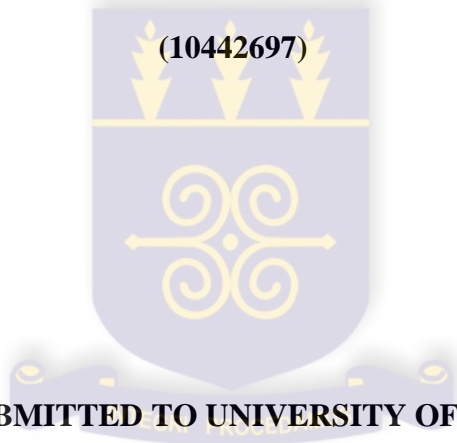


UNIVERSITY OF GHANA

THE IMPACT OF FOREIGN BANKS ON ECONOMIC GROWTH IN GHANA

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**THIS THESIS IS SUBMITTED TO UNIVERSITY OF GHANA, LEGON IN
PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
MPHIL FINANCE DEGREE.**

JULY, 2015

DECLARATION

I, Papa Ekow Armah, declare that this thesis is a consequence of my own original research and that no part of it has been presented for another degree in this University or elsewhere

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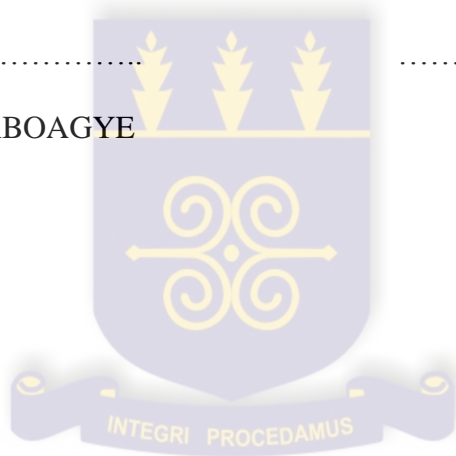
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CERTIFICATION

We hereby certify that the preparation and presentation of this thesis were in accordance with the procedures on supervision laid down by the University of Ghana.

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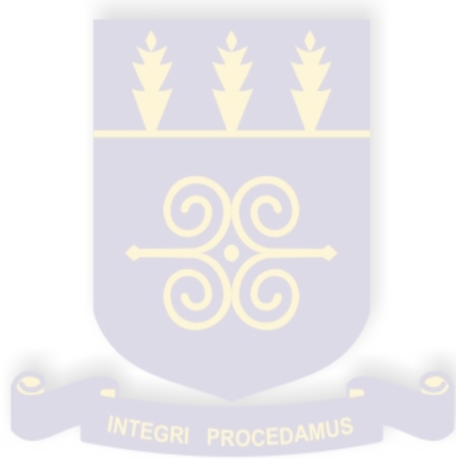


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DATE

DEDICATION

This thesis is dedicated to the Almighty God and all my family members, especially my parents and siblings. I say God bless you all.



ACKNOWLEDGEMENTS

The completion of this thesis also marks the end of my student life into University of Ghana Business School. During the last couple of years I was able to meet people from different cultures who have contributed, in one way or another, to my academic and personal development.

I would like to take custody of this opportunity to record my deepest admiration and gratitude to my supervisors Prof. Anthony Q.Q. Aboagye and Dr. Patrick O. Asuming for their tremendous tutelage, constructive criticisms, suggestions and corrections throughout the preparation of this thesis, and to all the lecturers who have shared their knowledge with me in different stages of the Master Programme.

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ABSTRACT

This study takes the finance-growth nexus further by looking at the direct and indirect impact of foreign banks on economic growth in Ghana. Using annual time series data from 1960 to 2013, the study examined the relationship between the share of foreign banks, bank competition and economic growth. The relationship between the share of foreign banks, bank competition and economic growth was established through the framework of endogenous growth model. In addition, the study employed the Johansen multivariate cointegration technique and vector error correction model to examine the long-run relationship and short-run dynamics among the variables.

The results showed that, in the long run, the share of foreign banks is positively related to economic growth whilst bank competition is negatively related to economic growth. In the short run, the share of foreign banks and bank competition are not significantly associated with economic growth. The empirical results support the presence of direct impact of foreign banks on economic growth, but find no indirect impact of foreign banks on economic growth.

The study therefore, provides the backbone for policy makers who may be reluctant to remove restrictions on the entry of foreign banks to change their minds and introduce international competition to ensure effective mobilization and allocation of credit to productive sectors.

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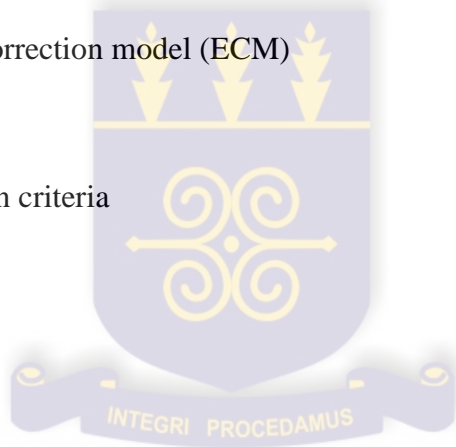
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LIST OF ABBREVIATIONS

AIC	Akaike Information Criterion
CPI	Consumer Price Index
CR ₅	Five-bank concentration ratio
CUSUM	Cumulative Sum of Recursive Residuals
ECT	Error Correction Term
FS	Share of Foreign Banks
GDP	Gross Domestic Product
OLS	Ordinary Least Squares
PWC	PricewaterhouseCoppers
SC	Schwarz Information Criterion
SSA	Sub-Saharan Africa
TFP	Total Factor Productivity
VAR	Vector Autoregression
VECM	Vector Error Correction Model
WDI	World development Indicators

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The need to promote economic growth is a global issue of topmost importance in advanced, emerging and less developing countries. Even though the subject is old, considering the changing demographics and widening income disparities in many of the most advanced economies and the continued population growth in many less developed countries, the issue of economic growth has gained significance. The most successful economies, according to Patrick (1966) have the tendency to develop a sophisticated financial system at the early stage of development. In his study, Demirguc-Kunt (2006) noted that financial systems ensure efficient allocation of capital, amass savings and offer payment services which ease trade in goods and services. All these enhance long-term economic growth. A country's financial structure constitutes a mixture of banks, non-bank financial institutions and the securities markets.

Many governments in the 1960s and 1970s, including those of sub-Saharan Africa of which Ghana is no exception, attempted to stimulate economic growth through financial repressive policies such as the use of fixed interest rate, inflationary monetary policies and sectoral credit allocation. This was in line with the theoretical works of Keynes (1936) who advocated government interference in financial markets. However, McKinnon (1973) and Shaw (1973) argued against such financial repressive policies as they acted as disincentives to savings mobilization, which inhibited long-run economic growth and sustainable development. As a result, developing economies in the last few decades have tended to develop strategies that focus on the modernization and liberalization of their financial systems.

The countries of sub-Saharan Africa are no exception. The 1980s have seen most of these countries undertake policies aimed at lowering the levels of financial repression by generally

reducing the extent of government interference via the privatization of publicly-owned banks. These policies were employed to boost economic performance through financial development and this was to be realized through the overall enhancement in the efficiency of resource allocation, a higher savings mobilization or the growth in foreign and domestic investments (Cobbina, 1999).

The pre-reform policies of financial repression and public ownership of banks had important consequences for the banking system. Financial depth collapsed, and with it the ability of the banking system to supply credit, including to the priority sectors which financial policies aimed to support. With the exception of those banks which retained foreign equity participation (ie Barclays, SCB and MBG), the banks all became insolvent as a result of bad debts and investments in commercially unsuccessful ventures.

Financial repression caused severe financial shallowing in Ghana. The broad money/GDP ratio, which had been relatively stable at around 20% from 1964-74, rose briefly in the mid 1970s (to a peak of 29% in 1976) and then collapsed to 12.5% in 1983. Moreover bank deposits became less attractive relative to cash: the currency/M2 ratio rose from 35% in 1970 to 50% in 1983, reflecting a process of disintermediation from the formal financial system. Bank deposits amounted to only 7.4% of GDP in 1984, having fallen from 19.5% of GDP in 1977. Aryeetey and Gockel (1990), in a study of the informal financial sector, found that street banking was increasing in contrast to formal sector intermediation. The main causes of the decline in financial depth included the sharply negative real deposit rates, which deterred savers from holding financial assets. The currency appropriations of 1979 and 1982, the freezing of bank accounts and the decree authorising the government to demand details of customers' bank accounts from banks, all served to erode public confidence in holding domestic currency and using the banking system, instead encouraging the use of informal financial intermediaries and the holding of savings in the form of physical assets, such as buildings and construction

materials, or foreign assets. Long waiting times in banks, a consequence of inefficiency and the lack of large denomination bank notes, also deterred the public from depositing cash in banks. Moreover the banks were discouraged from active deposit mobilisation because interest rate controls and the very high statutory reserve and liquid asset requirements prevented banks from channelling depositors' funds into remunerative outlets. At times the banks refused to open new time and savings deposit accounts and refused to pay interest on accounts above a certain amount (Dordunoo and Nyanteng, 1997; Aryeetey and Harrigan, 2000; Aryeetey and Tarp, 2000; Emenuga, 2004).

However, in order to ensure the continuous improvements in the efficiency performance and higher productivity of the banks and the banking sector, there is the need for financial sector reforms within the banking industry. In line with this Ghana has tried and implemented several policies/measures over the last five decades. In fact, since the 1980s especially, major financial sector reform programmes have been implemented in Ghana. Notable examples include: The Economic Recovery Programme (ERP) in April 1983, with the aim of liberalizing the economy from controls in order to enhance productivity in the economy, The Financial Sector Adjustment Programme (FINSAP) in 1988, which was aimed at addressing the weaknesses in the banking industry, Restructuring the public sector banks in 1989, The Universalism of the banking sector, The Increase in bank minimum paid-up capital, and the opening up the banking sector to foreign banks (Dordunoo and Nyanteng, 1997).

Hence, the liberalisation of the financial sector has raised the significance of international trade in goods and financial services in the economy. To encourage such trade, numerous banking institutions have also become international by establishing foreign subsidiaries and branches or by taking over established foreign subsidiaries and branches or by taking control over established foreign banks (Claessens, Demirguc-Kunt and Huizinga, 2001).

Table 1.1 indicates the increase in the number of foreign banks in Ghana from 1960 to 2013 resulting from the introduction of financial sector reforms.

Table 1.1: Classification of banks in Ghana (1960-2013)

Year	Number of Banks	Foreign Banks	Local Banks	Year	Number of Banks	Foreign Banks	Local Banks
1960	3	2	1	1987	10	3	7
1961	3	2	1	1988	10	3	7
1962	3	2	1	1989	10	3	7
1963	4	2	2	1990	12	4	8
1964	4	2	2	1991	13	5	8
1965	5	2	3	1992	13	5	8
1966	5	2	3	1993	13	5	8
1967	5	2	3	1994	13	5	8
1968	5	2	3	1995	13	5	8
1969	5	2	3	1996	16	7	9
1970	5	2	3	1997	17	7	10
1971	5	2	3	1998	17	7	10
1972	7	2	5	1999	18	8	10
1973	7	2	5	2000	16	7	9
1974	7	2	5	2001	17	7	10
1975	7	2	5	2002	17	7	10
1976	7	2	5	2003	18	7	11
1977	10	3	7	2004	18	7	11
1978	10	3	7	2005	20	9	11
1979	10	3	7	2006	23	12	11
1980	10	3	7	2007	23	12	11
1981	10	3	7	2008	23	12	11
1982	10	3	7	2009	25	14	11
1983	10	3	7	2010	25	15	10
1984	10	3	7	2011	26	14	12
1985	10	3	7	2012	26	14	12
1986	10	3	7	2013	26	14	12

Source: Author's compilations and computations

According to Demirguc-Kunt, Levine and Min (1998), foreign banks may influence economic growth directly and indirectly. By bringing extra capital, energetically seeking for beneficial uses of these funds, applying corporate control, and encouraging risk management, foreign banks may directly boost capital accumulation and efficiency of resource allocation in ways that stimulate economic growth. Foreign banks may spur economic growth indirectly by intensifying competition. By contesting markets and sharpening competition, foreign banks raise the overall level of banking sector efficiency. In this way, domestic banks give better services; become better at mobilizing savings, energetically look for beneficial uses for these savings, apply corporate control and facilitate risk management in ways that accelerate economic growth.

All the same, the presence of foreign competition has been approved with some resistance, especially from individual policymakers and domestic bankers. For example, Stiglitz (1993) highlights the likely costs to domestic banks, the government, and local entrepreneurs resulting from foreign bank entry. Domestic banks may incur costs because they have to rival large international banks with good reputation. Likewise, local entrepreneurs may have limited access to financial services given that foreign banks generally concentrate on multinational firms, and governments may find their control of the economy diminished as foreign banks tend to be less sensitive to their wants.

In Ghana, the increase in the number of foreign banks in the domestic banking sector has been drastic over the years. In fact, within the period of 2000, the number of foreign banks in Ghana doubled and even matched the number of domestic banks in the country. This quick growth in the operations of foreign banks has brought up doubts about the effects of their presence in domestic banking markets. In Ghana, like many other developing countries, the financial systems tend to evolve around the banking system which makes the importance of the role of

foreign banks in economic growth still far from established (Gulde, Patillo and Christensen, 2006).

1.2 Statement of the Problem

The literature on the finance-growth nexus has examined the role of financial development in economic growth (King and Levine, 1993; Ndebbio, 2004; Christopoulos and Tsionas, 2004; Abu-Bader and Abu-Quarn, 2008; Ezzo, 2010). Evidence by King and Levine (1993) show a strong significant positive relationship between financial development and economic growth for a cross-section of 80 countries from 1960 to 1989. However, a limited number of extant literature narrows the subject matter down to different aspects of the financial sector; stock market or banking. Notwithstanding, the increasing level of financial liberalization of certain parts of the financial sector has attracted the attention of policy makers and researchers.

This study contributes to historical debate on the finance-growth nexus by providing empirical evidence on the role of foreign banks in economic growth. According to Aghion and Howitt (1992), foreign banks may influence economic growth directly on the level of financial development by improving the quality of financial services and increasing funds available or indirectly by improving the efficiency of financial intermediaries, both of which may reduce the cost of financing, hence, increase capital accumulation and economic growth.

Although, the link between the share of foreign banks, and economic growth has been extensively examined in both developed and developing countries, many of the studies on the direct link between foreign banks and economic growth are mainly concentrated in Asia, Latin America and Europe (Demirguc-Kunt et al., 1998; Bayraktar and Wang, 2004; 2008). Interestingly, previous studies on the direct link between foreign banks and economic growth in sub-Saharan African countries especially Ghana is scant.

