * LREER - 0.4151 * LGDP + 0.0052 * INF + 22.9175 * C - 0.0391 * T$$

The diagnostic test for the estimated ARDL paradigm was conducted and Table 3 shows the outcomes. As shown in the table, the calculated model passes the Leverage multiplier test of residual serial correlation between the

variables. Furthermore, the model passes the Functional Forms Misspecification test based on the square of the fitted values. The model also passes the Normality test when it comes to the skewness and Kurtosis of the residuals,

This discovery backs with the theory that residuals are distributed consistently across observations. To conclude, the heteroscedasticity test under the regression of squared residuals on fitted values was passed by the model.

Results of the Short Run Relationship (DLX is dependent variable)

The findings of the short run connection are presented in this section, which answers the study's second goal based on the assumption. The researcher can go ahead and make long run estimations as there is the presence of a long run relationship between exports and their external causes. The long-term projections are the same as previously indicated. The short run estimates using the Schwarz Bayesian Criterion (SBC) are shown in Table 4. The SBC was also used to estimate the ARDL model.

The descriptive data are shown in Table 4. The corrected R² is roughly 0.74 based on the data in the table. As a result, the independent variables may explain roughly 74 percent of the variability in exports. Furthermore, a DW-statistic of about 2.0019 demonstrates that the residuals have no autocorrelation.

The short run dynamic coefficients predicted by the ARDL model are shown in Table 4. According to the Table results, the coefficients of financial development, foreign direct investment, real effective exchange rate, foreign income and production level are all positively statistically significant at the 1%, 5%, 1%, and 1% significance levels, respectively. As a result, they will have a positive and significant influence on exports in the near future. Furthermore, financial development (dLFD) continues to possess a positively significant

influence on export, as demonstrated in Table 3. As a result, the coefficient of financial development (LFD) is 0.3453. This has been established as statistically significant at the 1% level. Assuming all other conditions stay constant, a 1% increase in FD will result in a 0.3 percent increase in export. Berthou (2010), Chaney (2005), Beck (2002), Hur et al. (2006), AbuAl-Foul and Soliman (2008), Demir and et al. (2011), Kinder-begu (2012), and Manova (2013) all found similar results .

Table 4: Short Run Dynamic Results ARDL (2,2,0,0,0,0,0) (Dependent variable is DLX)

Variable	Coefficient	Standard Error	T-Ratio	[Prob.]
dLFD	0.3453	0.0411	8.4015	[0.001]
dLFDI	0.0739	0.0207	3.5700	[0.001]
dLFDI(-1)	0.0731	0.0175	4.1771	[0.000]
dLFINC	0.2073	0.0803	2.5815	[0.012]
dLREER	0.1660	0.0447	3.7136	[0.000]
dLGDP	0.1260	0.0286	4.4056	[0.000]
dINF	-0.0016	0.0005	-3.2000	[0.002]
C	-6.9579	2.0964	-3.3190	[0.001]
ECT(-1)	-0.3036	0.0493	-6.1582	[0.001]
R-Squared		0.7654	R-Bar-Squared	0.74105
S.E. of Regression		0.0414	F-stat. F(9, 85)	17.8301
[0.000]				
Mean of Dependent Variable	0.0212	S.D. of Dependent Variable	0.0668	
Residual Sum of Squares	0.1442	Equation Log-likelihood	173.5034	
Akaike Info. Criterion	162.5034	Schwarz Bayesian Criterion	148.4571	
DW-statistic	2.0019			

Source: Field data (2021)

(dLFDI) has a positive influence on exports, according to the Table (dLX). With a coefficient of 0.0739, a 1% rise in FDI leads in a 0.075 % rise in dLX at a 1% level of significance when all other variables remain constant. This

conclusion is consistent with Ahmed, Cheng, and Messinis (2008), who discovered that FDI had a short-term beneficial influence on exports in Sub-Saharan African (SSA) countries.

Exports are influenced by FDI since it serves as a significant source of capital that supplements local private investment in expanding productive capacity. Through the adoption of new technology, skill and knowledge transfers and the aid of local firms in boosting their productive capacity and export ability, it has the capacity to boost employment and increase factor productivity (de Mello, 1997).

It has the potential to produce jobs and enhance factor productivity by transferring knowledge and skills, adopting new technology, and assisting local enterprises in increasing their productive capacity and export ability (de Mello, 1997).

Furthermore, with a correlation of 0.2073, the Table reveals that foreign income (dLFINC) has a positive influence on dLX. As a consequence, a 1% rise in dLFINC should cause a 0.25 percent rise in dLX, and the coefficient remains statistically significant at the 5% level of significance. This conclusion is supported by Prasad's (2000) findings, which reveal a short-term positive relationship between foreign income and export for Fiji. When a result, as the income of Ghana's trading partners grows, so does demand for Ghana's commodities.

