



ASHESI UNIVERSITY

**THE IMPACT BANK RECAPITALISATION REQUIREMENT ON
PROFITABILITY OF LOCAL AND FOREIGN BANKS IN GHANA**

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B. Sc. Business Administration

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EFFECT OF RECAPITALIZATION ON BANK PROFITABILITY IN GHANA

DECLARATION

I hereby declare that this undergraduate thesis is my original work and that no part of it has been presented for another degree in this university or elsewhere.

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I hereby declare that the preparation and presentation of this thesis was supervised in accordance with the guidelines on supervision of theses established by Ashesi University

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ABSTRACT

The Bank of Ghana embarked on a “clean up” exercise in the banking sector to strengthen the sector and protect the properties of depositors. This exercise caused some of the banks in Ghana to exit the industry due to revocation of license, too many non-performing loans or insufficient capital reserve.

Among the reforms, the minimum capital reserve for financial institutions in Ghana, which was initially GHS 120 million (USD \$20,859,324) was increased to GHS 400million (USD 69,531,080). Banks were required to get their capital reserve up to that amount by the end of 2018. Among the clean-up, the capital adequacy ratio was set at 10%. Research has shown that effect on bank recapitalization differs from foreign- owned and locally-owned banks in Ghana. Since it was too soon observe the effects of bank recapitalization in 2017, this study delved into the impact bank recapitalization has on foreign-owned and locally-owned universal/commercial banks in Ghana. Foreign banks that is mentioned many times in this study refers to banks established in other countries (and majorly owned by foreigners) but have set up offices in Ghana. Locally banks as used in this paper refers to banks who have majorly owned by indigenes, in this case Ghanaians.

A total of eight banks were used in this study; four locally banks and four foreign-owned banks. The returns on asset, returns on equity, capital adequacy ratio and total assets of these banks were collected for the period 2007-2009. Ghana’s Real GDP growth rates for the same period were collected. The data collected can be described as a panel data, thus a panel data analysis is used. A Hausman Test was run to help determine the appropriate results to use for the analysis of this study.

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The results revealed that capital adequacy ratio had a positive relationship with ROA of both types of Banks. It was also established that total assets had a negative relationship on ROA of these banks. GDP growth rate had a positive coefficient for local banks but the opposite was recorded for foreign banks.

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LIST OF ABBREVIATIONS

ABSA.....	ABSA Group Limited Ghana
ADB.....	Agricultural Development Bank
BOG.....	Bank of Ghana
CAL.....	CAL Bank
ECB.....	Ecobank Ghana
ERP.....	Economic Recovery Program
FINSAP.....	Financial Sector Adjustment Programme
FIB.....	Fidelity Bank
GCB.....	Ghana Commercial Bank
IMF.....	International Monetary Fund
NBFI.....	Non-Bank Financial Institution
ROA.....	Return on Assets
PRU.....	Prudential Bank
SCB.....	Standard Chartered Bank Ghana
SOG.....	Societe Generale Ghana

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CHAPTER 1: INTRODUCTION

1.0 OVERVIEW

The first chapter provides the background of the study. This introductory chapter presents the overview of the research. In this chapter, the problem statement is stated and expatiated to aid the reader to understand the study. The research objectives and questions are first mentioned in this chapter, the scope of the study and the relevance as well as the limitations to be encountered during this research.

1.1 BACKGROUND

Central banks and regulators of financial sectors introduce reforms to regulate, strengthen and improve the economies and banking sectors. These are typically known as financial reforms or regulations. Financial reforms are known to ameliorate the efficiency and profitability of financial sectors to stimulate growth and reinforce the confidence of customers and major stakeholders in the banking system. (Asedionlen, 2004).

The banking industry is an integral and very sensitive sector of an economy as such its failures can be detrimental to the country (Akinlo & Egbetunde, 2010). Banking sector can be considered as the backbone of economies. It helps to facilitate economic activities such as investments, savings and lending in an economy. Financial regulation has become a topic of interest since the great depression. Policy makers have been finding ways to curb economic crisis as it take a very long time for an economy to recover. They put in measure to immediately strengthen this sector with the slightest signal of vulnerability. Churi et al (2001) discovered that a failing of a banking sector is a blow to the economy of a country. The financial sector is the bridge between suppliers of credit and borrowers. They

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discovered that a financial sector crisis curtails the supply of credit. Supply of credit expedites investments, capital, growth of businesses and economic activity in general. A weak banking sector chases away foreign investors as it projects possible losses on their investments.

Regulation in different markets and economies have different effects on those economies. Many economies have adopted stricter regulatory directives in the last decade to improve stability. According to Bopkin (2016), banking sector reformation in the Ghana has been known to have an effect on deposit insurance, capital requirements among many other outcomes. Meanwhile in the US, the regulatory reform led to many consolidations and mergers, decreasing the number of commercial banks in the sector between 1975 and 1997. (Cetorelli, 2000). Therefore banking sectors of economies and markets such as Ghana's react differently to regulation compared to developing and developed countries.

Ghana's banking sector is consists of the regulator, the commercial/universal banks, rural banks and the non-bank financial institutions. An Economic Recovery Programme that was introduced in the 1980s by the IMF to help restructure the banking sector and encourage participation of private entities such that the sector is made up of state-owned and private-owned banks. Moreover, a legislation passed in 1990 embraced the participation of foreign-owned banks into the Ghanaian banking sector. (Ayeertey, 1992). Even though the Ghanaian banking sector is an emerging one, it has been doing fairly well since the 1990s. Bokpin (2015) believes the growth of Ghana's financial sector in the last two decades can be attributed to the development and encouragement of private participation in the industry.

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The Ghanaian banking industry has since the 1980s has experienced many reforms which can account for many changes and has shaped the activities of the sector today (Saka et al., 2012) among these reforms includes recapitalization. Bank recapitalization is a bank regulation measure that was introduced by the Basel Accord in the developed economies (G-10) to help banks and the banking sector to withstand losses especially in times of crisis. There are many instrument used by the regulator for bank recapitalization and this includes the capital requirement directive used by the BOG in 2017. The sector has experienced an exigent period so in 2017, a financial reformation was put in place which included a recapitalization directive. The aim of the reformation was to help the sector catch up to the technological evolution while correcting a possible economic downturn just in time before a crisis. (BOG Report: Ghana 2019). After these reforms and financial sector “clean up”, many banks were found vulnerable.

Before the 2017 reformation, the minimum capital requirement of commercial banks was GHS 120 million (\$ 20 million). (Afful, 2018). The BOG Act 2002 states that, “The BOG shall have overall supervisory and regulatory authority in all matters relating to banking and non-banking financial business with the purpose to achieve a sound, efficient banking system in the interest of depositors and other customers of these institutions and the economy as a whole”. (Ghana Constitution, 2004). For this authority bestowed on the Bank of Ghana, primarily, it gives the regulatory body the power to control and supervise the activities of the banking system in Ghana. Again, they hold the power to review and change directives. The governor of the BOG stated that the reform was to “further develop, strengthen and modernize the financial sector to support the Government’s economic vision and transformational agenda”

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With regards to the reforms to the banking sector, eleven universal/commercial banks exited the market. (Pricewaterhouse Cooper, 2019). A major characteristic of this period was the revocation of banks' licenses like UniBank Ghana Ltd, Royal Bank, Beige Bank Limited, Sovereign Bank Ltd and Construction Bank Ltd, mergers and consolidation. The BOG after the exercise declared twenty-three universal banks were deemed fit to continue operations. (Owusu, 2019). The recapitalization directive required that the minimum paid-up capital requirement or reserves universal/commercial banks be increased from GHS 120 million to GHS 400 million. (Pricewaterhouse Cooper, 2018). Minimum paid-up capital is the minimum amount of money banks are required to keep as a reserve with the central bank as set by regulator. (Rime, 2000). The directive required banks to raise the increment in the minimum capital through any of these three; either by raising of fresh capital, converting retained earnings to capital stock or shares or business consolidations. (Oxford Business Group Report, 2018). Some banks were incapable of meeting the new capital requirement and had to be consolidated while others submitted applications for merger to be able to meet the directive. Other reasons for license revocation included false license (in the case of Sovereign Bank) and too many non-performing loans. (Bank of Ghana, 2018). UT Bank as well as Capital Bank had their assets taken over by the Ghana Commercial banks due to the consolidation.