Moreover, specific studies addressing the direct influence of foreign banks on economic growth are inconclusive (Demirguc-Kunt et al., 1998; Bayraktar and Wang, 2004; 2008). For example, Demirguc-Kunt et al. (1998) cannot find any direct link between foreign banks and economic growth after controlling for other factors associated with growth. In addition, most of these studies have used the cross-sectional method which generalizes the direct influence of foreign banks on economic growth across countries. The problem of using this method is that by grouping all countries which are at different stages of financial and economic development, it fails to address the country-specific effects. The cross-sectional method also fails to explicitly address the potential biases induced by the existence of cross-country heterogeneity, which may lead to inconsistent and misleading estimates (Levine and Zervos, 1993). In contrast, empirical study conducted in developed and emerging markets, mainly sampled from Latin America and Asia, showed that there is a direct link between the share of foreign banks and economic growth (Bayraktar and Wang, 2008).

Given that the lack of conclusive empirical evidence on the direct link between foreign banks and economic growth, the possible indirect links have been searched for in literature. See studies by Terrell (1986); Cho (1990); McFadden (1994); Levine (1996); Claessens and Jansen (2000); Claessens, Demirguc-Kunt and Huizinga (2001); Unite and Sullivan (2003); Lensink and Hermes (2004); Clarke, Crivelli, and Cull (2005); Chen and Liao (20011) and Saka, Aboagye and Gemegah (2012).

In her study in Australia, McFadden (1994) found that increase in the presence of foreign banks led to improved domestic bank operations.

In the case of Ghana, Saka, Aboagye and Gemegah (2012) examined the effects of the entry of foreign banks, and changes in the bank concentration on the technical efficiency of domestic banks in Ghana between the period 2000 and 2008. They established that the efficiency of

domestic banks has been positively affected by the introduction of foreign banks and reduction in concentration.

The present study departs from previous studies in that it sought to investigate both links between foreign banks and economic growth in Ghana using the Johansen multivariate framework. As observed by Gujarati (2001), the benefits resulting from this technique are that; first, it is possible to distinguish between the short-run and long-run relationships if variables are cointegrated. Second, endogeneity is less of a problem since it treats all variables as potentially endogenous. Finally, it models relationships among macroeconomic variables in a dynamic manner since it is common for macroeconomic variables to be affected by their own past values.

1.3 Objectives of the study

The main objective of this study is to examine the direct and indirect impact of foreign banks on economic growth using annual time series dataset in Ghana from 1960 to 2013. Specifically, the study seeks to achieve the following related objectives:

1. To establish the relationship between the share of foreign banks and economic growth.
2. To establish the relationship between bank competition and economic growth.

1.4 Statement of hypothesis

The following hypotheses were formulated to guide the study.

1. H_0 : There is no significant relationship between the share of foreign banks and economic growth.
 H_1 : There is a significant relationship between the share of foreign banks and economic growth.
2. H_0 : There is no significant relationship between bank competition and economic growth.

H₁: There is a significant relationship between bank competition and economic growth.

1.5 Significance of the study

The significance of the study can be viewed on two grounds: policy and research.

Considering the significance to policy the findings are to inform policy makers on the number of foreign banks which enter the Ghanaian banking industry, and also provide guidelines to them in formulating policies capable of reducing their vulnerability to financial crisis.

In terms of research significance, the study intends to contribute to the empirical literature in this area of study. While a number of studies have examined various aspects of the banking industry, to the best of my knowledge, no study has examined the subject of foreign banks and economic growth particularly in the case of Ghana. Again by employing a time series analysis approach the study will provide a more appropriate framework to scrutinize the finance-growth nexus.

1.6 Scope of the study

This study encompasses the economy of Ghana, with special emphasis on the banking industry in Ghana. Thus, the study is focused on the influence of foreign banks in the banking industry in Ghana using annual series data from 1960 to 2013. It utilizes the Johansen's Cointegration approach. Variables such as economic growth, share of foreign banks, bank competition, investment, financial deepening, government expenditure, inflation and trade openness were employed in the study. Economic growth is proxied by the growth rate of GDP, the share of foreign banks proxied by the number of foreign banks divided by the total number of banks and bank competition is proxied by Five-bank concentration ratio. The study used the following variables to augment the model: investment, financial deepening, government expenditure, inflation and trade openness.

1.7 Organization of the study

The study is organized into five chapters. Chapter one focused on the introduction which included background to the study, research problem, objectives of the study, research hypotheses, significance and scope of the study as well as organization of the study. Chapter two presents the overview of the Ghanaian banking sector, review of relevant literature, both theoretical and empirical that affirms foreign banks' presence and economic growth. The third chapter explains the methodology used to analyze the time series data set. Chapter four presents and discusses the results and findings. Finally, chapter five deals with summaries of the findings, conclusions and the policy recommendations emanating from the study as well as discusses the limitations of the study and recommendations for future study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The broad aim of this chapter is to present the review of relevant literature on the relationship between the share of foreign banks, bank competition and economic growth. This chapter is divided into four sections. The first section focuses on the overview of banking in Ghana and discusses the various stages that banking in Ghana has passed through over the years. The second section presents and discusses the theoretical bases of this relationship beginning with Patrick's opposing demand and supply hypothesis, McKinnon-Shaw thesis, the endogenous growth perspective, the Stern-Lucas proposition and finally the theory of banking. The third part looks at the empirical evidence of the finance-growth nexus, by looking at works done by several sources in the study, and draw lessons from these works. The final section presents the conclusions drawn from the Ghanaian banking system as well as theoretical and empirical literature.

2.2 Overview of Banking in Ghana

The Ghanaian banking system comprises the Bank of Ghana (the Central Bank), the commercial and universal banks, the non-bank financial institution (NBFI), the rural and community banks, and forex bureau (Anin, 2000). The profile of the banking industry in Ghana is viewed in terms of the colonial era, post-war era, banking in closed economy, banking in the era of structural adjustment, banking laws and current trends.

2.2.1 Colonial Era: 1890-1945

According to Annin (2000), the economic developments in the Gold Coast during the 1800s were underpinned by the use of un-uniform currency. Until 1880, trade was conducted along the West Coast of Africa in a baffling array of money, tokens such as cowries, manilas, and

brass rods. The cowrie shells were originally imported from the Maldives Islands but their role as currency declined in the early 19th Century in favour of showing the value of commodities and services in gold weight values. These were defined according to the generally recognized Asante gold weights.

In 1818, British coins were first exported to the Gold Coast Colony. These coins eventually became the common currency of the Gold Coast a decade after the release of the Demonetization Ordinance. The diverse sorts of currency used had various problems, for instance the gold dust caused the pragmatic problem of weighing and thus was not always convenient in commercial proceedings. Cowries had the reverse of being too bulky and were likewise not always convenient medium of interchange. The Colonial Authorities attempted to resolve the problem with the passing in 1880, of the Demonetization Ordinance, which confined money to; all Gold and British Sterling, Spanish and South American Doubloons, American Double Eagles, French 20-franc pieces and Gold Dust and Nuggets. The main problem of the Demonetization Ordinance was the virtual elimination from circulation of the traditional local currency tokens.

2.2.2 Entry of the Colonial Bank / Barclays Bank DCO

The Bank of British West Africa (BBWA) was incorporated as a limited liability company by the directors of Elder Dempster and started trading on March 31, 1894, at first in England, then in Lagos and lastly in 1896, opened another branch of the bank in Accra, Gold Coast. Soon after the bank was set up in Accra it was able to acquire the business of keeping up the Government accounts. In essence, it was able to pioneer the usage of cheques in settlement of Government accounts which helped to promote the usefulness of the bank to the public (Anin, 2000).

The banking monopoly enjoyed by the BBWA ended in 1917 with the establishment in Accra a branch of the colonial bank, which had since 1836, operated in the West Indies. Its London

Board decided in the course of the First World War to expand its operations to other parts of the British Colonial Empire. The Board received the consent of the United Kingdom Parliament through the amendment of the Colonial Bank's Charter. In 1925, Barclays finished up all the money related assertion which prompted the unification of the pioneer bank, the Anglo Egyptian Bank and The National Bank of South Africa to form another bank known as Barclays Bank DCO (Dominion, Colonial and Overseas). In 1926, the six branches of the Colonial Bank hence got to be branches of Barclay Bank (DCO).

2.2.3 The Nature and Content of Banking Services Offered

The type of foreign banking services offered by the two banks during this era comprises documentary credits, discounting of Bills of Exchange, Collections and Remittances. Domestic banking transactions consisted of the maintenance of numerous current accounts for individuals and corporate clients. The indigenous clients of the two banks comprised mostly of merchants, senior civil servants and individuals from the British educated professional's classes who were referred to casually as "been-toes". Savings accounts were likewise spread out for clients who were typically educated (Anin, 2000). Until the introduction of mechanized bank accounting machines in 1953 by the newly established Bank of Gold Coast, all bank transactions were entered manually. Interest calculations on all accounts were drawn by reference to Interest Tables. Some other interesting feature of branch accounting in the pre-1950 era was that whole branches of the two banks of the West Coast were controlled from London. Until the formation of the Bank of Ghana at independence, the currency duties of the West African Currency Board were engaged by the BBWA on an agency basis (Anin, 2000).

2.2.4 Banking in the Post-War Era: 1945-1960

According to Anin (2000), the conclusion of the Second World War denoted a basic defining moment in the historical backdrop of the Gold Coast. It was not a straightforward move from war to peace. In both, the political and monetary circles, there were momentous developments.

Banking operations were actively involved in financing the increased requirement for West African product and also for financing a much larger volume of imports. The Bank of Gold Coast Ordinance was approved by the legislature in October 1952. Four months after the Ordinance came into power (February 1953), the first branch of the Bank of Gold Coast opened its doors to the general population on the 20th of May 1953. The reaction of the two existing expatriate banks to the new Bank of the Gold Coast was interesting to note. BBWA was more accommodating even though it stuck away to lose the Government reports to the newcomer. Barclays DCO's reaction was most strange since it drew complaints about the fact that the bank had lost all government, businesses which they had previously handled and lost most of their well trained and loyal staff; a drill they had indulged in when they came into existence and it kept the threat of an injunction from BBWA's London Office before DCO's poaching of BBWA staff ceased (Anin, 2000). The Bank of Gold Coast was transformed in 1957 into two autonomous institutions with different functions of which the Ghana Commercial Bank and the Bank of Ghana emerged.

2.2.5 Banking in a Closed Economy: 1960 -1983

The period was characterised by the incorporation of state banks, which were made to match the growth objectives of the government. In addition, to the Ghana Commercial Bank which had been established as a state-owned banking institution as far back as 1953, the Nkrumah administration of the First Republic incorporated specialist banks in the development of industry and agriculture. These banks were the Agricultural Credit and Co-operative Bank and National Investment Bank. Nkrumah's policy of adjusting up a bank to provide financing for a specific region of the home economic system was kept by Col. I. K. Acheampong with the passing, in 1972 of the Bank for Housing and Construction.

2.2.6 Banking in the Era of Structural Adjustment: 1983 – 1997

In April 1983, the government performed a volte-face and dramatically changed the course and content of economic policy and management. It heralded a series of reform measures and agreed on a short-term stabilization program with the World Bank and the IMF. An essential part of the Economic Recovery Programme was the World Bank's determination to complete a careful change of Ghana's banking system, giving careful consideration to the state owned banking sector.

By 1983, the banking system was reflecting the severe problems of the home economic system. The large state-owned industrial and agricultural sectors had run up massive overdrawn position with the State Owned banking institutions. More ominously, these loans and overdrafts had degenerated into the “non-performing” loan categories in the books of these banks. The World Bank and the Government of Ghana concurred that a change and rebuilding of Ghana's banking industry were crucial parts of Economic Recovery Programme. With specialized and monetary help from the International Development Association (IDA), the Government begun a financial sector reform programme in 1988. The main objectives of the programme were:

1. To embark upon the rebuilding of fiscally upset banks;
2. To upgrade the solidness of the banking system through an enhanced administrative and supervisory system;
3. To enhance the assembly and designation of monetary assets, including the development of cash and capital markets (Anin, 2000).

Extensive government intervention characterised financial sector policies in the post-independence period. Public ownership dominated the banking system: all of the banks set up between the early 1950s and the late 1980s were wholly or majority owned by the public sector,

while the government also acquired minority shares in the two already established foreign banks in the mid 1970s. Interest rates were administratively controlled by the Bank of Ghana (BOG) and a variety of controls were also imposed on the asset allocations of the banks, such as sectoral credit directives. The motivation for these policies was the belief that, because of market imperfections and the nature of the financial system inherited from the colonial period, the desired pattern of investment could not be supported without extensive government intervention in financial markets. Policies were motivated by three objectives: to raise the level of investment, to change the sectoral pattern of investment, and to keep interest rates both low and stable (Gockel, 1995). Financial sector policies were characterised by severe financial repression, real interest rates were steeply negative and most of the credit was channelled to the public sector.

The government established its own commercial and development banks for two reasons: the belief that the operational focus of the foreign commercial banks, in particular their lending policies, was too narrow, thus depriving large sections of the economy of access to credit, and, second, the contention that sectors important for development, such as industry and agriculture, required specialised financial institutions (FIs) to supply their financing needs.

Dissatisfaction with the foreign banks focused on their conservative lending policies, modelled on those employed in the UK, and in particular their demands for the types of security (life insurance policies, stock certificates, bills, etc) which were uncommon in Ghana (Newlyn and Rowan, 1954, p82). The Ghana Commercial Bank (GCB) was set up in 1953 to improve the access to credit of indigenous businesses and farmers. ² It was also instructed to extend a branch network into rural areas, so that people in the rural areas would have access to banking facilities, and was heavily involved in lending to agriculture. GCB became the largest bank in Ghana: it had 36% of total bank deposits in the late 1980s.

The Social Security Bank (SSB), was set up in 1977. It grew rapidly to become the second largest bank in Ghana, with 18% of deposits in the late 1980s, providing credit, including longer term loans, for businesses and consumers. It also invested in the equity of several large businesses. Two smaller commercial banks began operations in 1975. The National Savings and Credit Bank (NSCB) - formerly the Post Office Savings Bank - and the Cooperative Bank: these were expected to provide consumer loans, credit for small industries and cooperatives.³ A merchant bank, Merchant Bank Ghana (MBG), was set up in 1972 as a joint venture between ANZ Grindlays, the government and public sector FIs, with the former having a 30% stake.

To fill the perceived gaps not served by the commercial banks, especially for long term finance, three development finance institutions (DFIs) were set up: the National Investment Bank (NIB), in 1963, to provide long term finance for industry; the Agricultural Development Bank (ADB) in 1965; and the Bank for Housing and Construction (BHC), in 1974, to provide loans for housing, industrial construction and companies producing building materials. The DFIs mobilised funds from deposits as well as from government and foreign loans and undertook commercial banking activities as well as development banking.