The (dLREER) has a positively statistically significant influence on exports, just as projected (dLX). A 1% rise in the coefficient of dLREER is expected to result in a 0.2 % gain in exports, according to a positive coefficient of 0.1660. The coefficient on the current variable remains statistically

significant at the 1% level of significance. This result is in line with Prasad's (2000) and Yishak's (2009) findings that short-run adjustments in the dLREER caused a rise in exports in Fiji and Ethiopia, respectively. Consequently, in the short run, depreciation of the local currency increases Ghana's exports, whilst appreciation of the home currency decreases Ghana's exports.

Exports are influenced by the output level (dLGDP). Its positive coefficient of 0.1260 implies that a 1% rise in output corresponds to a 0.1 percent rise in exports, as projected (dLX). Its coefficient is statistically significant at the 1% level of significance. As a result, short-term variations in output have a positive influence on exports.

Finally, the table shows how inflation (dINF) has a negative effect on exports (dLX). At the 1% level of significance, its coefficient of -0.0016 is statistically significant, meaning that a one percent rise in inflation will result in a 0.001 percent decrease in exports. In the short run, Gylfason (1999) finds evidence that inflation has a negative impact on exports for nations that export primary commodities.

Table 4 demonstrates that the coefficient of lagged ECT (-1) is statistically significant at 1% and has the anticipated negative sign (-0.3036). This indicates that around 30% of any current system shock can be rectified in the following phase. As a result of any system disruption, this represents a little adjustment to equilibrium.

The negatively significant coefficient of the error term suggests a cointegration connection between the variables in the ARDL model. Thus, exports, foreign income, FDI inflows, production, the real effective exchange rate and inflation have a long-run relationship.

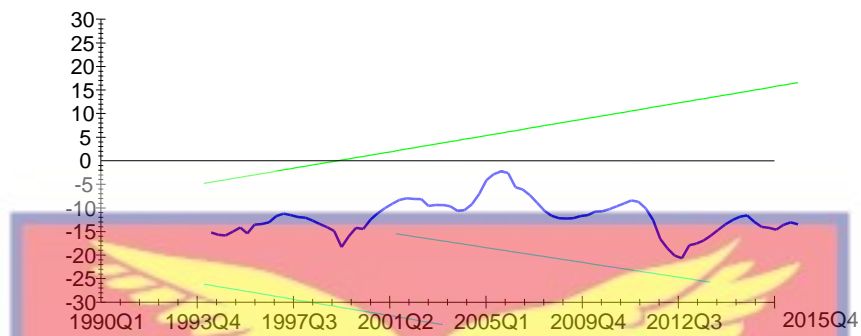
Diagnostic Tests

The ARDL model that was generated was subjected to diagnostic testing. As indicated in Table 4, the resultant model passes the Lagrangean multiplier test of residual serial correlation between the variables. When using the square of the fitted values, the generated model also passes the Functional Forms Misspecification test. With the skewness and Kurtosis of the residuals as basis, the model also passed the Normality test. The residuals exhibit a normal distribution across observations as a consequence. Finally, the derived model passes the heteroscedasticity test, which is based on squared residual regression on squared fitted values and is based on squared residual regression on squared fitted values.

Stability Test

The test for parameter stability which employed cumulative sum of squares of recursive residuals (CUSUMSQ) and cumulative sum of recursive residuals (CUSUM) plots should be done after the model is estimated, according to Pesaran & Pesaran (1997). This is done to prevent unstable parameters from causing bias in the estimated model's conclusions. The CUSUMSQ and CUSUM plots are shown in Figures 1 and 2.

The CUSUM plot for the generated ARDL model is shown in Figure 1. Because all coefficient plots lie inside the important limits at the 5% significance level, the plot demonstrates that the coefficients are not unstable. As a consequence, throughout the investigation, all of the projected model's coefficients remain constant.



(At a 5% significance level, the straight lines reflect critical bounds).

Figure 1: Cumulative Sum of Recursive Residuals plotted.

Source: Field data (2021)



(At a 5% significance level, the straight lines reflect critical bounds).

Figure 2: Cumulative Sum of Recursive Residuals plotted.

Source: Field data (2021)

The CUSUMSQ map for the predicted ARDL model is shown in Figure 2. Because all coefficient plots lie inside the important limits at the 5% significance level, the plot demonstrates that the coefficients are not unstable. As a consequence, throughout the investigation, all of the projected model's coefficients remain constant.

Granger Causality Test

Findings of the causality inquiry between FD and export, which addresses research goal three in relation to the third hypothesis, are summarized in this section. The study then moved on to testing for causality between variables after establishing cointegration among variables. The following outcomes are presented in Table 5 using Engel and Granger (1987)'s Pairwise Granger causality test. When looking for causation factors, the following consequences can be predicted. When the collection of coefficients for the two variables is statistically significant, a test reveals that one variable Granger causes the other.