As shown in Table 1 below, Heritage Bank and Premium Bank had their licenses rescinded and assets consolidated for having questionable sources of capital. OmniBank and Sahel Sahara merged while First National Bank and GHL Bank merged in April 2020. (Bank of Ghana Report, 2018).

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Table 1

List of Banks in Ghana in 2019

	Banks	State of Bank	Majority Ownership type
1	ABSA	Existing	Foreign-owned
2	Access Bank	Existing	Foreign-owned
3	Agricultural Development Bank	Existing	Locally-owned
4	Bank of Africa	Existing	Foreign-owned
5	Beige Bank	Consolidated	Locally-owned
6	CAL Bank	Existing	Locally-owned
7	Capital bank	Consolidated	Locally-owned
8	Consolidated Bank	Existing	Locally-owned
9	Construction Bank	Consolidated	Locally-owned
10	Ecobank	Existing	Foreign-owned
11	FBN Bank	Existing	Foreign-owned
12	Fidelity Bank	Existing	Locally-owned
13	First Atlantic Bank	Existing	Foreign-owned
14	First National Bank	Merging	Foreign-owned
15	Ghana Commercial Bank	Existing	Locally-owned
16	GHL Bank	Merging	Foreign-owned
17	GT Bank	Existing	Foreign-owned
18	Heritage Bank	Consolidated	Locally-owned
19	National Investment Bank	Existing	Locally-owned
20	OmniBank	Merged	Locally-owned
21	Premium Bank	Consolidated	Locally-owned
22	Prudential Bank	Existing	Locally-owned
23	Republic Bank	Consolidated	Foreign-owned
24	Royal Bank	Consolidated	Locally-owned
25	Sahel Sahara Bank Ghana	Merged	Foreign-owned
26	Societe Generale	Existing	Foreign-owned
27	Sovereign bank	Consolidated	Locally-owned
28	Stanbic Bank	Existing	Foreign-owned
29	Standard Chartered Bank	Existing	Foreign-owned
30	UBA	Existing	Foreign-owned
31	Uni Bank	Consolidated	Locally-owned
32	Universal Merchant Bank	Existing	Locally-owned
33	UT Bank	Consolidated	Locally-owned
34	Zenith Bank	Existing	Foreign-owned

Data Source: Pricewatercooper House (2018)

Other reforms that were introduced included the Corporate Governance Guidelines. (Oxford Business Group, 2019). As part of the Bank of Ghana's regulatory mandate, corporate governance directives were strengthened for the banking sector to manage and

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keep board of directors, executives, shareholders and the governing bodies of banks in check. These directives will focus on supervising responsibilities of the board of directors and management of banks in Ghana, prioritize risk management systems and make sure these banks have independent audit roles, among other things. This will help to prevent the issues that were detected with UT Bank to keep repeating itself and to help the regulator to easily identify such shortcomings of banks. There was also the Financial Holding Companies Directive among many others. This directive was to provide guidelines concerning mergers and acquisitions. (Zaney, 2019).

1.2 PROBLEM STATEMENT

The increment of the capital requirement by BOG in 2017 shook the pillars of some banks causing some to leave the market, while some still hang on, and other banks doing fine. When the directive was communicated by the BOG, it was faced with opposition especially from the local banks. Moreover, it was found that local banks were negatively affected by the directive than the foreign banks considering that majority of the local banks consolidated.

The capital requirement directive was propounded and introduced by the Basel Committee which is generally made up of the banks from the G-10 countries. (Basle Committee, 1995). “The average ratio of capital to risk-weighted assets of major banks in the G-10 rose from 9.3% in 1988 to 11.2% in 1996”. (Jackson et al, 1999), however it may be less than 10% in many developing countries today. The Basle Accord (1999) defines the risk-weighted ratios as the ratio of capital to risk of a bank by using the risk weighted

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assets. Risk weighted assets are a measure of the amount of capital that banks and other financial institutions must hold (in their capital structure) in order to absorb and reduce risk of insolvency. The risk-weighted assets help banks determine the amount that could be lost in insolvency and thus help banks calculate capital to keep in reserves.

According to the Basel III Committee, as capital requirement increases, risk of the banks increases, showing a positive relationship between capital and risk. Studies have shown that bank recapitalization has had positive impact on bank profitability in countries like Japan and Switzerland. (Berger, 1995).

Ghosh, Nachane, Naraine and Sahoo (2003) research shows how the introduction of the capital requirement caused bank failures in India. Trujillo Ponce (2013) concluded that bank recapitalization may have negative effect in emerging markets, while strong economies may see a positive outcome on bank profitability and the economy.

The consequences of capital requirements is very ambiguous as one effect cannot be concluded on and the effect varies with country and policies that already exist in that country. (Avery & Berger). Ghana has a developing economy and regulations may affect the economy differently as compared to developed economies. Ghana's banking sector's ability to withstand shocks cannot be predicted as local banks in Ghana are interdependent, so a shock on one causes multiple effect on the other. Foreign banks are mostly supported by their parents companies and can easily recover from shocks. (Aboagye & Ahenkora, 2018).

All these different effects and bank reactions to capital requirements makes it expedient for one to want to investigate the effect of the rise in the minimum capital requirement on

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the banking sector. Thus, this paper seeks to scrutinize the effect of the 2012 and 2017 recapitalization on profitability (ROA) of foreign banks and local banks.

1.3 RESEARCH OBJECTIVE

The main objective of the study is to explore the impact of the reformative agenda, particularly the increase in the minimum capital requirement of the commercial/universal banks in Ghana. This research will carefully delve into the effect of the increment in the minimum paid up capital requirement in 2012 on profitability of foreign-owned and indigenously-owned banks in the banking sector of Ghana. This will help to identify how these two groups of banks react differently to the directive, the effect of the capitalization will be done for both 2012 and 2017 recapitalization directives.

1.4 RESEARCH QUESTION

Main research question:

What is the impact of the minimum capital requirement on the profitability of foreign and local banks in Ghana?

Minor research questions:

Is there a relationship between recapitalization and profitability of banks?

What is the relationship between the Capital Adequacy ratio and ROA?

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1.5 RELEVANCE OF THE RESEARCH

The consolidation of the banks is one of the actions that will linger on the minds of Ghanaians for a very long time as some Ghanaians consider it as closedown and collapse of the banking sector. The cause of the consolidation of some of the banks among many reasons was as due to their inability to meet the directive. The increase of capital requirement for banks is not a new thing in our region, as Nigeria did a capital requirement some years ago. The case of Nigeria plays a key contribution to this study as it gives a framework, and will help shape my findings and conclusions of this study because of the similarities identified between the two economies.