The government did not nationalise the two foreign owned banks - Barclays Bank and Standard Chartered Bank (SCB) - which had been established in Ghana during the colonial period, but it did acquire 40% equity stakes in the banks following an indigenisation decree enacted in 1975 (which was applied to all large scale industries).

There have been several new entrants into banking markets since the reforms began. Two merchant banks - Continental Acceptances (CAL) and Ecobank - began operations in 1990: both are joint ventures involving local public sector shareholders and foreign shareholders. A foreign commercial bank - Meridien Bank BIAO - was set up in 1992 with a minority local shareholding by the Social Security and National Insurance Trust (SSNIT). Two more

merchant banks commenced operations in 1995: First Atlantic and Metropolitan and Allied. Unlike the earlier entrants these two banks both have major equity participation from the local private sector, together with foreign participation.

It is perhaps surprising that local private sector investment in banking has, so far, been limited to the two banks set up in 1995. This is not attributable to conservative bank licensing policy on the part of the BOG and Ministry of Finance. Although licensing policy appears to be cautious, with applicants required to fulfil a number of conditions such as the submission of a feasibility study with five year financial projections, and to provide particulars of the promoters and prospective managers, the number of applicants for bank licenses since the reforms began, and the number of rejections, has not been large. This may be attributable to the weakness of the local business class and its lack of close links to the government: local investors may have been wary of entering a high profile sector such as banking without the protection of political connections. It is also possible that local investors interested in financial markets have instead opted for less ambitious ventures, such as foreign exchange bureaux and NBFIs, in which the capital investment required is much lower than that needed to set up a bank.

In addition to the new entry into banking markets around 20 NBFIs, including leasing companies, finance houses, building societies and savings and loan companies, have been established during the 1990s. Many of these NBFIs accept deposits and extend credit, and therefore provide some competition for the services offered by the banks.

In other words, interest rate liberalisation has not had a marked impact on the level of real deposit rates, in part because administered nominal rates had already been raised in 1984 by the BOG in an effort to stimulate financial savings. There have been substantial variations in the level of real interest rates since the late 1980s, reflecting fluctuations in inflation rates and the considerable contemporaneous differences between the nominal rates offered on different

classes of bank deposits since interest rates were liberalised. For example, there was a difference of 17 percentage points between the lowest savings deposit rate and the highest fixed deposit rate in December 1994 (see Table 2.1).

Table 2.1: Nominal and Real Deposit Rates since Liberalisation (%)

Year	Inflation	Nominal Deposit Rates		Real deposit Rates	
		Lowest	Highest	Lowest	Highest
1989	25.2	15.0	21.0	-8.1	-3.4
1990	37.2	14.0	24.0	-16.9	-9.6
1991	18.0	10.6	25.2	-6.3	6.1
1992	10.0	11.0	24.0	0.9	12.7
1993	24.9	15.0	32.0	-7.9	5.7
1994	24.9	13.8	31.0	-8.9	4.9
1995	38.5	21.5	37.0	-12.3	-1.1

Note: The lowest interest rate shown is the lowest rate offered on savings deposits. The highest rate shown is the highest rate offered on fixed deposits.

Source: Bank of Ghana (various issues).

High rates of inflation have impeded the attainment of positive real deposit rates. When inflation rates have fallen to around 10%, as in 1992, real deposit rates have been positive. But when inflation has been higher, as in 1987-91 and 1993-95, the nominal interest rates paid on savings deposits and the lowest rates paid on fixed deposits have generally been well below the prevailing inflation rates. Consequently bank deposits have not offered very attractive returns to most savers. Not surprisingly there has been only a very limited degree of financial deepening in the banking system since the reforms began. Bank deposits increased from 10.4% of GDP in 1986 to 12.8% of GDP in 1994.

2.2.7 The Banking Act 2007, Act 738

The Banking Act 2007 is an Act to alter the Banking Act, 2004 (Act 673) to encourage the development of an international financial services centre that looks to draw in foreign direct investment, income from license fees payable in foreign currencies, make engagement, upgrade local aptitudes and information, reinforce the financial sector through extension in the utilization of investment banking instruments and to accommodate associated themes.

The Bank of Ghana (BOG) shall issue to the applicant a final approval and an authorization to carry on business, after the BOG is satisfied with the organizational infrastructural plans made by the applicant, and that the candidate has complied with the terms and conditions stipulated in the provisional approval. A permit issued under this Act might be issued subject to the terms and conditions that the Bank of Ghana may impose and should be in one of the following classes:

- a) General Banking License;
- b) Class I Banking License; or
- c) Class II Banking License;

Subject to this Act or any other act, the holder of a Class II Banking Licensee should not:

1. Take deposits or placements from any individual inhabitant in Ghana other than another bank holding a General Banking License concerning its Class II banking business, or another bank holding a Class II Banking License;
2. Invest in an asset that represents a claim on any individual resident in Ghana
3. Carry on business in Ghana other than the business for which its Class II Banking License has been issued.

In the event of a depository financial institution taking a General Banking License, the depository financial institution is not empowered to carry on business in any bureau or branch, other than its principal position of business, unless it has received a prior approval. The bank holding the Class I Banking Licensee shall at all times while in operations, maintain a capital adequacy ratio of ten percent (10%). In the case of obtaining a Class II Banking License, not authorize banks to possess more than one place of business for the purpose of Class II banking. In conditions of capital needed for these diverse categories of banks to restrain, the various licensed banks are required to keep a minimum initial paid up capital after deduction of accumulated losses: for a General Banking Business GH¢ 70 billion in relation to its class I banking business in a currency and other amount as the BOG may determine. For a class II Banking License an amount in a currency as the bank of Ghana determine from time to time and for Rural Banks GH¢ 500 million.

Whilst a bank holding a Class II Banking Licensee shall at all times while in operations, maintain a capital adequacy ratio of the percentage that the depository financial institution may decide. This percentage shall be determined by the Bank of Ghana from time to time, after discussions with the bank, and shall not necessarily be the same for all banks or all banks of that class. The BOG uses the standards of other financial resources available to the bank in question, the nature, scale and risks of the bank's operations and the amount and nature of net own funds required, in the bank's judgment to protect the interest of depositors and potential depositors and the public. This can be found in section 23 of the banking act. A license shall not be granted by the Bank, unless it is satisfied with;

1. The technical knowledge, experience, financial conditions and history of the applier;
2. The sufficiency of the capital structure of the applicant;
3. The character of the business and its management;

4. The sufficiency of the applicants accounting control systems and records;
5. In the event of an applicant incorporated outside Ghana, that the applicant is a subdivision or related company of a foreign bank of established international reputation.

To sum up, the recent adoption of the Banking Law has tightened risk exposure limits, established higher minimum capital adequacy ratios, strengthened accounting standards, broadened the scope of audits and imposed more stringent reporting requirements for banks.

2.2.8 Current Trends

The financial sector is currently experiencing critical developments in its structure which will be instrumental in supporting the significant growth opportunities for investment and further financial development in Ghana.

The Bank of Ghana reports that the banking industry stayed profitable, liquid, and solvent amid the financial year (BoG, 2011). The number of Deposit Money Banks (DMBs), the number of Non-Bank Financial Institutions (NBFIs), and the number of Rural and Community Banks (RCBs) stayed at 27, 49, and 135 respectively.

In the meantime there were advancements in the payment systems, which incorporated an expansion of the Cheque Codeline Clearing with the cheque truncation system across the country and additionally a redesign of the Ghana Interbank Settlement System. Furthermore, a Microfinance Office was setup by the Bank of Ghana to manage and oversee microfinance establishments in Ghana. In 2012, the financial sector encountered a few adjustments in the competitive environment as a consequence of mergers and acquisitions. Access Bank Ghana with a market share of 1.20% obtained Intercontinental Bank of Ghana, which had a market share of 3.20%. Ecobank Ghana with a market share of 9.00% gained The Trust Bank Limited, which had a market share of 2.80%.

The year 2013 can be described as one of Ghana's banking industry's hardest years over the previous decade. In spite of the development in the industry's total assets by 33% in 2013 contrasted with the five historic (2008-2012) average growth rate of only 26%, there was a slowdown in deposit mobilisation in the industry in 2013 (PWC, 2014). The industry's deposits grew by 27% contrasted with the five year historic (2008-2012) average growth rate of 28%. 2013 saw banks contending wildly with each other to develop their individual deposits. The industry, as a whole, also came under attack in the customer deposit market, with the greatest dangers assumed by government and some non-customary sources, for example, savings and loans organizations (S&Ls) and finance houses.

As of now, the quick devaluing Ghana cedi, which has brought about Bank of Ghana (BOG) tightening its implementation of currency exchange regulations has created some challenges (and likely open doors as well) for banks. The central bank has also presented some new orders on reserve requirements and foreign currency net open positions further compelling banks' capacity to loan or obtain interest earning liquid assets. Furthermore, a change to VAT legislation obliging banks to charge their clients VAT at 17.5% on some of their money related administrations could prompt some steady loss of banks' margins.

Notwithstanding the apparently difficult time, the banking industry keeps on being a hotbed of positive developments. The industry has witnessed the entry of some intriguing and modern products, which seem to be centred on getting (new) customers and also optimising opportunities for non-interest revenue from transaction of banking services. Regardless of the increased minimum capital requirement for new entrants into the industry, it is clear that financial service providers in different nations are still intrigued by entering the Ghana banking industry, demonstrating that there is a general conviction that returns to investment in the industry have not peaked as yet or, at least, might be better than that available elsewhere.

Table 2.2 gives a breakdown of the various banks and their respective number of branches in Ghana as at June of 2014. It also gives the ownership type of the banks.

Table 2.2: Banks, their respective ownership and branch network in Ghana

Name of Bank	Majority Ownership	Number of Branches (As at June, 2014)
Access Bank (Ghana) Limited	Foreign	39
Agricultural Development Bank Limited	Local	78
Bank for Africa	Foreign	19
Bank of Baroda (Ghana) Limited	Foreign	2
Barclays Bank of Ghana Limited	Foreign	59
BSIC (Ghana) Limited	Foreign	15
CAL Bank Limited	Local	19
Ecobank Ghana Limited	Foreign	78
Energy Bank (Ghana) Limited	Foreign	7
Fidelity Bank Limited	Local	43
First Atlantic Bank Limited	Foreign	8
First Capital Plus Bank Limited	Local	15
GCB Bank Limited	Local	158
Guaranty Trust Bank (Ghana) Limited	Foreign	28
HFC Bank Ghana Limited	Local	28
International Commercial Bank Limited	Foreign	12
National Investment Bank Limited	Local	29
Prudential Bank Limited	Local	31
The Royal Bank Limited	Local	11
Societe-Generale (SG) Ghana Limited	Foreign	45
Stanbic Bank Ghana Limited	Foreign	26
Standard Chartered Bank Ghana Limited	Foreign	25
UniBank (Ghana) Limited	Local	22
United Bank for Africa (Ghana) Limited	Foreign	27
Universal Merchant Bank Ghana Limited	Local	22
UT Bank Limited	Local	30
Zenith Bank (Ghana) Limited	Foreign	28

Source: PricewaterhouseCoopers (Banking survey), 2014

2.3 Theoretical Literature

This section reviews the theoretical origins of the finance-growth nexus beginning with Patrick's opposing demand and supply hypothesis, McKinnon-Shaw thesis, the endogenous growth perspective, the Stern-Lucas proposition and finally the theory of banking.

2.3.1 Patrick's Demand and Supply Hypothesis

Patrick (1966) made the attempt at evaluating the relationship between financial deepening and economic development and proposed the two competing hypotheses: the supply-leading and the demand-pulling or following. He attributed them to specific stages of the development process.

The Gurley and Shaw (1955) hypothesis commonly referred to as the supply-leading hypothesis contends that the expansion of the financial system precedes and brings on the demand for its services. That is financial development is the engine of real economic growth. Therefore, the creation and expansion of effective market-oriented financial intermediaries is a vital pre-condition for genuine and sustained economic growth in any country. This hypothesis postulates that well-functioning financial institutions can promote overall economic efficiency, create and expand liquidity, mobilize savings, enhance capital accumulation, transfer resources from traditional (non-growth) sectors to the more modern growth inducing sectors, and also promote a competent entrepreneurial response in these modern sectors of the economy (Darrat, 1999).

Patrick (1966) affirmed that the focal point of causality changes over the course of evolution. In his perspective, the supply-leading hypothesis dominates during the early stages of economic growth, and subsequently gradually shifts its leading role to the demand-following. This consequently means that initially causality runs from finance to growth, a scenario that should be expected in developing nations. The demand-following pattern should then be expected to

establish a causality that runs from growth to finance at a later phase of evolution. Most advanced economies may accordingly be expected to exhibit this direction of causality (Agu and Chukwu, 2008).

Patrick (1966) proposed three major ways in which a well-developed financial system can influence the investment for growth purposes. First, financial institutions can encourage a more efficient allocation of a given total amount of material wealth (capital) by bringing about modifications in its ownership and in its composition, through intermediation among various types of asset-holders. Second, financial institutions can promote a more efficient allocation of new investment (additions to investment) from relatively less to relatively more productive uses by intermediation between savers and entrepreneurial investors (credit creation). Third, they can cause an increase in the rate of accrual of capital by providing increased incentives to save, invest and work. The deliberate establishment and promotion of financial establishments in many less developed countries (LDCs) might reflect this belief in the supply-leading hypothesis. This hypothesis has been raised by many prominent theorists like McKinnon (1973), Shaw (1973), Fry (1978), DeGregorio and Giudotti (1995) and Neusser and Kugler (1998).

Darrat (1999) indicated that many well-known scholars, including Robinson (1952) and Patrick (1966) have long turned away this hypothesis on purely theoretical grounds and have indicated an alternative view known as the demand-following hypothesis. This hypothesis argues that financial development is merely a by-product or an outcome of growth in the real side of the economy. Agreeing to this alternative position, any development in financial markets is just a passive response to a developing economy. Hence, the lack of fiscal growth is a reflection of the lack of demand for financial services. As the real position of the economy develops its demands for several new financial services, materials, and these are met rather passively from the fiscal side. This view is labelled the "demand-following" hypothesis, since financial

markets grow and progress following the increased demand for their services from the growing real economy. Robinson (1952, p. 52) was of the opinion that where enterprise leads, finance follows. Therefore, economic development creates demand for financial services and the financial system responds automatically to these demands (Levine, 1997).