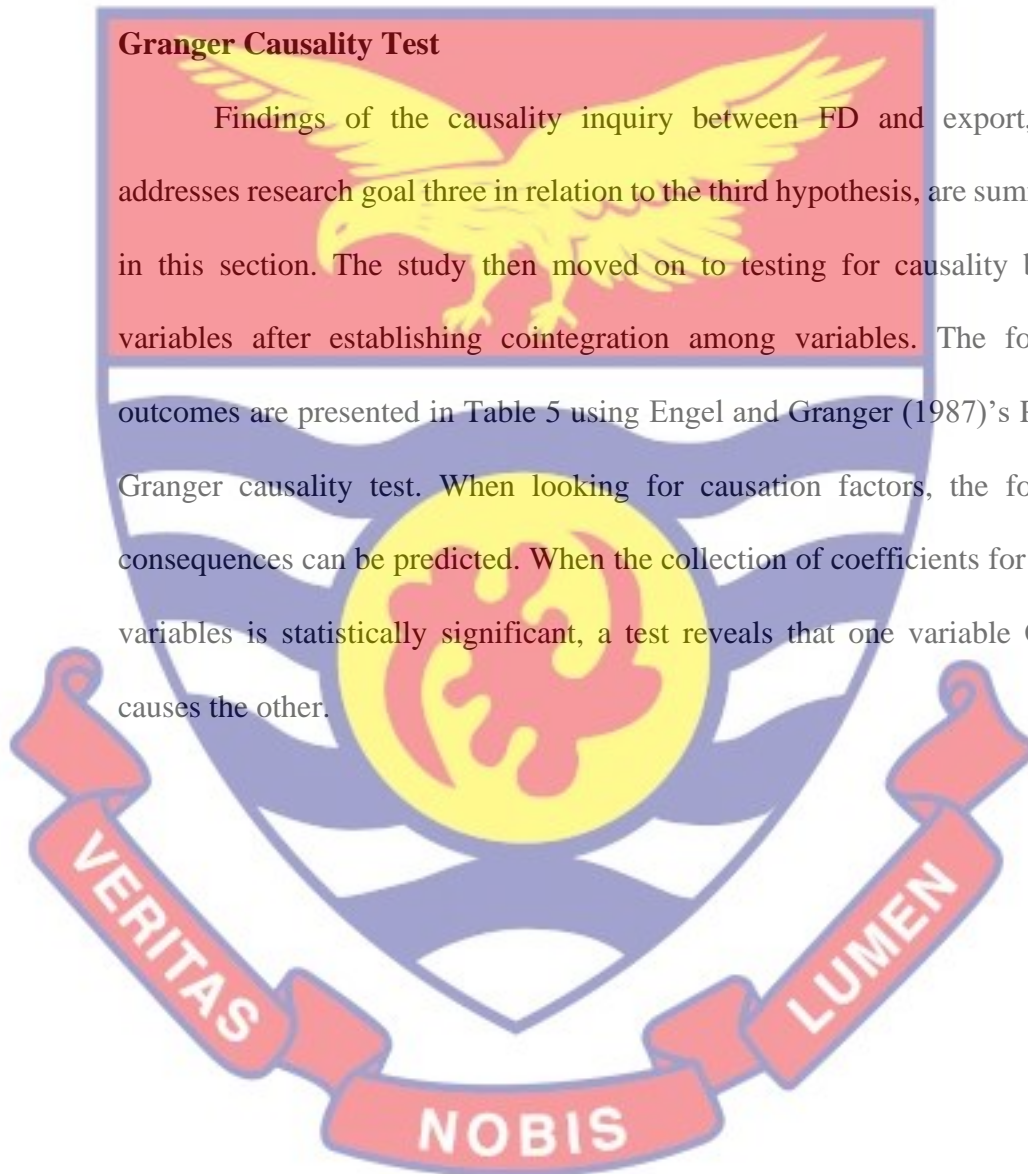


Table 5: Pairwise granger causality tests

Null Hypothesis:	F-Statistics	Prob.	Remarks:
LX does not Granger Cause LFD	3.5541	0.020**	Null is rejected
LFD does not Granger Cause LX	5.3634	0.004***	Null is rejected
LX does not Granger Cause LFDI	4.7891	0.010**	Null is rejected
LFDI does not Granger Cause LX	2.3688	0.099*	Null is rejected
LX does not Granger Cause LFINC	1.7404	0.181	Cannot reject the null
LFINC does not Granger Cause LX	2.9523	0.057*	Null is rejected
LX does not Granger Cause LREER	6.8748	0.002***	Null is rejected
LREER does not Granger Cause LX	2.3947	0.097*	Null is rejected
LX does not Granger Cause LGDP	5.7657	0.004***	Null is rejected
LGDP does not Granger Cause LX	5.1129	0.008***	Null is rejected
LX does not Granger Cause INF	2.6873	0.073*	Null is rejected
INF does not Granger Cause LX	2.4758	0.062*	Null is rejected

Computed by Author using Eviews 5.0. Note: *, **, *** & * indicate rejection of the null at 1, 5, and 10 % significance level.