At the end of my research, my thesis will contribute to the body of knowledge that seeks to understand effect of capital requirements in Ghana and developing economies.. Together with other research findings, individuals and the stakeholders of the industry will be able to have access to information on this proposed topic and all related topics in the future. Again, investigating the effects for two different periods will help to understand the period it takes for economies such as Ghana to reap the benefits and/or recover from the recapitalization requirement directive. Finally, this paper seeks to add up to the financial literature on regulatory directives from the regulator, to inform investors, banks, the public as well as policy makers on decision making such as whether local banks should have different capital requirements from foreign banks.

1.6 SCOPE OF THE RESEARCH

In probing into the outcome of increment in the capital requirement, eight banks will be studied. The banks selected for the study will be based on these two categories; local and foreign banks. This will help me to identify the different impact the capital

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requirement has on each category. Additionally, the profitability and risk levels of the banks before and after the capital requirement will be investigated. The profitability of the banks will be measured by the return on asset balance to give an overview of the pressure this new requirement has created on the banks.

1.7 LIMITATION OF THE STUDY

One major difficulty encountered while conducting this research will be the availability of data and information needed for the study. For the banks that have collapsed and have been consolidated or closed down, it will be hard to get the financial data for the last three years before the close down. This had an effect on the number of banks that were investigated in this study.

1.8 OVERVIEW OF METHODOLOGY

In this research, the quantitative research approach. This is because the focus of the study is to identify and understand the effect of the increase in the minimum capital requirement on the different banks. The quantitative method will be used because, in analyzing the aftermath of the directive, the financial data, profitability ratios and the CAR of the banks will be used. The data used is only secondary data. The financials of the banks will be retrieved from the websites of the banks and from published annual reports.

A panel data analysis was in this study to evaluate the relationship and the effect of recapitalization on bank profitability. ROA which is the measure of profitability is the dependent variable. The independent variables are total assets, capital adequacy ratio and GDP growth rate. A simple multiple regression model will be adjusted and used to run the

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regression. A paired sample test was employed to measure the mean of return on assets five years before and after the directive to determine the impact of the recapitalization on the banks. Financials of the four local banks and foreign banks will be used for the research.

1.9 OVERVIEW OF THE STUDY

This paper will be written in five chapters. The first chapter being the introductory chapter will describe the introduction to the study, problem statement, hypothesis relevance and limitation of the study. The literature review, which is the second chapter, will help understand theories on which the paper is based on and past literature that supports claims and finding of similar study or research. The third paper of this paper cover the methodology. It highlight the research design, describes the data and data collection methods. It also defines the models to be used in this paper and data analytics tools that were used in the analysis of this study.

The next to last page contains the key findings of the regression and sample test. It also looks at the tests run to validate the multiple regression model. The final chapter summarizes the whole paper, recommending measures to policy maker to help make bank recapitalization a good directive that will benefit all banks. A number of recommendations for further research is mentioned too.

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CHAPTER 2: LITERATURE REVIEW

2.0 INTRODUCTION

This chapter reviews existing literature on Bank recapitalizations. This chapter is in two parts: The first part is a theoretical framework that examines the regulatory mechanism while the second part is an empirical analysis looking at the results of minimum recapitalization in economies. The first section of this chapter scrutinizes the theories underlying bank recapitalization in with respect to the objectives of this study. The empirical analysis section analyses two types of economies that are on two extremes ends and the impact of the ban recapitalization on such economies. This is will help to understand the outcome of minimum capital requirements on the extreme economies, evaluate the contributions of minimum capital requirements in different cases and help to make deductions along the way in this research. The literature review give an overview of findings of studies conducted. This will give a comprehensive background to the topic being investigated.

2.1 THEORETICAL FRAMEWORK

2.1.1 Capital requirement concept

Capital requirements is considered as the amount of capital banks are expected to hold as reserve as requirement by the banking sector regulator (Firzili, 2002). “This is in the context of fractional reserve banking and is usually expressed as a capital adequacy ratio of liquid assets that must be held compared to the amount of money that is lent out”. According to Jacques and Nigro (1997), Dahl and Shrieves (1990), banks often change the structure of their asset to a lower risk class of assets when capital requirements are proposed and introduced. M. E Tahyar (2010) proposes broad categories of capital which are used

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by regulators for capital requirement regulation. These are the regulatory and economic capital.

2.1.2 Recapitalization and Extension of credit

Chiuri et al (2002) after analyzing the impact of the Basel II on emerging economies concluded that enforcement of capital requirement on banks reduces the banks ability to supply loans to firms. They go on to argue that this effect is stronger on less capitalized firm or firms that solely depend on equity and debt. International banks are less likely to have this impact as a part of their funding comes from the parent company. However, this is contradicted in the Basel framework. In Basel 1 framework, the significance of the minimum capital requirement was to provide an aid for banks to still provide credit, since at that time that was the sole function of banks. Yet Avery and Berger (1991) believe that capital requirement effect on credit extension of is quite ambiguous as the Basle risk weighted framework only expounds about 5% of banks' loan performance after recapitalization directives.

2.1.2 Recapitalization and Bank Sensitivity to Risk and return

Koehn and Santomera (1980) find that capital requirement is expensive and poses higher risk to the banks. They disagree and have challenged the Basle I theory that claims that capital requirement is a way to strengthen and stabilizes the banking system. Some risk that they discussed to pose to banks include but not restricted to bankruptcy risk, market risk and operational risk. This argument they bring introduces the Modigliani and Miller risk and return theory. The Modigliani and Miller theory (1952) states financial leverage is in direct proportion to the cost of equity, thus shareholders assume there is higher risk and shareholders will require higher returns on their equity. According to Kim and Santemero (1998), in meeting capital requirement, there may be an increase in debt

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component, thus an increase in leverage. Hoffman (2011) grounded that as the leverage increased, the risk of the banks increased and this will reduce the equity to asset ratio. It is worth noting that as leverage beyond a certain level the banks is exposed to possible insolvency, bankruptcy and tax shields erode gradually. Rochet (1992) concludes that the increase in capital leads to a higher profitability however it accompanied by higher risk. Consequentially, shareholders acknowledge this high risk and the increase in the bank defaulting thus they choose a higher point on the efficiency frontier requiring higher returns on their investment. Berger (1995) found that bank recapitalization reduced the risk of banks as more capital reduces bankruptcy costs and improved their profitability. Saona (2011) concluded that if a bank wants high profits, they need to take up more risk and results from his study show a negative relationship between capital and profitability under the risk and return hypothesis.

2.1.3 Recapitalization and Profitability (ROA, ROE)

Profitability can be considered as basic unit of businesses. A firm's profitability allows it to generate wealth for shareholders and returns on it assets. Boahene, Dasah and Adjei (2012) scrutinize the impact of bank capitalization and profitability on six commercial banks from 2005 to 2009. Their findings reflect an association between the bank capitalization and profitability. Berger (1995) studied a similar phenomenon and observed a positive impact of recapitalization on banks. Studies conducted by Sufian & Chong's (2008) study of bank recapitalization made a similar conclusion but this time on ROE of banks. Eriotis, Frangouli and Ventoura (2011) explored the effect of bank capitalization and profitability. Their finding agreed with the claim that bank capitalization improved the profitability of banks using the debt-equity-ratio. Besides that, they grounded that bank recapitalization improved the industry since banks experience profitability. This

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profitability promotes confidence in the sector and led to increase in the injection of new equity into the banks.