A side that takes a different approach, but same end with the demand-following hypothesis is that indicated by the Structuralists. Their model assumes the existence and importance of non-institutional finance in the sort of money lending and indigenous banking. It recognises the purpose of the informal financial sector in financial sector development, therefore underscoring the fact that financial dualism is a feature of the financial development process. Structuralists believe that stable macroeconomic policies stimulate growth and growth of the financial sector. The main prediction of the model is that economic growth and development determines financial sector development.

2.3.2 McKinnon-Shaw Model

The McKinnon-Shaw Model extends the supply-side argument by noting that financial development implies not only higher productivity of capital, but likewise a higher savings rate and thus, a higher mass of investment leading to growth (DeGregorio and Guidotti, 1995). The focal point of this model is on the issue of public policy regarding financial markets on savings and investment. They viewed financial development as being characterised by financial limitations. McKinnon (1973) and Shaw (1973), taking a neo-liberal position on the role of money in the development process argued that financially repressive policies in the form of nominal interest rate ceilings, controlled credit allocation and high reserve requirements were not only inefficient, but also the source of economic instability that reduced the volume of financial savings, the rate of real economic growth and the real size of the financial system relative to the non-financial sector in developing countries. Financial repression in this setting

is defined to entail artificially low deposit and loan rates that give rise to excess demand for loans and to non-price credit rationing (McKinnon, 1973; Shaw, 1973).

The McKinnon-Shaw model advocates for financial liberalization to accelerate economic growth and economic development. They contend that financial liberalization would improve the pace of economic growth through increased efficiency in financial intermediation subject to financial discipline (Acheampong, 2007). According to this model, interest rate ceilings distort the economy in four ways: bias in favour of current consumption and against future consumption, hence reducing savings below the socially optimal level; engagement in relatively low-yielding investments; bank borrowers are able to obtain all the funds they want at low interest rates and will choose relatively capital-intensive projects and the pool of potential borrowers contains entrepreneurs with low yielding projects who would not want to borrow at the higher market clearing interest rates (Fry, 1978).

McKinnon (1973) and Shaw (1973) sought to defend their proposal through the complementary and debt intermediation hypotheses. McKinnon (1973) on complementarity between money balances and physical capital, takes an outside model of money demand (money backed by loans to the government). He posits that due to underdeveloped financial markets in most developing nations, there are special opportunities for outside finance and all firms are limited to self-finance. Given that investment expenditures are lumpier than consumption expenditures, potential investors must first accumulate money balances prior to undertaking relatively expensive and indivisible investment projects. Shaw (1973) established his 'debt-intermediation' hypothesis on an inside money model. He contends that high, interest rates are essential in attracting more saving. With more supply of credit, financial intermediaries promote investment and raise output growth through borrowing and loaning. If valid, this McKinnon-Shaw thesis predicts a unidirectional causal relationship from financial development to economic growth and it will be prudent to concentrate attention on the

evolution and promotion of financial intermediation through the formation of financial establishments in order to advance sustainable economic development and growth.

All the same, since the 1980s, both the theoretical underpinnings and the empirical validity of the McKinnon-Shaw thesis have been disputed by several scholars. The neo-Structuralists led by Wijnbergen (1983) and Taylor (1983) contended that given that financial sector reform leads to increased mobilized savings, it may not facilitate economic growth. Economic activities would be induced if more of the growth in savings is channelled to productive activities. On the contrary, the gains of economic growth through increased credit to the private sector would be sidelined if the increased savings are used to finance public sector deficits (Wijnbergen, 1983).

Again, the implicit assumption that appears to underlie financial liberalization and for that matter the McKinnon-Shaw hypothesis is that markets will grow reasonably well when left alone. A rebuttal from Keynesian economics is the fact that markets are not necessarily self-equilibrating because of, among other matters, the role of expectations.

In an extension of this line of thought, Emenuga (2004) indicated that increased real interest rate may not inevitably contribute to improved private savings. In developing countries, the level of income could be so depressed that all or more than half of family earnings are spent on basic needs. In such a font, even with high real interest rates, very little if any percentage of income could be salvaged. This indicates that the McKinnon-Shaw proposition would therefore be more relevant in rich countries.

2.3.3 Endogenous Growth Model

Recent theoretical work has rekindled the debate and incorporated the use of financial elements in models of endogenous growth in an attempt to formally study the interactions between financial markets and long-run economic growth. The endogenous growth-finance theory

which follows the Schumpeter (1912)'s argument, emphasizes the role of the financial sector in promoting innovations, income distributions and the velocity of technological advancement, hence leading to long-term economic growth (King and Levine, 1993a).

Endogenous growth models by Romer (1986), Lucas (1988) and recently Barro (1991), Pagano (1993), Barro and Sala-i-Martin (1994) and Benhabib and Spiegel (2000) are modifications of those of the neoclassical models. They require that the financial sector promotes capital accumulation and productivity growth by: facilitating trading; hedging, diversifying, and pooling of risks; mobilizing savings; allocating resources to highly productive investment; monitoring managers and exerting corporate control; facilitating exchange of goods and services. The enhanced capital accumulation and productivity increase in turn influences long-run economic growth through two main channels: the volume of investment and the efficiency of investment.

Advocates contend that since capital accumulation may be financed by domestic savings, the financial sector influences long-run economic growth through the channel of increased intensity of investment and the economic efficiency of investment captures all other elements such as technology, human capital accumulation and improvement in the employment of factor inputs that influence growth (Greenwood and Jovanovic, 1990; King and Levine, 1993).

This model treats both financial development and economic growth as endogenous. It takes a positive two-way causal relationship between financial sector development and long-run economic growth signifying a feedback effect from economic growth to financial development. Greenwood and Jovanovic (1990) developed and introduced a good example in which both financial development and growth are endogenous. They debated in their framework that the role of financial institutions is to collect and analyse data to channel investible funds to investment activities with higher yields. They concluded by demonstrating that the process of

growth can stimulate development of financial resources and financial development could also stimulate growth.

Bencivenga and Smith (1991) presented a theoretical model which accounts that the development of banks increases economic growth by channelling savings to the activity with high productivity, but offering risky and illiquid assets, while allowing people to cut down the risk associated with their liquidity needs. Interestingly, they showed that even when aggregate savings are low owing to financial development, growth increases. They attribute this to the dominant effect financial development has on the efficiency of investment. Bencivenga, Smith and Starr (1995) argued that financial institutions reduce liquidity risk to which savers are exposed by making financial assets tradable or by enabling depositors to withdraw cash before it is mature (credit). This reduces the disincentive to invest in long-run projects. This also turns down the transaction costs in financial markets.

Endogenous growth theorists argue that the financial sector leads to economic growth through its effects on the efficiency of investment by: collecting and analysing costly information on entrepreneurs/investment projects; allocating credit to its highest productive use; enabling technological advancement; transforming the composition of savings to suit investment and funding of human capital formation. Only economic growth also influences the growth of the financial sector by creating the requirement for financial services, thereby enabling the universe of new financial products and deepening of the financial system. Advocates include: Schumpeter (1911), DeGregorio and Guidotti (1995), King and Levine (1993a), Greenwood and Smith (1997), Greenwood and Jovanovic (1990), Bencivenga and Smith (1991), Bencivenga, Smith and Starr (1995) among others.

2.3.4 Stern-Lucas hypothesis

Furthermore, the Stern-Lucas hypothesis or the ‘independent hypothesis’ denies any reliable causal relationship between financial development and economic growth. They hold that financial development is almost totally irrelevant for economic growth. Building on assumptions, Arrow (1964) and Debreu (1959), argued that in a world characterized by a complete set of state-contingent claims, with no information or transaction costs, there is no need for financial intermediation. In such a world, the Modigliani-Miller (1958) irrelevance hypothesis holds and institutions, especially financial institutions, do not matter. Stern (1989) completely ignored the role of financial development in the economic growth process. Concluding his survey of important literature in development economics, Stern (1989) listed a number of issues omitted from the survey that are worthy of future research but financial development was not even remarked in that list.

Similarly, Meir and Seers (1984) ignored the role of financial development in economic growth in their book which is a collection of essays by ‘pioneers of development economics.’ Robert Lucas, a Nobel Laureate in economics, seems to ascribe to this opinion. In a survey identifying the dynamics of economic growth, Lucas (1988) argued that economists have generally overstated the importance of financial markets in economic growth and that these markets at best play only a very minor part in the economic growth process. If valid, this Stern-Lucas proposition denies any reliable causal relationship between financial development and real economic growth (Darrat, 1999).

2.3.5 Theory of Banking

The business of banks, or banking, is a fuzzy subset of financial services. The function of banks can be distinguished as follows: On the one hand, Banks borrow money by having funds deposited on current accounts, by accepting term deposits, and by issuing debt securities such as bank notes and bonds. On the other hand, Banks lend money by making advances to

customers on current accounts, by making instalment loans, and by investing in marketable debt securities and other kinds of money lending. In an economy, the banking industry helps match the savings of the households with the investment requirement of firms because of the informational advantage. It is well recognized that banks acquire private information on monitoring loans. For instance, commercial banks inspect factory premises and stock list, or they might be privy to investment opportunities available to the firms. In contrast, households do not possess access to such information and they expend costly resources for any information on the firm. Banks exert a key influence on capital allocation, risk sharing, and economic growth.

Gerschenkron (1962), holds this influence to have been of capital importance. Gerschenkron's position regarding the role of banks in economic growth and development has contributed to a continuing debate. The significance of the effect of banking sector on economic performance is still far from proven. From a theoretical point of view, the idea of "scarcity of funds" could be useful in the study of economic growth: underdeveloped economies with a depressed degree of financial intermediation and a small, illiquid banking industry may be unable to channel savings efficiently. Banks can help by risk pooling. That is, by collecting savings from many people and putting them in a large diversified range of projects, a bank takes into account even small savers to take advantage of the law of large numbers and produce a reasonably safe rate of return. Well-functioning banks can channel savings toward the most efficient activities. Banks can also avail to alleviate agency problems by monitoring investors and making certain that they are making productive use of their loans (Aghion and Howitt, 2008).

The liberalization of the banking sector impacts on the domestic economic system via two different ways- the direct and indirect. On the one hand, foreign banks may encourage the economic growth directly. Foreign banks may (1) improve the quality and accessibility of financial services in the domestic financial market by enabling the greater application of more

modern banking skills and technology. Foreign banks bring innovative technology into the developing economy with little research cost. The invention will create new intermediate products, which are more productive than previous versions. In reality, there are large productivity differences across individual producers, a fact which means that growth is enhanced by having unequal employment of capital, with more being employed by the more productive individuals. The banking industry can therefore facilitate the growth process by allowing the more productive individuals to borrow from the less productive ones.

(2) Serve to stimulate the growth of the underlying bank supervisory and legal framework. Foreign banks bring new financial products and new technology which encourage authority to create a better legal framework for the financial activities. A mature financial legal system involves a larger cost from fraud. People are willing to save more, and thus work more available to investors, in a country with efficient and trustworthy banks than in a rural area where banks are likely to waste their depositors' wealth through bad loans.

(3) The foreign banks' entrance eases the external financing constraints that impede firms' expansion. Entrepreneurs are less probable to face a credit constraint because better supervisory and management skills involve a great cost of defrauding a creditor, which causes the creditor willing to lend more. This, in turn, encourages economic activities and outputs. At the same time, the competition between domestic and foreign banks decreases the interest rates which in turn decrease the fiscal price of borrowing.

On the other hand, the entry of foreign banks encourages economic growth by an indirect path. Since the number of banks in the economy increases, the competitiveness in the market rises. Increasing competition from foreign banks forces the domestic banks to drive up their viewing skills to the same stage as the foreign entrants, which leads domestic financial intermediaries to provide more dependable services in risk sharing, information, and liquidity.

Claessens, Demirguc-Kunt, and Huizinga (2001) and Bayraktar and Wang (2005) do empirical studies to indicate that an increasing foreign banks' share increases competition in the domestic banking sector by cutting prices, profits, and net interest margins. All of these factors are anticipated to spur economic development. Productivity improves through resource reallocation from inefficient banks to more efficient ones. The apportionment of credit to the private sector may also be improved since it is anticipated that the valuation and pricing of credit risks will be more sophisticated (Clarke, Cull, and Martinez, 2001; Barth, Caprio, and Levine, 2003).

Even under the neoclassical theory of growth, improved efficiency will push the economy to grow faster as the domestic banks move towards the technological frontier. According to the AK (endogenous growth) theory, greater efficiency will permanently enhance the speed of growth. The theory can be easily explained by considering this equation:

$$\frac{\bar{K}}{K} = \frac{sY - \delta K}{K}$$

Where sY denotes the aggregate savings, δK denotes the aggregate depreciation of capital, K denotes the capital, \bar{K} denotes the capital accumulation. For a given \bar{K}/K (the economic growth rate in the endogenous theory) is positively related to Y , so bank inefficiency, by lowering Y for any given K , also lowers growth.

Lehner and Schnitzer (2008) examine the impact of foreign banks on host nations. They categorize the effects of foreign banks into two different channels, spillovers and competitiveness. Spillovers may occur when domestic banks get their staff trained abroad or when domestic staff who have been employed and trained by foreign banks fluctuates to domestic banks. The return of high quality financial services provided by foreign banks may make a further channel for spillovers. In addition, spillovers may be made through the execution of better risk management techniques, superior forms of organization or better

information processing technologies.

Moreover, foreign banks are likely to push for an improved regulatory supervision of the banking markets they enter. Regarding competitiveness, they explain these channels by putting up a model of spatial bank competition. Banks compete in prices for potential borrowers that engage in investment projects of uncertain return. In their model, banks differ with respect to screening abilities.

Consider a continuum of borrowers uniformly distributed along a circular route. Each borrower can engage in one investment project that need an initial spending. Borrowers are not empowered with any initial wealth and consequently require to apply for credit at the banks, the only source of finance. Borrowers have either good or bad projects. Individual borrowers know about the quality of their own investment projects. If the project is beneficial, it generates a return with certainty while a bad project always fails, generating no return. The yields of the projects are observable and contractible. The banking sector consists of n banks that are located equidistantly along the circular route. Banks compete in the repayments which they simultaneously ask from the borrowers. Borrowers whose investment projects yield a return must repay to the bank, whereas borrowers whose projects fail do not repay their loan. If banks in the closed domestic banking market do not have access to a screening technology, then all borrowers are offered a loan. Each bank disposes of enough funds to finance all borrowers applying for a loan, and banks can observe the location of borrowers. Borrowers base their decision at which bank to apply for credit on the repayments required by the banks and the transport costs they have to incur to travel to the bank. Assume that transport costs are proportional to the distance between the borrower and the bank. Then look at the position where the domestic banking market is opened up to a number of foreign banks. Assuming that foreign banks possess perfect screening ability, consequently, foreign banks, finance all borrowers with good projects that ask for credit, whereas a borrower with a bad project is never offered a loan.