As a result, causation may be considered to flow from one variable to the next. When the set of coefficients on the variables is not statistically significant, a test reveals that one variable does not Granger cause the other. As a consequence, Granger causality tests between two variables X and Y infer that there is unidirectional causation from X to Y if X Granger causes Y but not Y. Granger causality tests reveal that X and Y have bidirectional causation if X Granger causes Y and Y Granger causes X. The alternative hypothesis that X causes Y is contrasted with the null hypothesis that X does not cause Y.

The test results from the Granger causality for the variables of interest in the study are shown in Table 5. According to Table 5, the null hypotheses that LX does not cause LFD and LFD does not cause LX are rejected at 5% and 1%, respectively. As a consequence, the study discovers that LFD and LX have a bidirectional causal relationship. The findings of this study agree with those of (Beck, 2002, 2003; Hur, Raj, & Riyanto, 2006; Huang & Temple, 2005; Svaleryd & Valchos, 2002), who established a bidirectional causal relationship between LFD and exports in specialized manufacturing countries.

Furthermore, the null hypotheses that LX does not induce LFDI and LFDI does not cause LX were both rejected at a rate of 5% and 10%, respectively. As a result, the study concludes that there is bidirectional causation between LFDI and LX. This study's findings are congruent with those of Ahmed, Cheng, and Messinis (2008), who discovered a bidirectional causation link between FDI and exports in Ghana and Kenya.

Table 5 further reveals that the null hypothesis that LX does not induce LFINC cannot be rejected since the test's resultant coefficient is not statistically significant. Conversely, the coefficient obtained from the test results show that LFINC does not cause LX as that is statistically significant at 10%, causing the study to conclude that there is unidirectional causality from LFINC to LX.

The table also reveals that LX and LREER have a bidirectional causal connection. This is the case because the set of coefficients on the variables is respectively statistically significant at 1% and 10%. Causation moves from LX to LREER and from LREER to LX as a result. As a consequence, the null hypotheses of LX not causing LREER and LREER not causing LX are both rejected.

As demonstrated in the table, the null hypotheses that LX does not granger cause LGDP whereas LGDP does not in turn, granger cause LX are both rejected. Because the set of coefficients generated by the test is statistically significant at 1%, this is the case. As a result, LX and LGDP, as well as LGDP and LX, have a bidirectional causal relationship.

Finally, the granger causality test revealed that LX and INF had a one-way causal relationship. This is due the fact that at a statistical significance of 10%, the coefficient obtained from the test demonstrates that LX does not granger cause INF. As a consequence, it is a possibility that the null hypothesis that LX doesn't cause INF to be rejected. However, this is not the case.