2.2 EMPIRICAL ANALYSIS

2.2.1 The Ghanaian Banking Sector

Banks are intermediaries that bridge the gap between borrowers and lenders to facilitate investments, financing and other economic activities. (Investopedia, 2011). Banking in Ghana first started in 1896 when the Bank of British West Africa, now known as the Standard Chartered Bank, was first opened in Accra. It was initially created to manage and maintain the government accounts. It remained the only bank until 1918 when the Colonial Bank (recently Barclays, now ABSA) commenced in Accra. These two banks have been incorporated in the Company Code 1963 (Act 1710) and still operate as Ghanaian companies till this day. At the time of independence, Ghana had three banks operating in the country; The Bank of British West Africa, Colonial Bank and the Bank of Gold Coast. The Bank of Gold Coast which doubled as the central bank, established in 1953 with Alfred Engleston as the governor of the bank. Soon after independence, The Bank of Gold Coast was later divided into the BOG and the GCB, which enjoyed the monopoly for a long time as the only Ghanaian commercial bank. (Aryeetey, 1996). Until 1992, the Government of Ghana solely held all shares in the GCB. The government under the Companies' Act 461 converted the GCB to a public limited liability company limited by shares. In persistence of the divestiture in 1993, the government sold 60% of its equity holdings to the public. (Adusei, 2013).

As the country developed, many sectors and developmental projects arose and this required specialized banks to be established to cater for the different delegations. According to Aryeetey (1992), these banks were established and designed to meet the

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specific requirement of the sectors of the newly independent state. To promote and fortify sectors such as the agriculture, investment and constructions Ghana Investment Bank (now National Investment Bank), Agricultural Development Bank, Merchant Bank, Social Security Bank and more were set up between 1957 and 1965 by legislation. By mid 1970s, about ten banks were in existence in Ghana and all were state-owned with the government having majority of shares in them. This is the period, Aryeetey (1996) describes as one that lacked innovation and very uncompetitive in the history of the banking sector in Ghana. In addition to this situation, due to our socialist policies Ghana was hit by serious crisis in the mid-1960s and persisted until 1983. The crisis was characterized by rapid inflation accompanied by devaluation which was taking a toll on economic activities and businesses. In addition, during this period, the Ghanaian financial system was ineffective due to political instabilities and different control policies from different regimes by creating entry into the banking industry and increasing state ownership in the major banks restricting levels of borrowing and lending etc. (Johnston and Brekk, 1991). For example during the Acheampong regime, all the commercial banks were required to have majority of their shares held by the state. This policy meant that the funds were channeled to non-profitable activities and corrupt state-owned enterprises. Moreover the military officers had access to loans without assessments regardless of the incapability to repay the loans. (Leith and Soderling, 2000, Aryeetey, 1992).

With all these event that was distressing the economy, the International Monetary Fund recommended that the Ghanaian banking sector be adjusted to liberalize the sector and allow for growth and innovation through the Economic Recovery Program. This was going to make the banks more efficient and allow for privatization. Moreover, this recovery

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program was to relax the restrictions on the financial sector and remove barriers of entry to encourage foreign banks to come into the sector as well as local banks. The initiative allowed for banks to apply for licenses which saw entities like the Meridien Trust Bank, Allied Bank and Ecobank. (Akomea & Adusei, 2013).

According to the BOG (2020) the banking sector is currently consists of the universal/commercial banks and financial institutions as the financial intermediaries and the governing body, the Bank of Ghana, non-bank financial institutions and about five hundred micro-finance institutions. Presently, twenty- four banks operating and two in the process of merging. Reforms in Ghana have relaxed the rigidity of definitions of banks in Ghana such that banks twenty three of these banks function as universal banks in Ghana. (Pricewaterhouse Cooper, 2019). The services that the universal banks provide range from commercial to investment banking (Benston, 1994). This allows the banks to shift towards commercial banking, investment and advisory except for merchant banks. Rural banks are restricted by location. They have lesser equity requirements and some specific regulations that are distinct from the universal and commercial banks. The BOG has set up a special unit that is in charge of the regulations of the NBFIs under the P.N.D.C.L 328. Example of the NBFIs includes the Home Finance Corporations which give funds to acquire houses and accommodation. (Akomea & Adusei, 2013). The total assets of the banks as at December, 2019 stood at GHS 129 billion. This figure represent a 56% increase in total assets since 2016. (BOG, 2020). The universal/commercial banks are made up of foreign and locally owned banks. Total deposits for the banks was GHS 83 billion compared to the GHS 58 billion The banking sector majorly depends on the deposits to finance its assets. The sector

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recorded 5.3% increase in deposits in 2019 comparing the deposits realized in 2017-2018 year and 2018-2019.

2.2.2 Reforms and Bank Recapitalization in Ghana

Ghana's banking sector has experienced many reformation since the 1983 with the most recent one taking place in 2017. Ghana's first reform was an Economic Recovery Program to restore the economy due to the crisis. (Johnston & Brekk 1991). The crisis was as a result of the socialist policies, political instabilities and poor administration of the country over a period. The IMF recommended that the banking sector be restructured under the Economic Recovery Program. They initiated the Financial Sector Adjustment Program. (Ayeertey, 1996). Under the FINSAP, financial reforms were first introduced to the Ghanaian financial sector. The reform was to promote efficiency of banks and their operations. It spelt out the supervisory and regulatory roles of the central bank in the sector which have been enacted to be used for the future. The reform relaxed initial regulations, allowing for the participation of private entities. The deregulation allowed for liberalization of the sector and the economy such that there was evidence of innovation and a healthy competition in the sector. This resulted in the growth of foreign direct investment. (Ayeertey, 1996).

2.2.3 Bank Recapitalization in developed economies

The importance of the banking sector to an economy which consist banks and non-banks financial institutions and the regulatory body in seeing to the economic growth is very evident particulin developed economics (Uboh, 2005).

Recapitalization may entails increasing the debt stock of the company or issuing new shares. Many developing Countries adopted financial reforms as part of economic reforms in the late 1980's (Uboh, 2005). Uboh realized that regulators in developed

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countries focused more on the capital adequacy of banking institutions in order to heighten the stability of their system. Berger (1995) studied the effects of bank recapitalization on profitability (ROE) with data collected from banks in the US. His studies showed that banks in the US experience high bankruptcy costs from 1983-1989 when a recapitalization directive was introduced. In studying the impact of bank capitalization in Philippines, Sufian and Chong (2008) discovered that there was a positive relationship between the regulation and ROE. They argued that the effect of bank recapitalization in developed countries is more likely to have a positive impact on the profitability of banks, yet still, this result is not constant and may not be the same when the directive is implemented in developing economies. Sufian & Chong (2008) further argued that the impact of bank recapitalization observed in an inter-country study shows different variable influences the impact on profitability in different economies.

Another study that was conducted by Berger & Bowuman (2013) is crucial to this study. The study delved into the effects of survival, profitability and markets shares of small banks in the U.S after a bank recapitalization. It was discovered that the state of the market also influences the effect on small banks. The study provided evidence that even though in market crisis and normal times, a positive impact was witnessed, it is not as significant as in times when the market is booming or good.