Spillover effects are modelled as follows. With the introduction of foreign banks, domestic banks obtain access to an imperfect screening technology. Domestic banks can therefore identify a fraction of borrowers investing in bad projects, but cannot tell between the remaining fraction of borrowers with bad projects and the borrowers with good projects. Consequently, domestic banks, finance a fraction of borrowers investing in bad projects as easily as all borrowers with good projects applying for credit.

Nevertheless, the other fraction of borrowers with bad projects is denied recognition. Hence, the higher is the spillover effect, the better is the quality of the screening technology the domestic banks obtain and the lower is the fraction of borrowers with bad projects financed. Domestic banks also hold the possibility to invest a fixed cost in order to get the perfect screening technology. This decision is taken simultaneously by all domestic banks. Hence, domestic banks need to count the size of the fixed monetary value against the monetary values connected with the financing of borrowers with bad projects they do not put in the perfect screening technology. As a consequence, the situation in the open domestic banking market looks as follows.

Three types of banks can operate in this market: foreign banks, domestic banks that possess the perfect screening technology, and domestic banks that only screen imperfectly. With rising spillover effects, even those domestic banks that do not invest in perfect screening are able to identify a larger fraction of borrowers with bad projects. This, in turn, sets aside the banks to become more effective in the sensory faculty that they can decrease the repayment they ask from the borrowers because the losses from bad projects are reduced. So spillover effects have a positive influence on the overall efficiency of the domestic banking market.

These effects are compounded, as Lehner and Schnitzer show, by the increased number of banks in the business. An increasing number of banks lead to lower equilibrium repayment

rates as easily as to lower market shares of all banks, which in turn increases the efficiency of the whole industry.

2.4 Empirical Review

2.4.1 Foreign Banks' share and Economic Growth

Banking as the largest financial sector in most countries absorbs the most attention. Empirical studies investigating both direct and indirect links between foreign banks and growth find a mixture of results. For example, Demirguc-Kunt, Levine, and Min (1998) did not find any direct link between foreign banks and long-run economic growth after controlling for other factors associated with growth. One observation based on descriptive analysis is that the degree of openness to foreign bank entry varies a great deal, which is not correlated with average income levels or with GDP growth (Bayraktar and Wang, 2004).

However, Bayraktar and Wang (2008) re-examined the direct and indirect links between foreign bank entry and economic growth for 28 developing and developed countries using Generalized Method of Moment (GMM) dynamic panel technique. They establish that the asset share of foreign banks has an economically and statistically significant positive effect on the growth rate of GDP per capita after controlling for other determinants of growth, indicating a direct link between the two variables. Likewise, the results implied that there is an indirect link between the entry of foreign banks and growth in a way to support previous empirical findings. The first stage results showed that a higher percentage of foreign banks lowers overhead costs and net interest margins of domestic banks, indicating higher efficiency. The second stage also showed that a higher efficiency increases economic growth. Both sets of results imply that the presence of foreign banks may help improve economic growth.

Scholars such as Terrell (1986), Bhattacharaya et al. (1997), McFadden (1994), Levine (1996), Claessens and Jansen (2000), Claessens et al. (2001) have all conjectured that increases in

foreign bank entry into domestic banking sector increase competition, which compels domestic banks to operate more efficiently. The increment in the foreign banks may encourage domestic banks to cut their costs, increase efficiency and increase the variety of financial services through competition. Levine (1996) asserts that with the presence of foreign banks, the domestic banks are pressured to improve the quality of their services in order to keep their market shares.

Furthermore, Claessens, Demirguc-Kunt, and Huizinga (2001) and Bayraktar and Wang (2005) indicate that an increasing share of foreign banks increase competition in the domestic banking sector by cutting prices, profits, and net interest margins. A higher degree of competition in domestic financial markets increases the efficiency of them, which leads domestic financial intermediaries to provide more dependable services in risk sharing, information, and liquidity. All of these factors are anticipated to spur faster economic growth due to their effects on the development level of financial markets. For example, King and Levine (1993a, b) present evidences that financial development and growth are linked. They use two indicators of financial development, which are liquid liabilities of the financial institutions and the share of the deposit-bank domestic credit in total domestic credits, both of which are related to growth. Demirguc-Kunt, Levine, and Min (1998) indicate that increased efficiency in the domestic banking sector, which is captured by lower overhead expenses, is a statistically and economically significant determinant of economic growth.

Also, Claessens et al. (2004) found that increases in the number of foreign banks in a country impose competitive pressure with resulting efficiency gains for the domestic banks in the nation. Therefore, the foreign bank presence may engender an improvement in the quality of financial services provided by the domestic banks and also put old-style banking practices under pressure and ultimately force such old practices out of domestic banks.

In the case of Ghana, Saka et al. (2012) focused on the effects of the entry of foreign banks, and changes in bank concentration on the technical efficiency of domestic banks in Ghana over the period 2000–2008. Technical efficiency scores were obtained from the Data Envelopment Analysis. Then, Tobit regression was estimated to examine the impact of hypothesized explanatory variables on bank efficiency. The foreign bank share of total industry assets was used to proxy the impact of foreign banks. The findings indicate that efficiency of domestic banks has been positively affected by the presence of foreign banks and reduction in concentration. Therefore, the central bank's policy of liberalizing the banking sector looks to be comfortably positioned.

Buchs and Mathisen (2005) establish that the Ghanaian banking industry holds a non-competitive market structure. They indicated that this may be hampering financial intermediation. They also stated that, this structure, as well as the other market characteristics, forms an indirect barrier to entry, thereby shielding the large profits in the Ghanaian banking system.

Akoena et al. (2008) studied what would occur when banks become bigger. In order to assess this objective, they looked at technical efficiency and economies of scale of Ghanaian banks. The issue for them was: have large banks been more effective than small banks? Utilizing the non-parametric approach of data envelopment analysis, their findings revealed that the technical efficiencies of large banks on one side and small banks on the other side are similar. Further, they established that small banks have larger scale efficiencies than the big banks. The significance of this is that (on the average at least) the large banks in Ghana are more removed from the point of their lower average costs than smaller banks. In the final analysis they cautioned that the central bank should be careful about encouraging banks to get bigger if its objective is to improve scale efficiency.

In sum, given a positive direct and indirect effects of foreign banks in domestic financial markets, we expect to see that as the share of foreign banks increases, economic growth improves as well.

2.4.2 Bank Market Structure and Economic Growth

The role of the banking system includes screening and allocation of credits to highly productive entrepreneurs. The ability of banks to perform this function effectively depends on the market structure of the banking industry. Even so, theorists of banks' market structure are divided as to which type of market structure would cause the banking system more effective in allocating credit to firms to improve capital accumulation and thus growth. Cetorelli (2001) presented these opposing opinions and concluded that, an oligopolistic banking market will represent a fair balance between enhancing credit allocation and achieving banks' efficiency because of the trade-off between credit allocation and efficiency than the extremes of monopoly and perfect competitive banking marketplace. Such a balance should be the one that channels available credit to growth oriented sectors.

According to Petersen and Rajan (1995), banks would maintain credit relationships with unknown entrepreneurs only if they could enjoy some market power within the industry, so enabling them to strategize to partake in the profits of those entrepreneurs later. Banks enjoying market power would initially turn on lower rates to attract more entrepreneurs to make long run relationships with them. When these entrepreneurs are successful, market power banks would be in a position to charge higher rates to extract some of the profits. For banks to provide credit to relatively unknown firms in a competitive environment, they must satisfy themselves that they would be capable to make long term relationships with successful entrepreneurs.

Nevertheless, it is more likely that successful entrepreneurs would seek cheaper credits in the competitive marketplace, thereby increasing the risk of lenders. The competitive banking

environment would therefore screen out bad entrepreneurs and offer credit to potentially viable entrepreneurs, or instead, higher risk firms would suffer to pay high premium for credit to indemnify the risk taken in allocating credit to them. Therefore, a monopolistic banking environment would allocate credits more effectively and efficiently than a competitive environment.

On the other hand, Guzman (2000) contended that, there is a negative relationship between market power and economic growth. Guzman compared two similar economies, one with monopolistic bank and the other with competitive banking sector and concluded that the former has an inhibiting effect on capital accumulation. This is because the monopolist banker rations credit conditions than his competitive counterpart. Credit ration reduces excessive monitoring and improves the efficiency of the market power banking system. This flows from the fact that loan rates are higher with the monopolistic banks, which increases the likelihood of higher default. According to Cetorelli (2001), eventually market power banks would have to incur higher cost to monitor entrepreneurs thereby reallocating resources for lending.

Shaffer (1998) explored how competitive banking environment could be harmful to banks' screening process. According to Shaffer (1998), as the number of banks increases the possibilities of bad credits abound. It follows that, such credits are unlikely to be translated into capital accumulation for growth to occur. Likewise, as the number of banks expands, banks do not possess the incentive to screen entrepreneur because screening is time consuming and entrepreneurs would not wait to be screened if alternative source of credits are usable. Banks would, therefore, grant credit "any how" in a haste not to lose out potential profitable transactions (Dell'Araccia, 2000). Instead, if banks perceive screening and collateralization as substitutes and so they will be content with calling for entrepreneurs to create collateral for credit instead of the rudiments of extensive screening of entrepreneurs to avoid risk (Manove, Padilla and Pagano, 2000).

According to Cetorelli (2001), the essence of the banking market structure on economic growth emanates from two angles. First, fewer number of banks reduce the quantity of credit available to entrepreneurs. Second, fewer number of banks increase the incentive to screen and make available a larger proportion of funds to high quality entrepreneurs efficiently. There is a trade-off between the size of the credit market and the efficiency with which banks allocate credit. The size and efficiency of the credit market affect economic growth by determining the returns to capital accumulation, which translate into savings.

Cetorelli (2001) stressed that, the market structure that enhances the balance between the size and efficiency of the credit marketplace to reach the steady state income per capita is an oligopolistic market rather than the extremes of monopoly and perfect competition.

Thus, it is a certainty that market structure has impacts on economic growth through credit allocation which translates into capital accumulation. Banks also impress upon entrepreneurs to engage in economically viable projects through their monitoring and screening process. Simply, the market structure that maximizes the balance of both credit rations and efficiency is that of oligopolistic competition, where contestability is high. This statement is yet open to empirical verification.

Hence, theoretical underpinnings of the issue of bank competition on economic growth conclude that both the extremes of monopoly and perfect competition impact upon economic growth negatively (Cetorelli and Gambera, 2001; and Cetorelli, 2001). For example, Guzman (2000) argues that bank market power reduces equilibrium credit, thereby generating a negative effect on economic growth. On the other hand, Petersen et al. (1995) indicates that banks with market power can contribute to even informational opaque entrepreneurs, thereby lowering credit rations associated with competitive banking.

Empirical evidence on the positive role of a concentrated banking structure and economic growth abounds. Berger, Hasan and Klapper (2004), employed data from both the developed and developing countries and found that greater market shares and efficiency ranks of small, private, domestically owned banks are associated with greater economic performance, and that the marginal benefits of the highest shares are greater when these banks are more efficient. They observe that, the more competitive banking system breeds efficiency in financial intermediation, which can be more encouraging on economic growth, should the necessary regulatory mechanisms be put in place.

According to Boyd, De Nicolo, and Jalah (2009), competition in banking is a tool to fight bank failure. They first developed a model in which banking competition has positive effects on both loans and assets, but the ambiguous effect on loan-to-asset ratio. Nevertheless, by using these predictions empirically on samples, 2500 U. S. banks in 2003 and a panel data set of about 2600 banks in 134 non-industrialized countries for the period 1993-2002, they found that in both instances, bank competition is negatively linked to bank failure. When competition is high, the probability of bank failure is low. They emphasized that various steps of loan losses employed responded negatively with measures of bank competition.

Bank competition, therefore promotes bank stability, increasing the willingness of banks to lend more. If the willingness of banks to lend more extended to even little known entrepreneurs, more credits would go to these entrepreneurs. Credit ration would reduce under such competitive environment. This stands contrary to the theoretical underpinnings that competitive banking increases credit ration to relatively unknown entrepreneur, thereby imposes negative effect on investments and growth (Petersen et al., 1995).

Similarly, Clougherty (2009) suggested that budgetary commitment to anti-trust institutions encourages improved economic growth. Antitrust institutions fight collusions and any attempts

to smother competition. By implication, if the government devotes more resources to maintain competition in all sectors, economic growth would be improved.

Investigating the relationship between banking market structure and economic growth, DeGuevara and Maudos (2007) provided evidence that supports Petersen et al. (1995) suggestion that banks with some market power have incentives to make long lasting relationships with the borrowers to overcome informational problems and facilitating access to credit, reducing financial constraints. In their study, they used dataset on manufacturing industry-level growth rates and banking market concentration for U. S. States for the period 1899 to 1929. It was found that, bank market concentrations have positive effect on the growth of the manufacturing sector in the early years of the twentieth century. In addition, they found that increased branch banking and more banks per capita improves growth of industries that rely on banks for external finance. They stressed that, bank entry regulations have independence effects on the growth of the manufacturing industries. These suggest that the impact of bank market structure on economic growth through the growth of industries is ambiguous.

A competitive banking system helps lower transaction costs and risks. It also helps to make financial markets more efficient. In Ghana, Aryeetey (2001), found that the country's financial reforms resulted in interest rate liberalization, the removal of credit ceilings and other quantitative controls restructuring and recapitalization of banks, privatization of state owned banks, regulation and supervision, development of monetary and capital markets and support for informal finance and microfinance. This entails that the financial liberalization in the 1980s brought some sort of efficiency within the banking sector. However, unstable economic circumstances like inflation, high interest rates, etc., have bedevilled the growth of the banking sector. Naturally, the influx of more banks into the Ghanaian banking system will increase competition. In addition, inflation and interest rate volatility as well as increased regulations in

the past decade should breed financial innovations. Nevertheless, studies linking these developments in the banking system of Ghana to economic growth appear limited to the best of the researchers' knowledge.

Examining the finance-growth nexus in Ghana, Idun and Aboagye (2014) employed the ARDL cointegration procedures to establish both short-term and long-run relationship between bank competition, financial innovations and economic growth using quarterly data from 1990 to 2009. The results showed that, in the long run, bank competition is positively related to economic growth. In the same token, bank competition is negatively related to economic growth in the short run.