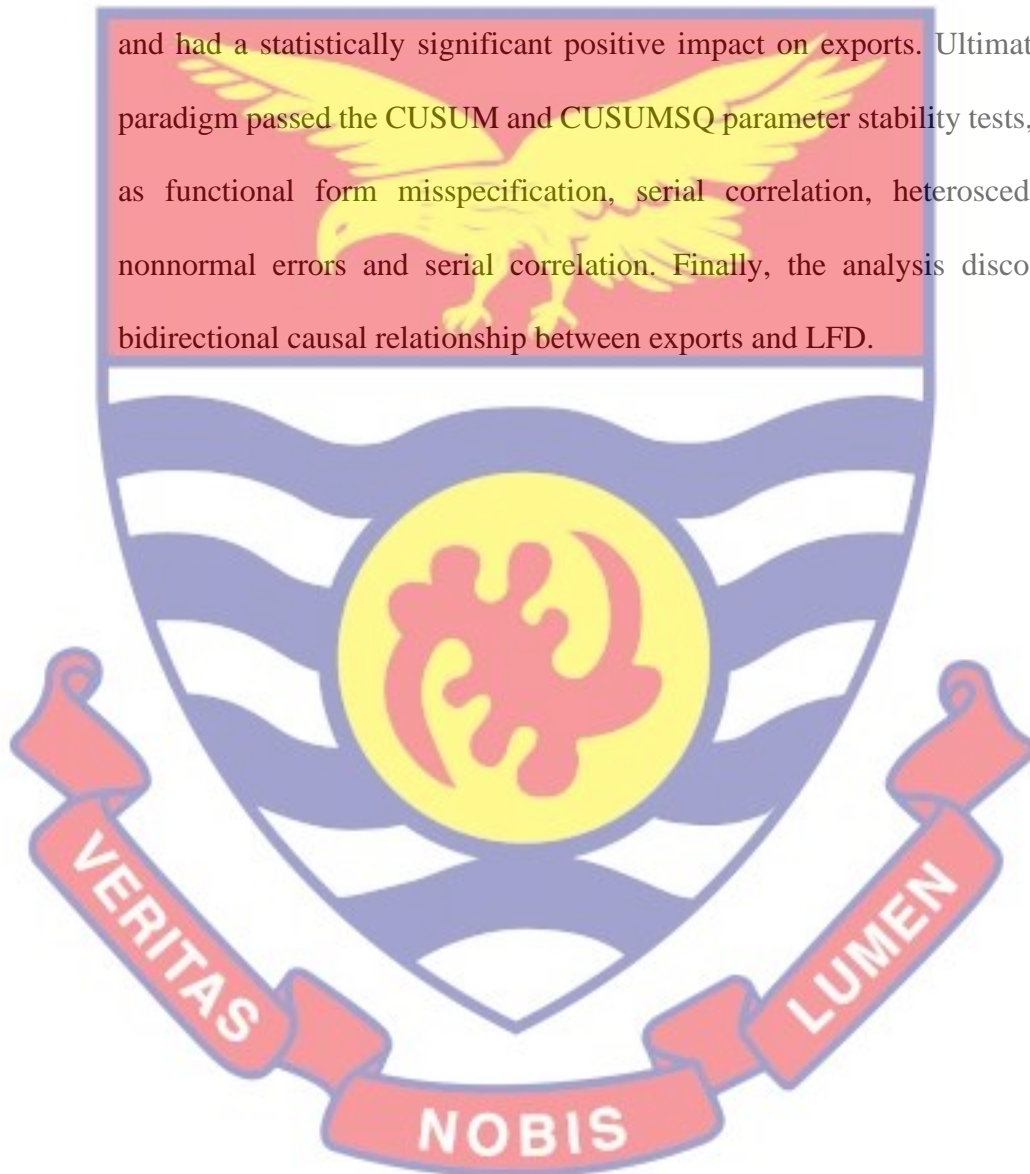
Chapter Summary

The paramount aim of this chapter was to demonstrate the estimation of the ARDL model, as well as the presenting and discussing the results thereafter. The chapter commenced with the application of the ADF and PP unit root tests to the unit root tests in the series. The tests were conducted in different tiers. The first; difference with intercepts alone, and subsequently, intercept with trend. Findings from the test revealed that LREER was stationary at levels, although LX, LFD, LFDI, LFINC, LGDP, and INF were not. When the initial difference of these nonstationary series was collected, the investigation discovered that they were stationary. The estimate of the ARDL model, as well as the presentation and apparent discussion of its results, was the major focus of this chapter.

The chapter began by applying the ADF and PP tests for unit roots to the tests for unit roots in the series. The tests were conducted in levels, with the first difference based only on intercepts, as well as intercept with trend. The

short-term estimates also show that LFD has a statistically significant and beneficial influence on exports. As a result, short-run fluctuations in LFD led to a rise in exports.

Furthermore, FDI has a positively significant impact on exports in the short run. Foreign income, REER and output all followed the expected patterns and had a statistically significant positive impact on exports. Ultimately, the paradigm passed the CUSUM and CUSUMSQ parameter stability tests, as well as functional form misspecification, serial correlation, heteroscedasticity, nonnormal errors and serial correlation. Finally, the analysis discovered a bidirectional causal relationship between exports and LFD.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter's main aim is to explain the findings of the research, come up with conclusions from them, and spell out some policy recommendations.

The conclusions reflect the general outcomes of the research findings under the scope of the hypotheses, while the summary offers a rapid review of the research topic, goal, methodology, and findings. Recommendations can include particular solutions that should be executed by specified entities. The chapter also discusses potential research directions.

Summary

The main purpose of the study was to look at the connection between Ghana's financial progress and exports utilizing quarterly data from 1990 to 2015. As a result, researchers looked at the long- and short-term connections between the two factors. The goal of the study was to see if there is an existing long-term and short-term connection between FD and exports. The study also looked at the possibility of a causal link between the two, as well as the causality's direction. In light of this, Pesaran and Shin (1999) presented the ARDL model approach for limits testing to evaluate the model's long and short run dynamic parameters. Following descriptive analysis of the variables utilized in the study, the researcher conducted tests for unit roots in the variables.

This was done to see if the series utilized in the study had any stationarity properties. The Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) tests were used in assessing unit roots inside this research. The existence of unit roots was investigated in three layers, with the first tier comparing consistent alone,

constant, and trend. First, the unit root tests; ADF and PP, revealed that after the first difference, exports, financial development, foreign direct investment, foreign income, output level, and inflation were steady, indicating that they were integrated of order one $I(1)$. On the other hand, the REER was level-consistent and was therefore integrated of order zero $I(0)$ thus enabling the

employment of the ARDL model, that whereas ignoring series stationarity difficulties, demands the variables be integrated to a sequence no greater than one.