Swiss banks' capital behavior is very important in many aspects of bank. Firstly, Switzerland has much more experience with banking sector regulation and setting requirements. Swiss banking system is a good examples that reflect the long-term effects of capital requirements. (Gavalas & Syriopoulous, 2014). The Basle Accord committee established in Switzerland, propounded the bank recapitalization which has been adopted

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by many economies as a banking supervision directive. Swiss banks are considered to be one of the safest with regards to the probability of failing as they have higher capital ratios which helps cover the volatility of their ROA. (Gavalas & Syriopoulos, 2014)

2.2.4 Bank Recapitalization in developing Economies

Sufian & Chong (2008) study showed that bank recapitalization in developing economies does not always turn out like in developed economies. They found that developing economies should be willing to cushion banks before the exercise. Further they argue that banks should have a strong capital structure to undergo a bank recapitalization in developing economies to prevent financial crisis and shield depositors.

Adegbaju & Olukoya (2008) studied the effect of regulatory capital on the performance banks in Nigeria. They reported that the increase in the capital requirement of caused harm to banks in Nigeria. In the Nigerian banking industry, many banks shutdown and many more had to merge to have the capacity to meet the requirement. The ROE, which is a measure of the return on the investment of shareholders, fell from 99.45% all the way to 29.11 by 2003. (Sani & Alani, 2013). Ibrahim et al. (2012) also reported that the increase in the capital requirement resulted in the increase in cost of funding operations and many of the banks could not keep up, eventually winding up. The author concluded that when funding costs increases, banks use ascetic measures to control operating expenses. Okpara (2011) attributed the response of banks in Nigeria to the recapitalization and reported that most of the banks were very vulnerable and were exposed to harsh effects that come with the regulatory reform. Olalekan & Adeyinka (2013) in their study of the impact of

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regulatory capital adequacy on banks showed the profitability in Nigeria showed a positive impact on the banks.

Chang & Hunter (1998) studied the effect of bank recapitalization on foreign owned and domestic (local) banks. They made the claim that in developed economies local banks perform better than the foreign owned banks. They however observed the opposite in developing economies. Banor & Odonkor do not find a difference in the impact of bank recapitalization on foreign and local bank profitability. Bokpin (2013) disagrees with this and argues that foreign banks are however more profitable.

Conclusions and Research Gaps

There are many studies and evidence that shows the effect of the capital directives in developed economies. It is also palpable from literature that the economies of developed economies do well to keep banks and absorb much of the shock that hit the financial sector due to regulatory reforms. Uboh (2005) discovered that indigenous banks in such countries perform better than foreign banks but there is not much literature to show for in the case of developing economies. This research gap is what this studies seeks to address.

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CHAPTER 3: METHODOLOGY

3.0 INTRODUCTION

Chapter 3 of this paper focuses on the methodology of the study, capturing data collection, type of data, data analysis, and hypothesis among many others. In this chapter, I give clarifications on my research question as to how they will contribute to achieving the research objectives. The type of data, data collection and analysis and other statistical tools necessary to be used for this research are highlighted with relevant justification as to why they are being used. The research variables are stated and finally the limitations and ethical that may arise in the course of data collection.

3.1 RESEARCH DESIGN

The motive for which this topic is being explored is to discover the effect of the increase in the capital requirement by investigating the effect on the profitability of the banks. Jupp(2011) defines research design as a strategy allows the author uses to define and structure the methods to be used in the research. Besides that, the research design helps create a link between the proposed method of research and the research objectives. (Jupp, 2011).

For this research, financials of the banks and use mathematical tools are employed for data analysis. These are made up of statistical figures and mathematical computations to resolve the question the researcher seeks to answer. For this reason, the quantitative research method will be used. The profitability metrics are Return on Assets, Return on Equity and net interest margin.

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3.2 SAMPLING SIZE & SAMPLING TECHNIQUE

The target population are all the universal/commercial banks in Ghana that made it through or were approved by the BOG after the minimum requirement directive in December 2018. Twenty- three banks were approved to have met the requirement and were given the go ahead to continue operations. Out of these twenty-three banks, eight banks will be selected to be used for the research.

The sampling technique used to choose the banks for this study is the purposive sampling technique. This is because among the twenty-three banks only seven are local banks. Two of these banks do not undergo recapitalization requirement; NIB and ADB. The consolidated bank which is the third bank was set up after the directive to take over assets and handle the accounts of the banks that have been consolidated. Thus leaving only four local banks. With regards to this, the purposive sampling technique is adopted for this study.

3.3 RESEARCH QUESTIONS

Major question

What is the impact of minimum capital requirement on the profitability of foreign and local banks?

Minor Questions

Is there a relationship between bank recapitalization and profitability?

What is the relationship between Capital Adequacy ratio and Return on Assets of foreign banks and Local banks?

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3.4 HYPOTHESIS

Hypothesis 1

H_0 = There is a negative impact of recapitalization on foreign banks

H_1 = There is a positive impact of recapitalization on foreign banks.

Hypothesis 2

H_0 = There is a negative impact of recapitalization on local banks

H_1 = There is a positive impact of recapitalization on local banks.

3.5 DATA & DATA COLLECTION

Secondary data will be collected for this study. The secondary data collected from bank financials was used for quantitative analysis as the research employs a quantitative research approach. Data for the quantitative analysis include the financial statements and future projections of the banks. This data will be used for the analyzing the profitability.

The financial statements for the eight banks being was retrieved from their website and the websites of the SEC. The financial statements will collected for the period, that is, from 2007 to 2019. The year 2012 and 2017 which are years that recapitalization took place in are considered base years or turning points. The banks that are reviewed for this research are

Foreign banks- Societe Generale, Standard Chartered Bank, ABSA, Ecobank

Local Banks- CAL Bank, Fidelity Bank, Prudential Bank, Ghana Commercial Bank.

The financial data of these banks that was used for the research include;

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Total Assets, Return on Assets, Return on Equity, Capital Adequacy ratio.

The data used in this study can be considered as both a time series data and cross-sectional data. Ya-Lun-Chau (1985) defines time series as a data set recorded at specific times, usually at equal time intervals. A cross-sectional data is an observation of different subjects, example firms, countries at a point in time. (Lavrakas, 2008). These characteristics can be identified in our data set and thus can be treated as a panel data.. A fixed effect model and random effects model. A Hausman is also used to determine which results should be used for analysis. A multicollinearity and homoscedasticity will be tested to test the assumption of the regression.

3.6 DATA ANALYSIS

There is one major research question which was sought to be investigated the relationship between recapitalization and profitability of banks. In this research, the effect of recapitalization on foreign-owned banks and locally-owned banks is highlighted. For this paper, a simple multiple regression is intended to be used for the analysis. The data will be pooled to run the regression.

In the study of regulation and performance, Zgarni & Hassouna (2018) used a linear regression model. The model was used to measure the relationship that lay between return on assets and solvency ratios. This model can be adjusted and used for different data set. It can be adopted and applied for a panel data analysis.

Hutshison and Cox (2007) studied bank performance and recapitalization and used the panel regression model. However to be able to ground their findings of the effect on profitability, they dis their studies on two recapitalization exercises in the US. This method

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can be adopted, however, can only be implemented in a few years to come since it has only been two years since the 2017 bank recapitalization exercise.