In Ghana however, observers believe that the banking industry is not competitive and point to the huge spread between bank lending and borrowing rates as evidence (Aboagye, Akoena, Antwi-asare and Gockel, 2008). The Ghanaian banking industry is analysed for evidence of market power by computing the Lerner Index of banks using quarterly data from 2001 to 2006. The evidence is that Ghanaian banks possess market power. Factors that significantly explain the market power of Ghanaian banks are: bank size, efficiency of banks with respect to staff costs, the macroeconomic environment and time (Aboagye et al., 2008). Similar evidence was found by Buchs and Mathisen (2008). In their search for answers to the degree of market power of the

Ghanaian banking system, they resolved that the Ghanaian banking system is uncompetitive in structure, thereby hampering financial intermediation. This development is explained by factors such as, bank size, persistent needs of the government for funds from the banks, high investment cost on telecommunication in Ghana, barriers to competition on interest revenue and losses on the loan portfolio.

2.5 Conclusion

This chapter reviewed relevant literature on the Ghanaian banking system and discussed the various stages that banking in Ghana has passed through over the years as well as theoretical and empirical work on the finance-growth nexus. It was observed that a relatively large number of banks are active in the Ghanaian banking sector. In addition to universal banks, rural and community banks, which are much smaller than universal banks, but also much more numerous play an important role. The products, services and policies should promote within the industry, efficiency and competition, financial deepening and enhance transparency. This will culminate in the promotion of the development of the banking industry and reduce asymmetric information problems.

The theoretical literature illuminated many channels through which the emergence of financial instruments, markets and institutions affect and are affected by economic growth. However, the results of empirical studies on the nature of relationships between the share of foreign banks, bank competition and economic growth are inconclusive as a consequence of using a variety of proxies as well as the choice of econometric method. According to Levine (2004) and as the review discloses, a growing body of empirical studies shows a strong positive link between the operation of the financial system and economic growth.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

A review of literature reveals that various estimation methods have been employed in analysing the impact of foreign banks on economic growth. Some researchers have applied estimation techniques such as a cross-country regression method (Demirguc-Kunt, Levine and Min, 1998), simple correlation (Bayraktar and Wang, 2004) and the generalized methods of moment (GMM) (Bayraktar and Wang, 2008). Nevertheless, the literature indicates that the choice of the estimation technique used in a study depends on the variables and the purpose of the study. For the above motive to be accomplished, this chapter specifically presents a detailed description of the theoretical and empirical specification of the model, variables in the model, source and data type, estimation techniques as well as instruments for data analysis.

3.2 The Theoretical Model

The neoclassical growth model postulates that economic growth is a function of technical progress in the long run (Solow, 1956). With this assertion no room is given to other factors that may influence growth, for instance financial development. Beyond the neoclassical proposition are the arguments by two economists: McKinnon (1973) and Shaw (1973) who advocated for an unhindered more liberalized financial system, which would contribute to more growth.

In the same token, the endogenous growth literature also predicts a positive relationship between financial depth, financial innovation, real income, investment and real interest rate (King and Levine, 1993). Well-developed financial markets promote investment and growth by channelling financial resources to the most productive uses. Similarly, Petersen et al. (1995),

Guzman (2000) and Cetorelli (2001) stipulate that market structure of all forms reinforce economic growth. Given these theoretical postulations, we considered an algebraic representation of the simplest endogenous growth model - the 'AK' model by Rebelo (1991) which assumed that labour is maximised. The assumption of maximized labour is in place because Ghana does not suffer a dearth of labour (Frimpong et al. 2010). Hence we state that:

$$Y_t = AK_t^{\beta_1} \quad (1)$$

Where Y_t denotes the aggregate output at time t , K_t is the investment at time t , while A denotes total factor productivity growth (TFP). The TFP captures growth in production due to other factors other than increase in physical input (capital) in the growth model. Given that TFP is endogenously determined, the endogenous growth literature argues that financial development and bank competition affects growth not only through capital accumulation but also through the TFP channel. This channel, suggests that an efficient financial system affects growth by facilitating the adoption of modern technology to boost development of the knowledge and technology-intensive industries. The endogenous growth model thus provides a flexible platform for a large number of factors to affect economic growth through the TFP. However, due to data availability and following the empirical specifications in Demirguc-Kunt et al. (1998) and Bayraktar and Wang (2008), the study examined the following variables of interest resulting in:

$$A = f(FS, CR_5, FDM, GEX, INF, TOP) = FS^{\beta_2} CR_5^{\beta_3} FDM^{\beta_4} GEX^{\beta_5} INF^{\beta_6} TOP^{\beta_7} \quad (2)$$

By substituting (2) into (1), we obtain:

$$Y_t = K_t^{\beta_1} FS_t^{\beta_2} CR_{5t}^{\beta_3} FDM_t^{\beta_4} GEX_t^{\beta_5} INF_t^{\beta_6} TOP_t^{\beta_7} \varepsilon_t \quad (3)$$

3.3 Empirical model specification

Consistent with the objectives of the study and in accordance with the literature, the study established the relationship between the share of foreign banks and bank competition on one hand and economic growth on the other hand, estimated a linear model of the following form:

$$Y_t = \beta_0 + \beta_1 K_t + \beta_2 FS_t + \beta_3 CR_5_t + \beta_4 FDM_t + \beta_5 GEX_t + \beta_6 INF_t + \beta_7 TOP_t + \varepsilon_t \quad (4)$$

Where Y is economic growth, K is investment, FS is share of foreign banks, CR_5 is five-bank concentration ratio, FDM is financial deepening, GEX is government expenditure, INF is inflation and TOP is trade openness.

The coefficients $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$, and β_7 are elasticities of their respective variables, β_0 is the constant component, t denotes time and ε is the error term. We expect $\beta_0, \beta_1, \beta_2, \beta_4, \beta_5$ and $\beta_7 > 0$ but β_3 and $\beta_6 < 0$.

3.4 Justification and measurement of variables

Measuring Economic Growth

Economic Growth refers to steady growth in the productive capacity of the economy over time. It is usually used as a measure of the level of growth of a country. Levine (1997) proposed several potential indicators for economic growth: GDP per capita growth, average per capita investment growth and productivity increase. However, adopting from Bayraktar and Wang (2008), we use GDP growth as the measure for economic growth. Aggregates are based on constant 2005 U.S. dollars. GDP is the total of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources (WDI, 2014).

Measuring Foreign Banks' share

This is the ratio of the number of foreign banks to industry banks. According to Claessens et al. (2001), a bank is classified as foreign if at least 51 percent of its shares are foreign-owned. This is in line with Ghana PricewaterhouseCoopers' classification of foreign banks based on majority ownership of shares. This study used foreign banks' share to establish the direct impact of foreign banks on economic growth. A positive sign is expected, since an increase in the presence of foreign banks in a market may reduce the cost of financing, in turn, increase capital accumulation and economic growth.

Measuring Banking Sector Competition

This study proxy competition by structural measure such as the five-bank concentration ratio (CR_5). It is defined as the fraction of total industry assets managed or controlled by the five largest banks in the industry. In other words, the index decreases as the degree of competitiveness increases. This study used the five-bank concentration ratio to establish the indirect impact of foreign banks on economic growth.

Other variables in the Model

Investment (K) is measured by the share of gross capital formation to GDP and is expected to exert a positive impact on GDP growth. The higher the rate of investment, the higher the growth rate of the Ghanaian economy, all things being equal. This is in line with both the neoclassical and endogenous growth predictions.

Inflation (INF), as measured by the consumer price index reflects the yearly percent change in the cost to the average consumer of acquiring a set basket of commodities and services. Theoretically, inflation increases the cost of borrowing for investment activities leading to a reduction in productivity and staggered growth. Therefore, this study augments the efficiency factor by including inflation as a measure of macroeconomic stability and prudent economic

management. Inflation measures the level of uncertainty about the future market environment, firms becoming more reluctant to attain long-run commitments in the presence of higher price variability; the expected sign of this variable is thus negative.

Financial Depth An indicator of banking activity was employed to estimate the impact of financial deepening on economic growth. The variable computed as the ratio of credit to the private sector to GDP (*FDM*) is the credit extended to the private sector by universal banks. This ratio stresses the importance of the role played by the financial sector, especially the deposit money banks, in the financing of the private economy. It isolates credit issued to the private sector from the credit issued by governments, government offices, and public enterprises. Besides, it excludes credit issued by the Central Bank (Levine et al., 2000).

A high *FDM* indicates a higher level of domestic investment, indicating higher output holding everything else constant. *FDM* has been used extensively in numerous works (Beck et al., 2000; Demetriades and Hussein, 1996; King and Levine, 1993a).

Government expenditure is government acquisition of goods and services for current or future use (Shim et al., 1995). Government spending, according to the Keynesian proposition is expected to promote economic growth. Given that all things remain constant, government consumption will increase GDP since it contributes to current demand. It will also have the same positive feedback loop on GDP as private consumption itself has, because it increases GDP which is a determinant of total consumption. This study accounts for the burden of government through a proxy, namely, the ratio of government expenditure to GDP. Consequently, the study expects the coefficient of government consumption to be positive.

Trade openness is proxied by an international trade policy variable, i.e. the trade to GDP ratio, with an expected positive coefficient. Higher openness enhances economic growth through higher competition and technological progress (Winter, 2004).

3.5 Sources of data

The study employed mainly secondary sources of information for its analysis over the period of 1960-2013. The bank level data were extracted from the year-end income and balance sheet statements of the banks (Bank of Ghana) and World development indicators (World Bank, 2014) for data on macro-economic variables. Other sources of information were reviewed to augment the data required when those provided by the Bank of Ghana annual reports and World Development Indicators were not up to date. These included the Annual banking surveys by PricewaterhouseCoopers (PwC), Economic surveys of Ghana by the Statistical service, as well as Ziorklui (2001) which tabulated market shares of the banks from 1990 to 1997. This helps to ensure good data quality. Table 3.1 provides a summary of data source and measurement of the variables involved.

Table 3.1: Variable measurement and data sources

Variables	Measurement	Data sources
Y	Growth rate of GDP (Annual, %)	World Development Indicators
INV	Gross capital formation/GDP	World Development Indicators
FS	Number of foreign banks/Industry banks	Calculated from annual reports on the banks (BoG & PwC)
CR ₅	Asset share of five largest banks/Industry assets	Calculated from financial statements of the banks (BoG)
FDM	Bank credit to private sector/GDP	World Development Indicators
GEX	Government expenditure/GDP	World Development Indicators
INF	Consumer Price Index	World Development Indicators
TOP	Trade/GDP	World Development Indicators

3.6 Estimation techniques

Available literature suggests that the majority of the time series macroeconomic data are non-stationary or have a unit root (Nelson and Plosser, 1982). A non-stationary series, according to Harvey (1990) is one where the moments (mean, variance and covariance) of the distribution from which series observations were drawn are time-varying; they depend on the point in time at which the observations were realized. The regression of non-stationary series on the other non-stationary series is most likely to generate spurious regression results. There are two techniques that can be employed to avoid spurious regression results:

1. Cointegrating technique which was advocated by Granger and Newbold (1974), or
2. Transforming data to make it stationary before applying the Classical Regression techniques.

Thus, this study focused on the cointegration technique which serves to analyse the long-run relationship between economic variables. Finally, the error correction model was also established to track the short-run dynamics of the variables under consideration.

3.6.1 Cointegration Test

The purpose of cointegration estimation is to decide whether a stationary linear combination of two (or more) non-stationary variables exists (Haley, 1995). This requires testing for the existence of a stable or a long-term equilibrium relationship between the variables. As noted by Shahbaz et al. (2008) cointegration tests can be taken by using the Engle-Granger (1987) two-stage procedure, autoregressive distributed lag (ARDL) approach proposed by Pesaran et al. (2001) or the Johansen maximum likelihood approach (Johansen 1988; Johansen and Juselius, 1992). In particular, Johansen (1988) and Johansen and Juselius (1992) developed multivariate methods that explicitly apply the vector autoregressive method (VAR) for the testing and estimation of cointegration (or long-run) relationships among non-stationary data.

The VAR provides a useful framework for the investigation of both long-run (cointegration) relationships and short-run dynamics (via an equilibrium correction model, the ECM) of the variables in the system. The Johansen-Juselius estimation method is based on the error-correction representation of the VAR model with Gaussian errors (Hondroyiannis, et al. 2004). Therefore, Johansen (1988) and Johansen–Juselius (1992) technique will be used to test for the cointegration among the variables since the study is a multivariate one. The Johansen-Juselius vector error correction (VECM) representation of a VAR (p) model, of lag length p , can be written as:

$$\Delta X_t = \Pi X_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta X_{t-1} + \Psi + D_t + \varepsilon_t \quad (5)$$

Where X_t is a ($n \times 1$) vector composed of non-stationary variables, Π and Γ_i are ($n \times n$) matrices of coefficients, D_t is a vector of deterministic variables such as constant, trend and dummy variables, ε_t is a ($n \times 1$) vector of normally and independently distributed error terms with zero mean and non-diagonal covariance matrix, Σ . The rank of the matrix (Π) gives the dimension of the cointegrating vector.

Provided that the variables are (at most) cointegrated, the equation (5) will be reparameterized. If the rank of the matrix, r is ($0 < r < n$), then Π can be decomposed into $\Pi = \alpha\beta'$ where α , β are ($n \times r$) matrices containing the adjustment coefficients and the cointegrating vectors respectively. Hence the equation (5) reduces to:

$$\Delta X_t = \alpha\beta' X_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta X_{t-1} + \Psi + D_t + \varepsilon_t \quad (6)$$

This implies that $\alpha\beta'X_{t-1}$ contains all the long-run information on the process of X_t . Therefore, emphasis will be on the ($n \times r$) matrix of cointegrating vectors, β , that quantify the long-run relationships between the variables in the system and the ($n \times r$) matrix of equilibrium correction coefficients, α , elements which load deviations from this equilibrium (i.e. $\beta'X_{t-1}$) into

ΔX_t for correction. Specifically, the rows of β are interpreted as the distinct cointegrating vectors and the rows of α are loading factors which indicate the speed of adjustment of the dependent variables towards the long-run equilibrium state. The Γ_i coefficients in (6) estimate the short-run effect of shocks on ΔX_t , and thereby allow the short-run and long-run responses to differ. Appropriate lag length (p) is defined using standard model selection criteria (AIC and SBC) to whiten the errors.

3.6.3 Error Correction Model

The second step of the cointegration estimation is the error correction model. The tight link between cointegration and error correction models stems from the Granger representation theorem. Using this theorem, a set of integrated time series that are cointegrated have an error correction representation, and a set of time series that are error correcting are cointegrated (Engle and Granger, 1987). This implies that when integrated series are cointegrated the appropriate procedure for estimation is the error correction model. The short run error correction model is captured by differencing the dependent and independent variables once and including the lagged value of the long-run relationship.