Second, the following stage took a critical look at any potential long-term connections between the variables in the research. The long-term relationship boundaries test outcomes demonstrated that FDI had a statistically significant positive influence on exports in the long run. As a result, the study suggests that FD and exports have a complimentary connection. This implies that financial development can act as a driver for export growth. Current finding concurs with the theory for multinational companies that exports incentives serve as a force for improving the financial sector especially the export-oriented FD. This is because most export oriented MNCs use developing countries as export platform.

Furthermore, as stated earlier, spill-over effects resulting from FD serves to improve exports by expanding productive capacity of local firms through availability funds, technology and knowledge and also access to foreign markets for local firms.

Third, long-run dynamic analysis revealed that FDI and foreign income had a long-run positive and statistically significant influence on exports. Countries with higher incomes import more from Ghana, increasing both the

value and quantity of the country's exports. Long-term analyses also demonstrated that the REER had a favorable and significant influence on export over time. As the currency rate rises, Ghanaian exports become more affordable, increasing demand for exports. A decline, on the other hand, makes exports more expensive and hence reduces export demand. As a result, Ghana is likely to benefit more from a rise in the exchange rate in the long run than from a reduction in the exchange rate.

In furtherance of the above, the long-run outcomes demonstrated a positive and statistically significant output level influence on exports. Increased output enables countries to participate in more effective trade by boosting excess products exports. This provides the government with foreign reserves to support its efforts while also opening up the economy by exporting. Finally, long-run analyses demonstrated that inflation had a statistically significant and negative influence on exports. Macroeconomic stability, as it has been demonstrated, is indeed vital in establishing export success since a stable macroeconomic environment promotes investment and production. Short-run dynamics demonstrated that FD had a favorable and considerable impact on exports. As a result, the study concluded that short-run changes in FD enhance exports, implying a complimentary link between the two.

Furthermore, the study found that the lag of FDI had a considerable impact on exports. As a result, the study concluded that the value of FDI in the preceding quarter had a favorable impact on the value of exports in the particular year. In furtherance of the above, the study revealed that foreign money had a statistically significant and favourable short run impact on exports. Furthermore, the REER had a statistically significant and favourable short run

influence on exports. The amount of output had a positive statistically significant influence on exports in the near run. Inflation, on the other hand, had a negative statistically significant short-term influence on exports.

This means that financial development, foreign income and foreign direct investment promotes exports of host country by augmenting domestic capital

for exports, facilitating access to new and large foreign markets, providing training for the local workforce and upgrading technical and management skills.

The error term provided the study's variables with the long-run connection they required. The error term's negative statistically significant coefficient confirmed the existence of a long run link between exports, FDI inflows, financial development, foreign income, the REER, production level, and inflation. The magnitude of its coefficient implies that roughly 30% of the disequilibrium created by system shocks which happened the previous year accounts for the current year's long-term equilibrium.

Serial correlations, nonnormal errors, functional form misspecification and heteroscedasticity tests all passed the model's diagnostic tests. The parameter stability test, which involved showing the CUSUM of recursive residuals and CUSMSQ recursive residuals graphs, also showed the presence of a steady connection between FDI and exports throughout the study period. The Pairwise Granger causality test was, as well, employed to see if there was any causation between FD and exports, and if so, in which direction. The experiments demonstrated a bidirectional causal association between exports and Foreign Direct Investment (FDI).

Conclusions

The study's empirical findings showed that FDI, foreign income, the REER, and the level of production all had a positively significant long- and short-run impact on exports. This shows that financial development and foreign investment are critical for boosting export growth rate in both the long and short run. Increases in foreign revenue, currency rate appreciation, and output levels also lead to short- and long-term export growth.

Inflation makes a detrimental impact on exports in both the short and long run, according to the study. This shows that lower inflation rates aid export growth, whereas higher rates hinder export performance in the short and long run by introducing distortions in the manufacturing process and investment. Finally, the study found that FDI and exports had a bidirectional causal relationship. This suggests that utilizing past FD values to explain exports is more effective than using solely past export values. It also indicates that previous export values can aid in explaining past values.

Recommendations

The importance of financial development, FDI, foreign income, REER, production level, and inflation in stimulating exports was stressed in the study. Foreign direct investment (FDI) is critical for Ghana's export growth, and the government and financial institutions must collaborate to improve the financial sector so that it can act as a catalyst for increased exports.

In addition, the government must give incentives to encourage FDI. To continue to attract increasing FDI, government policy should be focused on sustaining an export-oriented and open policy.

Finally, a stable macroeconomic environment encourages robust economic activity and, as a result, increased exports. Any distortions in the production process must be removed to maintain a stable macroeconomic environment and enhance the rate of return on investment, the Ghanaian government should aim for lower inflation rates. Price stability may help to provide economic stability and, as a result, increase export growth. In order to maximize the benefits of the cedi's depreciation, inflation should be kept below those of trading partners.