Similarly, Heffernan & Fu (2010) used the multiple linear regression model with a panel data in studying. The data being used for this research is panel data and based on the literature reviewed, there is enough evidence that a simple multiple regression can accommodate various data types. Thus, an adjusted simple multiple regression model will be applied to the panel data to achieve the research objective and a panel data analysis will be employed. Kosmidou et al. (2005) when investigating the profitability of UK owned commercial banks (local banks) from 1995 to 2002 used the fixed effect panel regression model. In this study, Olaekan and Adeyinka (2013) model of data analysis and collection will be adopted and adjusted to suit the data. The difference is these authors used primary and secondary data, that is, financials of the banks and data collected from the officials from the bank. On the other hand, in this study, only the secondary data is used.

3.6.1 Profitability regression model

According to Swindle (1995), in investigating the performance of banks, the CAMEL variables are used to develop models. This is in accordance with International standards for evaluating the performance of banks. CAMEL represents capital, asset, management, earnings and liquidity of a bank. In this research, the relationship between profitability and recapitalization. Profitability using the CAMEL approach, will be represented by earnings which will be represented by ROA. Aiyar, Calomiris and Wieladek (2015) studies show that recapitalization led to an increase in the equity of banks. Equity is represented in the CAMEL as the capital. There is also evidence that supports the claim that recapitalization has a relationship with risk-weighted assets and total assets. These are

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represented in the CAMEL as assets. Based on these, a model which finds the relationship between profitability and recapitalization directive using a simple multiple linear regression is derived. A simple regression model shows the relationship between the dependent variable and independent variables. A simple multiple multiple regression model can be depicted as;

$$Y = \sum \beta_{0-n} X + \varepsilon$$

Y is the dependent variable

X is the independent variable

β is the coefficients of the variables in the equation

ε is the error term.

The adjusted simple multiple regression model to determine the relationship of profitability and minimum capital requirement using the CAMEL approach (Swindle, 1995) will be:

$$Y_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 TA_{it} + \beta_3 GDP_t + \varepsilon_{it}$$

Where,

Y = Dependent variable (ROA)

β_{0-3} = Coefficients of variables

TA = Total Assets (the log of the total assets was taken when running the regression)

CAR = Capital Adequacy Ratio

GDP = Real GDP growth

i, j = locally-owned bank, foreign bank,

t = year recorded

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3.7 VARIABLES OF THE STUDY

3.7.1 ROA

ROA means the return on assets of a firm. In simple terms, ROA measures the returns realized from the asset it is calculated by dividing profit after tax by total assets of the firm. The ROA measures the profitability and efficiency as it shows the returns from the use a firm's assets and somewhat signify. Firms with high ROAs are said to be very profitable because they generate more income with the less amount of assets.

3.7.2 Capital Adequacy Ratio

Capital adequacy ratio is a measure of a bank's capital computed as a ratio of its risk-weighted asset exposures (Hayes, 2019). It measures the amount of capital a firm has to be able to absorb shocks. It also represents the amount of risk weighted assets a firm possess. Banks in G-10 countries (countries that were first to be implement the Basle Accord) had their capital adequacy ratios increased when capital requirements are introduced (Uboh, 2005). Central banks use the capital adequacy ratio as a measure of losses a bank can handle when exposed to insolvency risks as it require banks to hold an amount of capital as reserve. (Investopedia, 2019). According to the Basle Accord (1995), the CAR is calculated by adding of the Tier 1 and Tier 2 capital and dividing the risk weighted assets of banks.

3.7.3 Total Assets

The number of assets possessed by a firm is likely to influence the firm's ability to raise excess capital to meet the requirement as Tallion (2001) discussed. A large bank (large market cap) is more likely to be able to raise capital and recover from the shock of the industry than a smaller bank. In this model the size of the firm will be measured by the

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total assets. A firm with large amounts of assets can generate more income. Large number of assets do not signify profitability, however a bank with large amounts of assets can use its assets to generate wealth and thus a high ROA. (Investopedia, 2017)

3.7.4GDP

GDP here signifies the Real GDP growth rate which measures the annual rate of growth of an economy. It shows the annual personal consumption, government spending and investment and net trade. A growing economy encourages investment, government spending increases too. A good GDP can translate to higher earnings for firms. (Taylor, 2003). Real GDP growth is adjusted for the effects of inflation. Persistent rise in inflation has adverse effects on businesses. Real GDP growth rate is calculated quarterly and an average is presented for the annual rate. If within a year growth rate is low or in the negatives it affects businesses (banks). (Bureau of Economic Analysis, 2018). It is an independent variable in this model as it influences profitability of businesses. GDP will represent the time varying variable included in the model

3.8 LIMITATIONS & ETHICAL ISSUES.

Throughout the data collection process, a problem was encountered while retrieving the financials of banks. For figures such as the ROA, ROE and capital adequacy ratio, it is not required of banks to publish these in their financials and thus must be calculated manually. This may result in not attaining the true figures which affects the credibility of the results of this research.

The sample used for this study is not very representative of the banks in the Ghanaian industry. Eight banks were analyzed in total, four foreign banks and four local

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banks. These sample were not randomly selected as the available population for the category of local banks was limited. Out of the eight existing local banks, three of them do not undergo recapitalization. These are National Investment Bank, Agricultural Development Bank and Universal Merchant Bank. OminBank as merged with Sahel Sahara Bank Ghana, a foreign bank, leaving the four banks analyzed in this research. (BOG, 2017)

With respect to ethical issues, there are the tendencies that some banks produce false or forged financials as there will have the notion that their financials or other information that will be given out during the data collection process will be sent out and their true financials may not be projecting a good standing of the bank. This will influence the results of the regression and affects the validity if the results.

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CHAPTER 4: RESULTS

4.0 Introduction

The chapter explains and reviews the result from the regression and sample T test that were conducted. In the previous chapter, the method of analysis, data collection sample and variables crucial to this research were discussed. In chapter four, a trend analysis is conducted with the ROA, ROE and the Total assets for the banks over a thirteen year period. The results of the regression run are then analyzed to identify the correlation of recapitalization and profitability..

4.1 TREND ANALYSIS

4.1.1 ROA

Table 2

ROA of Banks 2007-2019

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CAL	2.74%	2.68%	1.83%	1.86%	2.09%	4.45%	5.98%	5.27%	4.94%	0.30%	3.62%	2.80%	2.50%
GCB	2.85%	2.28%	0.98%	2.44%	0.73%	4.80%	6.73%	6.62%	5.45%	5.24%	2.44%	3.22%	3.39%
FDB	0.28%	1.06%	0.56%	0.74%	0.94%	2.25%	3.00%	4.00%	4.00%	0.36%	1.89%	2.64%	2.81%
PRU	1.63%	1.67%	1.00%	1.07%	1.70%	1.57%	1.88%	1.73%	0.78%	0.53%	-1.23%	0.80%	0.83%
SCB	4.09%	3.37%	4.09%	4.33%	3.94%	5.70%	6.69%	5.94%	1.96%	5.13%	5.94%	3.50%	3.60%
SOG	2.77%	3.55%	3.35%	2.82%	2.72%	2.78%	2.99%	2.97%	2.23%	2.61%	3.24%	1.80%	3.00%
ECB	3.34%	3.65%	3.88%	3.95%	3.39%	3.87%	4.06%	5.55%	4.80%	4.07%	2.79%	3.20%	3.43%
ABSA	2.60%	-0.80%	-1.40%	3.60%	4.40%	5.30%	6.20%	6.00%	4.90%	5.80%	6.50%	4.30%	4.00%

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements

Table 2 is an exhibit of the trend of the ROA of the banks from 2007 to 2019. It display the ROA of the banks five years before and after the 2012 recapitalization directive and two years after the 2017 recapitalization. The lowest ROA was recorded by ABSA in 2009. The period that recorded the highest ROA amongst all four banks is 2014 and 2009

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recorded the lowest peak. Standard Chartered bank, a foreign bank recorded the highest ROA of 6.69% in 2013.