The error correction model (ECM) for the VAR can be defined as follows:

$$\Delta y_t = \sum_{i=1}^k \gamma_i \Delta y_{t-i} + \sum_{i=0}^k \beta_i X_{t-1} + \alpha ECM_{t-1} + \eta_t \quad (7)$$

Where y_t and X_t represent the series of cointegrated variables, ECM_{t-1} is a lagged value of the estimated error term from the cointegrated equation(s) and the parameter, α of the error term shows how changes in Δy_t react to deviation from the long-run equilibrium. The error correction model works with stationary data. If the variables are cointegrated the error term(s) from the cointegrating regression (η_t) can be used as the error correction mechanism. Akaike

Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC) is to determine the optimal lag length, k .

3.7 Data analysis

The study employed descriptive and quantitative analysis. Charts such as tables were utilized to aid in the descriptive analysis. Furthermore, the study adopted the multivariate Johansen's maximum likelihood econometric methodology for cointegration introduced and popularized by Johansen (1988), Johansen and Juselius (1990) and Johansen (1991) to obtain both the short and long run estimates of the variables involved. All estimations were carried out using Econometric views (Eviews) 7.2 package.

3.8 Conclusion

This chapter developed and presented the methodological framework suitable for conducting the study. The model was developed from the theoretical formulations of the endogenous growth theory. Specifically, the study adopted the augmented form of the simplest endogenous growth model by Rebelo (1993). Annual time-series data on GDP growth, ratio of number of foreign banks to industry banks, five-bank concentration ratio, gross capital formation to GDP ratio, bank credit to private sector to GDP ratio, government expenditure to GDP ratio, inflation and trade to GDP ratio from 1960 to 2013 was employed for the study. Furthermore, Johansen cointegration test and VECM were utilized to analyse the long-run and short-run dynamics among the variables.

CHAPTER FOUR

ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

The purpose of this study is to examine the relationship between foreign banks' share, bank competition and economic growth. This chapter, therefore, presents and discusses the results from the study. The results of the descriptive statistics of the variables, and Johansen's approach to cointegration are presented and discussed. These results are discussed in relation to the hypotheses of the study.

4.2 Descriptive statistics

The study conducted the summary statistics of the variables concerned. Table 4.1 depicts these statistics. It can be noted from Table 4.1 that all the variables have positive average values (means). Over the study period, GDP observed a yearly growth of 3.577 percent, while the average inflation rate was 27.224 percent. The 54-year period studied indicates that the foreign share of total banks averaged 40.595 percent, whereas the fraction of total assets managed by five-largest banks in the banking sector averaged 81.485 percent.

The wide variation of the variables from their means with the exception of GDP growth and inflation as is shown by the standard deviation gives indication of high growth rate of these variables over the period.

The Jarque-Bera statistic shows that the null hypothesis that the series are drawn from a normally distributed random process cannot be rejected for five-bank concentration ratio (CR_5), investment (K), financial deepening (FDM) and trade openness (TOP). The rest of the variables are not normal.

Table 4.1: Summary Statistics of the variables, 1960-2013

Variable	Observations	Mean	Std. Dev.	Jarque-Bera		Minimum	Maximum
				Statistic	Prob.		
GDP growth	54	3.577	4.497	23.419	0.000	-12.432	15.007
Foreign share of total banks	54	40.592	10.711	6.099	0.047	28.571	66.667
Five-bank concentration ratio	54	81.485	16.801	5.081	0.079	45.000	100.000
Investment	54	16.486	7.519	2.093	0.351	3.378	32.937
Financial Deepening	54	7.897	4.390	4.222	0.121	1.542	15.996
Government Expenditure	54	11.759	2.598	15.830	0.000	5.861	20.987
Inflation	54	27.224	27.478	85.945	0.000	-8.422	122.875
Trade Openness	54	54.199	27.878	2.733	0.255	6.320	116.048

Note: Std. Dev. represents Standard Deviation and Prob. denotes Probability values.

4.3 Long-Run Equilibrium Relationship

The long-run relationship between the share of foreign banks, bank competition and economic growth including the other determinants of economic growth was established using the Johansen's cointegration test. Contributing to the significance and rational for cointegration analysis, Johansen (1991) argued that cointegration can be used to establish whether there exists a linear long-term economic relationship among variables of interest. Pesaran and Shin (1995) added that cointegration enable researchers determine whether there exists disequilibrium in various markets. In this regard, Johansen (1991) asserts that cointegration allows us to specify a process of dynamic adjustment among the cointegrated variables and in disequibrated markets.

At 5% significance level, both the trace and maximum eigenvalue statistic indicate one

cointegrating equation among the variables.

The existence of one cointegrating vector in the test implies that there is a stable, long-run relationship among the variables. That is to say the share of foreign banks, bank competition and economic growth, including the other determinants of economic growth variables have long-run relationship.

Table 4.2: Johansen's cointegration test (Trace) results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob. **
None *	0.620466	184.5521	169.5991	0.0063
At most 1	0.536971	134.1740	134.6780	0.0535
At most 2	0.459591	94.13572	103.8473	0.1843
At most 3	0.310478	62.13343	76.97277	0.3902
At most 4	0.273037	42.80206	54.07904	0.3380
At most 5	0.248947	26.22033	35.19275	0.3298
At most 6	0.114146	11.33381	20.26184	0.5103
At most 7	0.092221	5.031250	9.164546	0.2800

Note: * indicates rejection of the null hypothesis. The Trace statistic indicates 1 cointegrating equation at 5% level of significance

Table 4.3: Johansen's cointegration test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob. **
None *	0.620466	54.28115	53.18784	0.0385
At most 1	0.536971	40.03827	47.07897	0.2315
At most 2	0.459591	32.00229	40.95680	0.3520
At most 3	0.310478	19.33137	34.80587	0.8523
At most 4	0.273037	16.58173	28.58808	0.6956
At most 5	0.248947	14.88653	22.29962	0.3844
At most 6	0.114146	6.302557	15.89210	0.7533
At most 7	0.092221	5.031250	9.164546	0.2800

Note: * indicates rejection of the null hypothesis. Max-eigenvalue test indicates 1 cointegrating equation at 5% level of significance.

The estimate of the long-run equilibrium relationship for GDP growth function derived from the normalized vectors, is shown in Table 4.4;

Table 4.4: Long-run estimates

Variable	Coefficient	Standard Error	t-statistic
Foreign share of total banks	0.041379	0.00437	9.46888
Five-bank concentration ratio	0.208064	0.04093	5.08341
Investment	0.131194	0.21282	0.55683
Financial Deepening	0.459291	0.18786	2.44486
Government Expenditure	-0.296757	0.24673	-1.20276
Inflation	0.131672	0.0223	5.90457
Trade Openness	-0.042849	0.0494	-0.86739
Constant	-25.64113	5.43598	-14.76917

Holding the influence of all the variables in the model constant, the negative and statistically significant constant term implies that the Ghanaian economy may worsen by approximately 25.6 percent due to the influence of all other variables that are not included in the model.

The first objective of the study was to test whether or not there exist a significant relationship between the share of foreign banks and economic growth. The foreign bank share (*FS*) variable was introduced in line with the works of Demirguc-Kunt et al. (1998) and Bayraktar and Wang (2008) as proxy to test this effect. The results show that the foreign share of total banks has an economically and statistically significant positive effect on GDP growth after controlling for other determinants of economic growth. The coefficient of the foreign share of total banks implies that a percentage point increase in *FS* increases GDP growth by 0.041 percent approximately.

This result is in line with the work of Bayraktar and Wang (2008) who discovered that the share of foreign banks has a positive significant effect on economic growth but contradicts the works of Demirguc-Kunt et al. (1998) and Bayraktar and Wang (2004) who found that the share of foreign banks has no positive significant effect on economic growth.

Second, contrary to expectation, the five-bank concentration ratio came out with a positive and statistically significant sign. Thus, as the five-bank concentration ratio rises by a percentage point, implying low competition, GDP growth rises by 0.208 percent. The degree of bank competition, therefore showed a negative effect on economic growth in the long-run. This is in agreement with the findings by Buchs and Mathiesen (2008) (who employed the PR statistics) and Aboagye et al. (2008) (who used Lerner Index) that the Ghanaian banking system showed glimpses of market power. However, the results contradict the findings by Idun and Aboagye (2014) who reported a positive relationship between bank competition and economic growth.

The coefficient of investment (K) is positive as expected based on theory. Consistent with the endogenous growth theory (Romer, 1986; Lucas, 1988; Rebelo, 1991; Barro, 1991; Pagano, 1993; Barro and Sala-i-Martin, 1994; Benhabib and Spiegel, 2000), the financial sector promotes long-run economic growth through two major channels; the volume of investment and the efficiency of investment. This has been validated since investment exert a positive though not statistically significant effect on economic growth. This implies that in the long run, increases in investment have the potential of stimulating economic growth in Ghana. From the results, the coefficient of investment (0.131) indicated that a percentage point increase in investment will cause GDP growth to increase by 0.131 percent approximately, *ceteris paribus*. The results concur with the findings obtained by Aryeetey and Fosu (2005) as well as Fosu and Magnus (2006) who obtained a positive relationship between investment and economic growth in Ghana, though statistically insignificant.

The estimated long-run relationship also reveals a significant and positive relationship between domestic bank credits to the private sector to GDP ratio and GDP growth. The interpretation of the results is that, in the long-run, if we deepen the financial sector of the Ghanaian economy by a percentage point, there will be a 0.459 percent increase in GDP growth. This is in support of McKinnon (1973), Shaw (1973) and Barro (1991) who predict that financial deepening affect growth through investment. This has been validated since investment exert a positive effect on economic growth. The positive effect of the ratio of domestic bank credit to the private sector to GDP on economic growth could therefore be viewed from the positive influence of investment on economic growth.

The results accord with the findings of Khan and Qayyum (2006) for Pakistan and Quartey and Prah (2008) in Ghana but contradict the findings by Ezzo (2010) and Ahmed (2008) for Sierra Leone. Ahmed (2008) found a negative, but significant relationship in Sierra Leone when private sector credit was used. The findings by Ezzo (2010) showed the negative impact of financial development on economic growth in the long-run.

The long run results reveal yet another outcome which is not consistent with expectation. The results indicate that the impact of government expenditure on growth is inconsistent with a priori expectation: an insignificant negative effect is obtained. Thus an increase in government expenditure does not raise economic growth but rather impedes growth. Specifically, a percentage point increase in government expenditure will reduce economic growth by 0.297 percent, though not statistically significant. This may imply that the government has not been spending more on productive areas; such as provision of safe water, primary health care, education and alternative sources of energy. This result is not in line with the results obtained by Ram (1986) and Aschauer (1989), but consistent with those by Landau (1983) and Barro (1990).

Interestingly, the study found that there is a positive and statistically significant relationship between inflation and GDP growth. The results contradict some empirical findings like that of Ndikumana (2000) and that of Ucan and Ozturk (2011) for Turkey, but consistent with the work of Bakare (2011) and Frimpong and Marbuah (2010) where an increase in inflation was found to encourage private investment which boost economic growth. Thus, if inflation increase by a percentage point, then GDP growth will significantly increase by 0.132, *ceteris paribus*. The result shows that inflation encourages productivity and output level. This suggests that the inflationary level that Ghana has experienced is good for Ghana's economic growth.

Finally, an unconventional result was obtained for trade openness. Openness to trade is often theorized to raise economic growth through channels such as access to advanced technology from abroad, greater access to a variety of inputs for production and access to broader markets that raise the efficiency of domestic production through increased specialization. However, the results indicate the opposite. Trade openness rather has a deleterious effect on economic growth. The result is not surprising in the Ghanaian case as businesses often complain of losing out of competition as trade liberation encourages the importation of cheaper commodities into the economy relative to locally manufactured ones. The results suggest that, in the long run, domestic producers in response to increased foreign competition might have adopted some skilled-biased technical change. Thus trade liberalization worsened the income distribution, which in turn affected economic growth negatively. Therefore, a percentage point increase in trade openness will reduce GDP growth by 0.04 percent, which is contrary to theoretical proposition.

4.4 Short-Run Dynamic Relationship

Analysis of the short-run dynamic equation has two important objectives. First, it can be used to investigate whether the impact of any of the explanatory variables is permanent or temporary. If the responses are significant only in the short run, then the effect of changes in

any of the explanatory variables is temporary. However, if the response is significant in both the short run and long run, then it can be said that changes of the explanatory variables are permanent. Finally, the error correction model (ECM) provides information about the speed of adjustment in response to a deviation from the long-run equilibrium, which could be useful for policy analysis (Cholifihani, 2008). The estimation of the ECM is shown in Table 4.5.

Table 4.5: Results of error-correction model (VECM)

Variable	Coefficient	Std. Error	t-statistic	Prob.
DGDP (-1)	0.145800	0.162481	0.897335	0.3747
DFS (-1)	0.001617	0.161473	0.010012	0.9921
DCR ₅ (-1)	-0.205320	0.336295	-0.610535	0.5448
DK (-1)	-0.004203	0.217056	-0.019362	0.9846
DFDM (-1)	-0.084767	0.392442	-0.215998	0.8300
DGEX (-1)	-0.786219	0.388142	-2.025594	0.0492
DINF (-1)	0.082810	0.021570	3.839188	0.0004
DTOP (-1)	0.049592	0.081880	0.605668	0.5480
ECT (-1)	-0.753289	0.194685	-3.869274	0.0004
R-squared	0.461553	Mean dependent var		0.071195
Adjusted R-squared	0.346172	S.D. dependent var		5.026258
S.E. of regression	4.064214	Akaike info criterion		5.813359
Sum squared resid	693.7490	Schwarz criterion		6.188598
Log likelihood	-141.1473	Hannan-Quinn criter.		5.957217
F-statistic	4.000242	Durbin-Watson stat		1.977139
Prob (F-statistic)	0.000949			

Table 4.5 suggests that the ultimate effect of the previous period's value of GDP growth on current values of GDP growth in the short-run is positive, but insignificant. The implication is that current values of GDP growth are not affected by GDP growth (lagged one year). This is contrary to expectation, in that, previous growth and expansion of the economy is anticipated to attract more investment and prosperity leading to more growth.

The coefficient of the *FS* variable in the dynamic growth equation is positive but insignificant at 5% level of significance. This is inconsistent with the results of the long-run growth equation.

This indicates that in the short run the role that the presence of foreign banks play in Ghana's economic growth process is not important.

The coefficient of government expenditure still turned negative and significant at 5% significance level in the dynamic growth equation just as in the long-run growth equation although it was insignificant in the former. The 0.786219 values of the coefficient of DGEX (-1) reveals that a percentage point increase in government expenditure brings about a 0.79 percent decrease in economic growth in the short-run.