Suggestions for Further Research

To identify their specific consequences and contributions to the economy, a detailed examination of the association between FD and exports is essential. The sectoral and geographical distribution and contribution of FD to the export industry, as well as the FD's distinctive effect on the export sector, should be given special consideration. Finally, other variables that are cited as significant in understanding the link between FD and exports must be included. Institutional quality, corruption index, interest rate, and labor productivity are examples of such factors.



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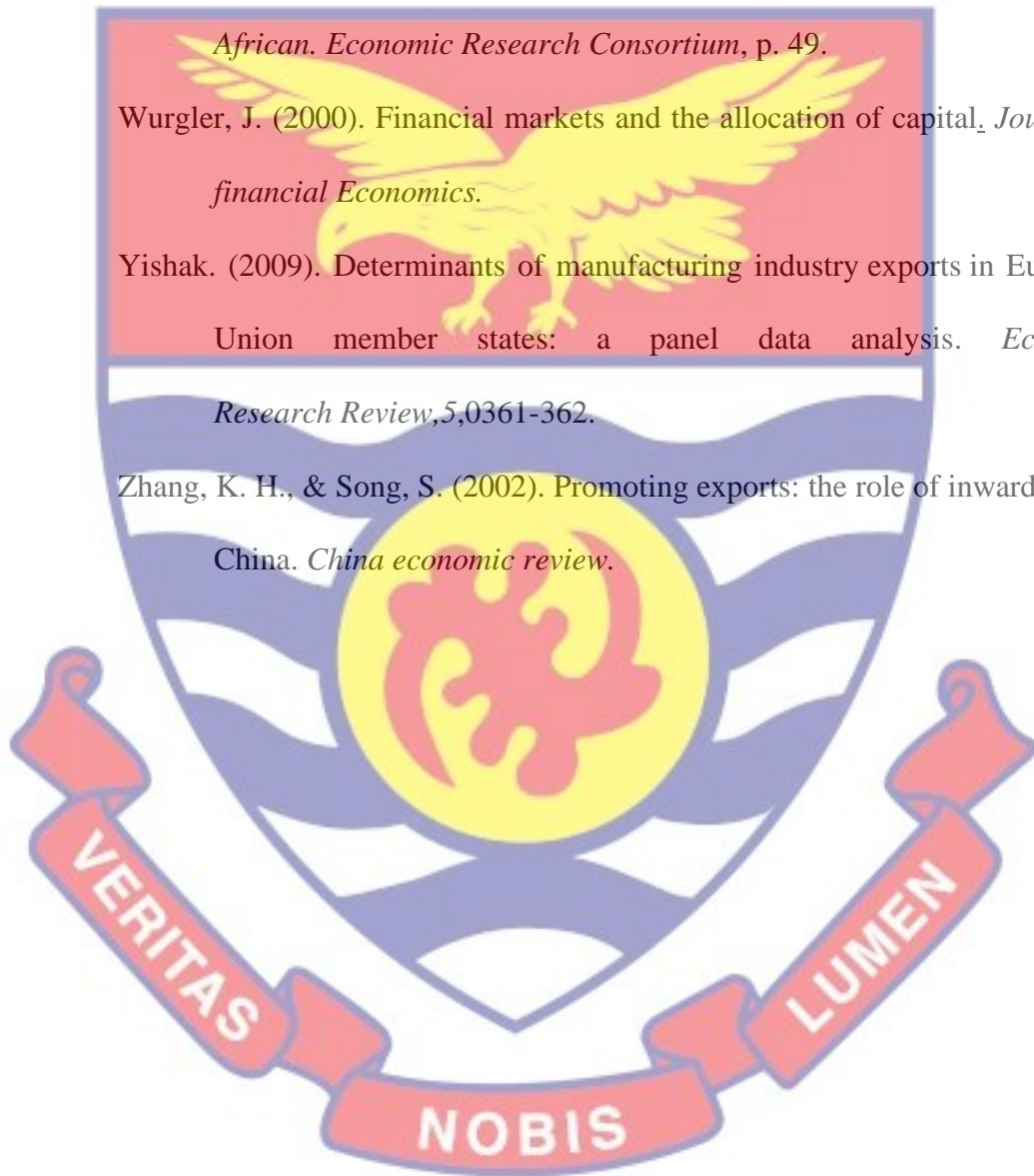
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APPENDICES