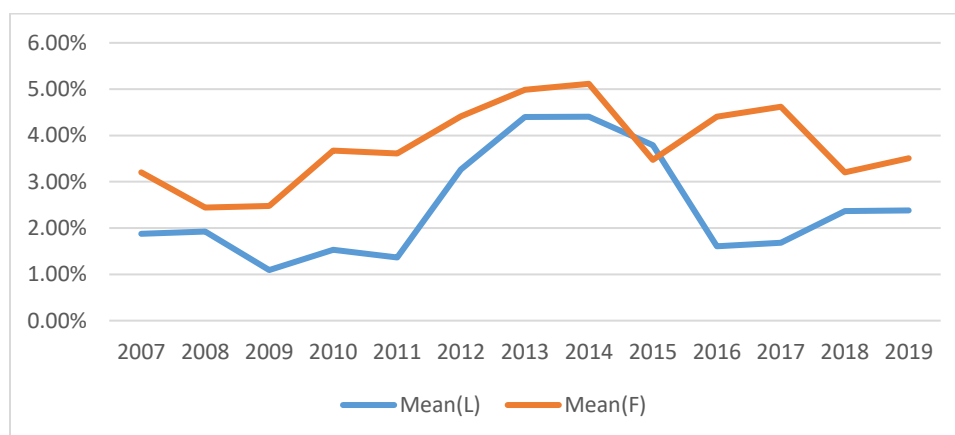


Figure 1 Mean of Locally-owned and Foreign-owned Banks from 2007-2019

In figure 1, Mean (L) represents the means of the four local banks and Mean (F) represent the means of the four foreign banks. From Figure 1, generally the means of foreign banks are higher than the means of the local banks. The highest mean of 5.12% was recorded in 2014 by foreign banks. The graph shows that in 2009 both foreign-owned and locally owned banks recorded the lowest means. In addition, the graphs show that the foreign banks recorded a steady growth from 2009 to 2014 but the local banks recorded a swift rise from 2011 to 2013 and maintained the same mean from 2012 to 2013 of 4.41%. One difference to note is from 2017 to 2018, local banks recorded an increase in the mean from 1.68% to 2.37% on the other hand the foreign banks recorded a decrease from 4.62% to 3.20%.

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4.1.2 ROE

Table 3

ROE of the Banks from 2007-2019

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CAL	16.70%	24.20%	14.20%	12.00%	19.10%	24.90%	32.60%	35.80%	32.00%	2.00%	22.80%	19.70%	17.80%
GCB	15.08%	18.05%	9.07%	28.00%	10.10%	48.30%	50.00%	41.00%	29.97%	29.45%	17.85%	24.30%	25.40%
FDB	6.51%	25.10%	10.60%	14.40%	21.00%	31.00%	32.00%	31.00%	33.00%	2.95%	17.60%	26.71%	29.40%
PRU	33.27%	31.96%	14.00%	12.57%	19.15%	14.50%	15.57%	17.13%	7.62%	5.65%	-11.37%	3.90%	4.24%
SCB	37.40%	37.10%	36.00%	36.80%	33.40%	43.80%	42.70%	39.40%	11.90%	29.30%	30.80%	20.10%	22.34%
SOG	37.50%	22.30%	17.80%	16.70%	15.20%	17.80%	18.80%	22.40%	16.90%	19.20%	17.40%	8.80%	16.00%
ECB	19.80%	41.60%	26.40%	26.80%	27.90%	31.40%	33.40%	39.50%	37.20%	34.20%	24.90%	25.70%	26.00%
ABSA	32.20%	-6.00%	-11.20%	24.50%	26.20%	28.20%	32.10%	37.00%	30.30%	38.40%	36.70%	29.10%	28.60%

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements

In table 3, the Return on Equity of both locally and foreign owned banks. The lowest ROE of -11.37% was recorded by Prudential bank a local bank. However, ABSA a foreign bank recorded low ROEs of -6.00% and -11.20% in 2008 and 2009. It is observed that among the local banks, GCB records very high ROE that is comparable to the ROE of the foreign banks. GCB recorded the highest ROE of 50% among the banks. It was observed that the ROE of Societe Generale decreased over the period. All the banks recorded high ROE in 2013 to 2015. This is captured in Figure 4.

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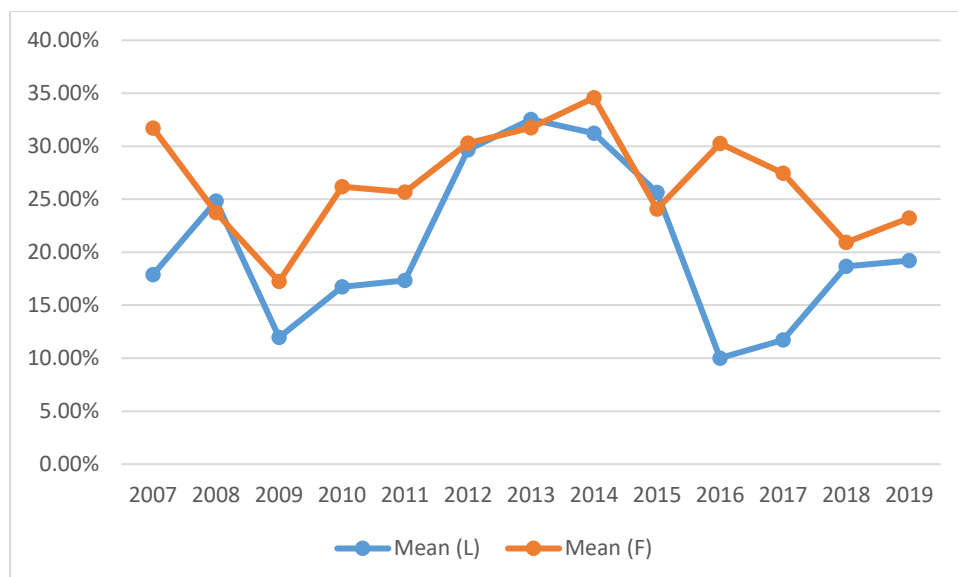


Figure 2 Mean of ROE of Locally owned and Foreign-owned Banks

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculations of author in Excel

Per Figure 2, it is observed that there more competition between the local and foreign banks in terms of ROE. The foreign-owned banks have a higher mean than locally banks, peaking at 34.48% in 2014. The lowest mean of ROE for foreign banks was 17.25 % recorded in 2009 which is still higher than the lowest mean of 10% recorded by local banks. Along with that the results showed that both foreign and local banks recorded a dip in the ROEs in 2009. Furthermore, in 2007 and 2008 when the local banks recorded an increase in the mean of the ROE, foreign banks saw a fall in the mean of their ROE.