Moreover, the coefficient of inflation in the short run is positive, consistent with the long run findings. The results thus suggest that if inflation goes up by a percentage point, economic growth rises by 0.083 percent. The results indicate how important it is to control inflation in the Ghanaian economy by putting in the appropriate policies. Its impact in both the short-run and long-run seem encouraging as inflation generally proxy macroeconomic instability.

Other dynamics in the error correction model show that the five-bank concentration ratio (lagged one year), investment (lagged one year), financial deepening (lagged one year), and trade openness (lagged one year) are not important in explaining economic growth of Ghana in the short-run.

An examination of the econometric results shows that the overall fit is satisfactory with an R-squared of 0.462, thus 46.2% of the systemic variation in the dependent variable is explained by the error correction model.

The error correction representation in Table 4.5 shows a significant error term at 1% level which has the required negative sign. This confirms the existence of the cointegration relationship among the variables in the model. The coefficient of ECT(-1) is -0.753 and implies that the deviation from the long-run growth rate in GDP is corrected by 75.3 percent in the model by the coming year.

In other words, the highly significant error correction term suggests that more than 75.3 percent of disequilibrium in a previous year is corrected in the current year. The findings show that the speed of adjustment is relatively high in the model.

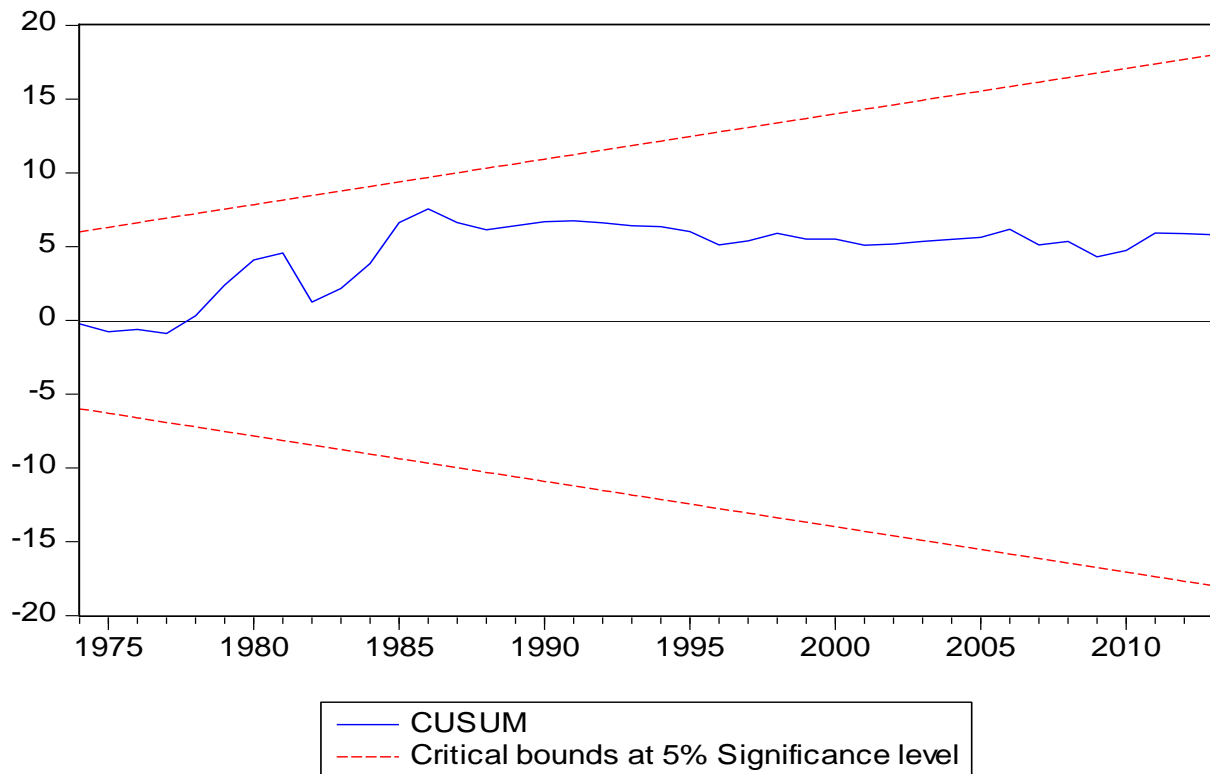
4.5. Diagnostic and Stability Tests

Pesaran et al. (2001) advocated for diagnostic and stability tests. The diagnostic test show that the dynamic model passes the serial correlation and heteroscedasticity tests on the residuals. The diagnostic test, however, failed the joint normality test at the 5 percent level. Therefore, the study tested for stability of the short run model using the cumulative sum (CUSUM) test.

Table 4.6: Diagnostic test

Diagnostic	Statistic	Conclusion
Serial Correlation	LM test statistic = 0.014928 P-value = 0.9028	No serial correlation
Multivariate Normality	Jarque-Bera test = 104.0174 P-value = 0.00000	Residuals are not normal
Heteroscedasticity	Chi-square = 12.22439 P-value = 0.7284	Residuals are not heteroskedastic

This stability test is appropriate in time series data, especially when we are uncertain about when a structural change might have taken place. The null hypothesis that the coefficient vector is the same in every period and the alternative is simply that it is not. CUSUM statistic is plotted against the critical bound of the 5% significance. If the plot of this statistic remains within the critical boundaries of the 5% significance level, the null hypothesis (i.e. all coefficients in the error correction model are stable) cannot be rejected. The plot of the cumulative sum of recursive residual is presented in Figure 4.1.

Figure 4.1: Plot of cumulative sum (CUSUM) of recursive residuals

As shown, the plot of CUSUM residuals is within the boundaries. That is to say that the stability of the parameters has remained within its critical bounds of parameter stability. It is clear from the graph in Figure 4.1 that the CUSUM test confirm the stability of the long-run coefficients of the GDP growth function.

One other problem in the estimation of Johansen's maximum likelihood technique is the selection of the appropriate lag length. The lag length plays a crucial role in the estimation of cointegration test, as well as error correction model. Appropriate lag length (ρ) is chosen using standard model selection criteria (Akaike Information Criterion and Schwarz Information Criterion) that ensure normally distributed white noise errors with no serial correlation. The results of the lag selection criteria are presented in Table 4.7.

Table 4.7: Lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1285.562	NA	4.09e+12	51.74247	52.04839	51.85897
1	-1023.771	429.3365*	1.55e+09*	43.83085	46.58416*	44.87932*
2	-978.1962	60.15897	3.92e+09	44.56785	49.76855	46.54831
3	-923.2203	54.97592	9.89e+09	44.92881	52.57690	47.84125
4	-829.9573	63.41883	1.17e+10	43.75829*	53.85377	47.60271

Note: * indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

Tracing both SC and AIC statistics against the first column labelled 'Lag' coincide with lags of 1 and 4 respectively. This study, therefore decided on SC since it produces a more robust result. This implies that the appropriate lag length chosen is 1.

4.6 Conclusion

This chapter discussed the estimated results. The long-run equilibrium was established using Johansen Maximum Likelihood cointegration test. The results indicated that there is a long-term relationship between economic growth, investment, foreign banks' share, bank competition, financial deepening, government expenditure, inflation and trade openness. All the variables except bank competition, government expenditure, inflation and trade openness have theoretically correct signs. Whereas foreign banks' share, financial deepening and inflation exerted positive and statistically significant impact on economic growth, a negative and significant effect of bank competition on economic growth was observed. Though, investment, government expenditure and trade openness exerted a positive and negative impact on economic growth respectively, they were statistically insignificant.

The results of the VECM showed that the error correction term for economic growth carry the expected negative sign. The findings show that the speed of adjustment is high in the model.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This is the concluding chapter of the study. This chapter gives a brief description of all what the study is about and how the study was conducted. On the basis of the outcome of the study, we draw conclusions and make recommendation for policy analysis and further studies in this area of study. Furthermore, we identify the limitations of the study to guide future studies on the subject matter.

5.2 Summary

This study examined the relationship between the share of foreign banks, bank competition and economic growth in Ghana using annual time series dataset from 1960 to 2013. The cointegration and VECM approaches were used in the process. The Johansen (1988) approach to cointegration and the VECM were employed to analyse the long-run and short-run dynamics among the variables concerned. The variables employed in the study included GDP growth, the ratio of the number of foreign banks to total banks, five-bank concentration ratio, gross capital formation to GDP ratio, domestic bank credit to the private sector to GDP ratio, government expenditure to GDP ratio, inflation and trade to GDP ratio. All test and estimations were conducted using Econometric Views (Eviews) 7.2 package.

The review of the Ghanaian banking sector revealed that a relatively large number of banks are active in the Ghanaian banking sector. In addition to universal banks, rural and community banks, which are much smaller than universal banks, but also much more numerous play an important role. The products, services and policies should promote within the industry, efficiency and competition, financial deepening and enhance transparency. This will culminate

in the promotion of the development of the banking industry and reduce asymmetric information problems. The theoretical literature illuminated many ways through which the emergence of financial instruments, markets and institutions affect and are affected by economic growth. However, the results of empirical studies on the nature of relationships between the share of foreign banks, bank competition and economic growth are inconclusive as a result of using a variety of proxies as well as the choice of econometric methods.

The estimated results, on the other hand, showed long-run relationship between economic growth, the share of foreign banks, five-bank concentration ratio, investment, financial deepening, government expenditure, inflation and trade openness. All the variables except five-bank concentration ratio, government expenditure, inflation and trade openness revealed theoretically correct signs. Though the share of foreign banks, five-bank concentration ratio, financial deepening, and inflation exerted positive and statistically significant impact on economic growth, a negative and insignificant effect of government expenditure and trade openness to economic growth was observed. Investment exerted a positive impact on economic growth, but was insignificant.

The empirical evidence of the error correction model showed that all the variables except inflation and government expenditure exhibited both positive and negative statistically insignificant impacts on economic growth in the short-run. Inflation tends to be the most significant factor in explaining growth in GDP. The estimated coefficient of the ECT indicates a strong speed of adjustment to equilibrium. The sign of the error correction term is negative and statistically significant, confirming that there exists a long-run equilibrium relationship among the variables.

5.3 Conclusions

The finance-growth nexus has captured the interest of finance experts, policy makers and researchers as well as development practitioners in recent times given the turbulent experiences of the financial world and its accompanying consequences.

The empirical results support the presence of direct impact of foreign banks on economic growth in the long-run. As the foreign share of total banks rises, economic growth also rises indicating a direct link between the two variables. However, the study found no evidence that foreign banks directly influence short-run economic growth. Specifically, the share of foreign banks is not significantly associated with economic growth in the short-run.

In terms of the indirect impact, the degree of bank competition showed no significant positive impact on economic growth in the short run, whilst in the long run, bank competition is negatively related to economic growth. This means that the competitive nature of the banking system in Ghana is not important in explaining economic growth. This reinforced the argument in Guzman (2000) that monopolistic banking systems do not allocate credits to the most productive system for growth to occur.

In his study, Guzman (2000) compared two identical banking systems, one competitive and the other monopolistic. He concluded that the system with more market power suppress capital accumulation because such system ration credit and charges more on loans than competitive banking environment.

To support this claim by Guzman, Idun and Aboagye (2014) observed that interest on loans in Ghana is high despite continues attempt by the Bank of Ghana to bring the policy rates down during the past years. The banks are not even responding to the periodic publication of the interest charge on loans to customers instituted by the central bank. This indeed stifling growth as the present study shows.

There was also an adjustment to equilibrium from the short-run.

5.4 Recommendations

In line with the above estimations, findings and conclusions, the study recommends the following:

The study revealed that the direct impact of foreign banks on economic growth is supported by evidence while there is no evidence of indirect impact via bank competition. In view of this, the study should send signal to policy makers on some aspect of the development in the banking sector they must pay attention to. In other words, the result should encourage the government with the Bank of Ghana and other stakeholders in the financial sector who may be unwilling to remove restrictions on the entry of foreign banks to change their minds and introduce international competition so as to promote economic growth.

Besides opening up the banking sector to foreign banks enables the domestic banks to be more technically efficient, following the notion that banking efficiency results in competition in the sector. Also, it is recommended that government must reduce corporate tax, give tax holidays, among others, as incentives to encourage efficiency within the banking industry. This is recommended because profitability, which is also a significant determinant of bank technical efficiency, can be seriously affected by high corporate taxes and vice versa.

Meanwhile, the results also give a glimpse of the movement of macroeconomic variables in the models in the opening process.

Government expenditure yielded a negative relationship with GDP growth over the study years for Ghana. This means that government expenditure was not geared towards pro-growth and pro-poor activities of the economy. The government should therefore take it upon itself to keep on directing its spending into productive sectors of the economy, such as education, health, water, sanitation, rural development and infrastructural development. There is also the need for projects to increase the number of public educational institutions as well as ensuring quality education.

In addition, the government expenditure should also be directed towards research into other sources of energy, for example geothermal energy, wind energy, solar panels energy and biofuels, to enhance sustainable supply of electrical power. Besides, there is the need to sustain the building and maintenance of road networks to facilitate transportation of raw materials, finished goods and people.

Inflation was found to have a positive influence on GDP growth. Higher inflation tends to hold back economic growth through a number of channels. In other words, high inflation discourages the accumulation of financial capital, thus denying the economic system of essential lubrication in the form of adequate liquidity. Inadequate lubrication hampers economic growth. As a developing economy, an inflationary level of more than 10% is deemed high in Ghana and this erodes savings, stimulates capital flight, discourages investment and thus hampers employment generation, growth and development in Ghana. Lower rates of inflation are important for boosting industrial performance. The government should go on to adopt policies that will control inflation in Ghana and also appreciably reduce lending rates of universal banks in order to attract investors to seek industrial working capital.

5.5 Directions for future studies

The share of foreign banks and bank competition, consequently, cannot be captured by a single measure. In this regard, future research could consider using many more measures of the share of foreign banks and bank competition for both cointegration and VECM. In addition, it may be important to further learn the responsiveness of economic growth to the shocks caused by the presence of foreign banks in Ghana by employing the variance decomposition and impulse response function.

5.6 Limitations of the Study

One of the main drawbacks usually encountered in studies of this nature in developing countries like Ghana is the unavailability of reliable data. Lack of a complete dataset from a single source meant that data had to be taken from different sources, which usually involves inconsistencies. As a result, the selection of some of the proxies of the variables of interest became inevitable.

Moreover, one limitation with the cointegration approach by Johansen employed in this study is that it is based on VAR methodology which is usually over parameterized and sensitive to both model specification and lag length selection. The selected lag length has implications for the result of the cointegration and VECM. However, the cointegration and VECM produced consistent results. In that, other authors including Frimpong and Adam (2010) have employed identical approach and obtained consistent and reliable results. Our selection of the optimal lag length was based on the standard model selection criteria (SC) that ensured white noise residuals.

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