APPENDIX A

TEST FOR ORDER OF INTEGRATION (ADF): INTERCEPT ONLY LEVELS AND FIRST DIFFERENCE

Levels		First Difference				
Variables	ADF-Statistics	Lag	Variables	ADF-Statistic	Lag	$I(O)$
LX	0.9498[0.9958]	4	ΔLX	-6.2978[0.000]***	3	$I(1)$
LFD	-1.2337[0.1454]	1	ΔLFD	-5.5547[0.0000]***	0	$I(1)$
LFDI	-1.3187[0.6184]	1	$\Delta LFDI$	-7.2787[0.0000]***	0	$I(1)$
LFINC	-0.9155[0.7795]	3	$\Delta LFINC$	-6.7438[0.000]***	2	$I(1)$
LREER	-3.5503[0.0085]***	0				$I(0)$
LGDP	-0.8551[0.7984]	1	$\Delta LGDP$	-4.5688[0.000]***	0	$I(1)$
INF	-2.4181[0.1395]	3	ΔINF	-6.4534[0.000]***	2	$I(1)$

Note: The P-values are those values in parenthesis. Δ stands for the first difference and $I(O)$ is the order of integration. *** represents the rejection of the null hypothesis of non-stationary at 1% significance level.

APPENDIX B

TEST FOR ORDER OF INTEGRATION (PP): INTERCEPT ONLY LEVELS AND FIRST DIFFERENCE

Levels			First Difference			
Variables	PP-Statistic	Bwd	Variables	PP-Statistic	Bwd	<i>I(O)</i>
LX	0.0349[0.9589]	4	Δ LX	-4.9238[0.000]***	5	<i>I</i> (1)
LFD	-1.4588[0.3117]	1	Δ LFD	-5.3224[0.000]***	2	<i>I</i> (1)
LFDI	-0.9887[0.7550]	1	Δ LFDI	-7.2525[0.000]***	3	<i>I</i> (1)
LFINC	-1.9512[0.3079]	5	Δ LFINC	-4.4987[0.000]***	2	<i>I</i> (1)
LREER	-3.3396[0.0156]**	3				<i>I</i> (0)
LGDP	-1.7077[0.4243]	2	Δ LGDP	-4.5688[0.000]***	0	<i>I</i> (1)
INF	-2.6397[0.9901]	5	Δ INF	-4.1380[0.001]***	0	<i>I</i> (1)

Note: The P-values are those values in parenthesis. Δ represents first difference, Bwd is the Band Width, and *I(O)* is the order of integration. *** also stands for the rejection of the null hypothesis of non-stationary at 1% significance level.

APPENDIX C

TEST FOR ORDER OF INTEGRATION (ADF): LEVELS AND FIRST DIFFERENCE; INTERCEPT AND TREND INCLUSIVE

Levels			First Difference			
Variables	ADF-Statistic	Lag	Variables	ADF-Statistic	Lag	<i>I</i> (<i>O</i>)
LX	-3.4156[0.1552]	1	ΔLX	-6.3949[0.000]***	3	<i>I</i> (1)
LFD	-2.7446[0.1554]	1	ΔLFD	-7.1124 [0.000]***	0	<i>I</i> (1)
LFDI	-2.6786[0.2478]	1	ΔLFDI	-7.2376 [0.000]***	0	<i>I</i> (1)
LFINC	-0.4821[0.9829]	3	ΔLFINC	-11.5408[0.000]***	2	<i>I</i> (1)
LREER	-4.0569[0.0098]***	1				<i>I</i> (0)
LGDP	-2.2534[0.4548]	1	ΔLGDP	-4.5688[0.000]***	0	<i>I</i> (1)
INF	-3.0896[0.1147]	3	ΔINF	-6.4308[0.000]***	2	<i>I</i> (1)

Note: The P-values are those values in parenthesis. Δ stands for the first difference and *I*(*O*) is the order of integration. *** represents the rejection of the null hypothesis of non-stationary at 1% significance level.

APPENDIX D

TEST FOR ORDER OF INTEGRATION (PP): LEVELS AND FIRST DIFFERENCE INTERCEPT AND TREND INCLUSIVE

Levels		First Difference				
Variables	PP-Statistic	Bwd	Variables	PP-Statistic	Bwd	$I(O)$
LX	-2.4733[0.3406]	2	ΔLX	-4.7732[0.001]***	5	$I(1)$
LFD	-1.4201[0.3451]	2	ΔLFD	-6.106[0.000]***	3	$I(1)$
LFDI	-2.3012[0.4291]	2	$\Delta LFDI$	-7.2651[0.000]***	3	$I(1)$
LFINC	-1.0760[0.9273]	5	$\Delta LFINC$	-4.6868[0.001]***	2	$I(1)$
LREER	-3.7017[0.0266]**					$I(0)$
LGDP	-1.6374[0.7710]	2	$\Delta LGDP$	-4.4077[0.003]***	1	$I(1)$
INF	-3.1342[0.1043]	5	ΔINF	-4.1184[0.008]***	0	$I(1)$

Note: The P-values are those values in parenthesis. Δ represents first difference, Bwd is the Band Width, and $I(O)$ is the order of integration. *** also stands for the rejection of the null hypothesis of non-stationary at 1% significance level.