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4.1.3 Total Assets

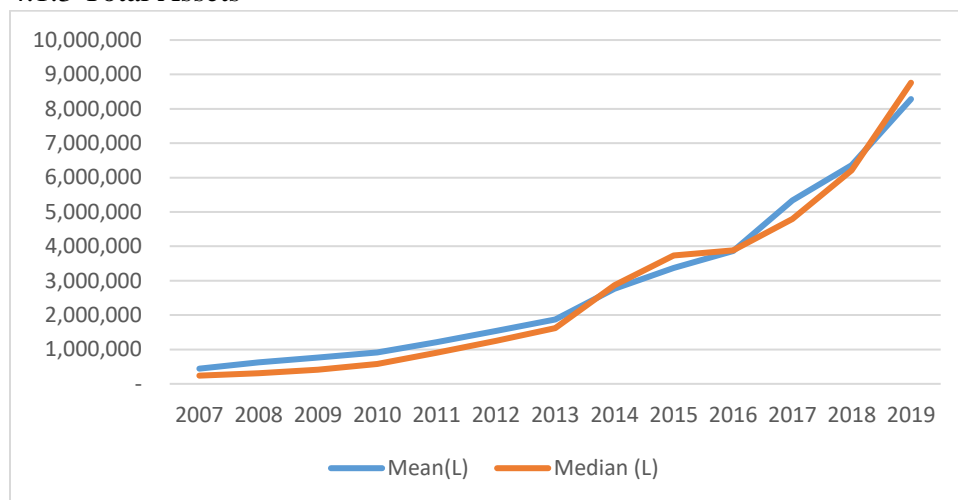


Figure 3 Mean & Median of Total Assets for Local Banks from 2007-2019

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculated and generated in Excel

Figure 3 shows the mean of the total assets of local banks for each year from 2006 to 2019. It also shows the median of both groups of banks for the same period. From the graph, it can be seen that both the median and mean of total assets have grown exponentially. A mean of GHS 442,258 in 2007 increases sharply throughout the years and reaches a mean value of GHS 8,282,561 in 2019. Similarly, the median value starts at GHS 238,431 in 2007 and rises each year afterwards, with a median value of GHS 8,758,901 in 2019. Both the mean and median values of total assets for local banks have similar movements over the years under consideration.

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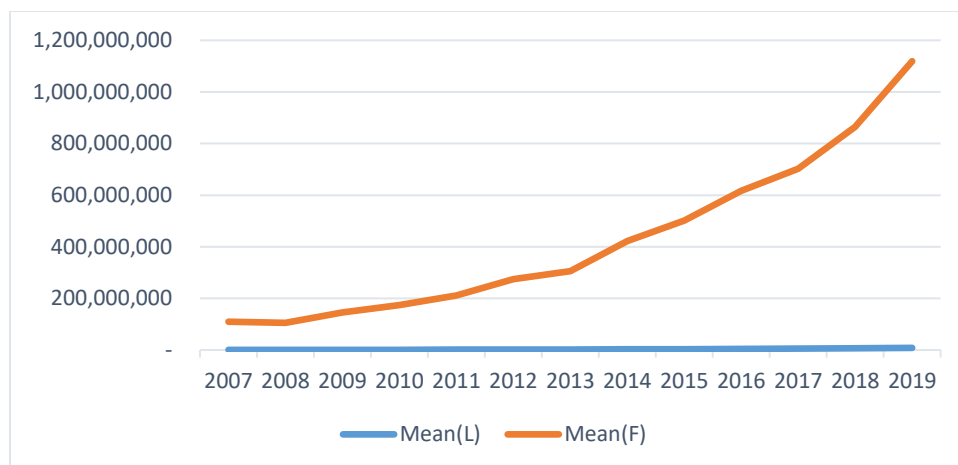


Figure 4 Mean of Total Asset of the Locally and Foreign owned banks from 2007-2019

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculated and generated in Excel

However, in comparing the mean of total assets of these local banks to that of foreign banks, we can see a contrast. From Figure 4, the mean of total assets of foreign banks has a steeper upward trend, starting from below GHS 200 million at GHS 109,844,953 and then sharply increasing over the years under observation with an end value of in excess of 1 billion cedis at GHS 1,119,124,488. The mean of the total assets for local banks is however below the 200 million cedis mark during the years under consideration.

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4.1.5 GDP

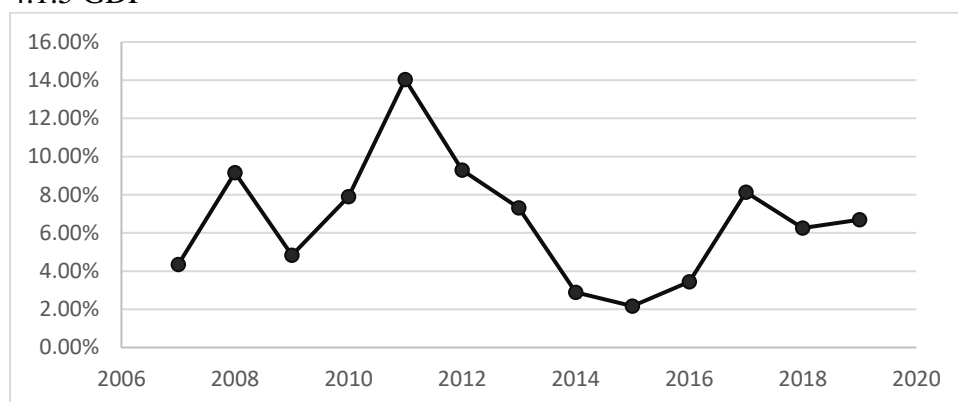


Figure 5 GDP growth Rate of Ghana from 2007-2019

Data source: World Bank – Country Profile (2007-2019)

Figure 5 shows Ghana's GDP from 2007 to 2019. GDP rose between 2007 and 2008 from 4.34% to 9.15%. However, after 2008, there was a fall back to 4.84 for 2009. Between 2009 and 2011, GDP rose to 9.29%, which is the peak for the years considered here. From 2011 to 2015, there was a fall in GDP, with 2015 having a value of 2.17, the lowest value for the years under observation. From 2015 onwards, there has been a rise in GDP, with the highest rise since 2015 being recorded in 2017 at 8.14%.

4.2 REGRESSION ANALYSIS

4.2.1 Descriptive analysis

Table 4

Descriptive Statistics- Local banks

Variable	Mean	Median	Standard Deviation	Variance
ROA	0.21	0.19	0.12	0.01
CAR	0.17	0.15	0.05	0.00
Log(TA)	6.21	6.26	0.50	0.25
GDP	0.07	0.07	0.03	0.00

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculated and generated in Excel

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Table 4 displays the descriptive statistics of the total assets, Capital Adequacy ratio, the Real GDP growth rate and ROE for the four local banks used in this research.

Table 5

Descriptive Statistics- Foreign Banks

Variable	Mean	Median	Standard Dev	Variance
ROA	0.26	0.28	0.11	0.01
CAR	0.18	0.17	0.04	0.00
Log(TA)	7.12	6.67	1.22	1.49
GDP	0.07	0.07	0.03	0.00

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculated and generated in Excel

The descriptive statistics of the ROE, ROA, CAR, Total Asset and GDP growth rate (of Ghana) of the foreign banks are captured in table 5. For local banks, return on assets over the years had a mean and median of 0.21 and 0.19 respectively, with a standard deviation of 0.12. However, foreign banks had a higher return on assets mean and median of 0.26 and 0.28 respectively with a lower standard deviation of 0.11. The local banks have a CAR of 0.17 on average with a standard deviation of 0.05. Again, the foreign banks record a higher CAR of 0.18 on average with a lower standard deviation of 0.04. The average of total assets (in logarithm) for local banks was 6.21 with a median and standard deviation of 6.26 and 0.5 respectively. Foreign banks have a higher average total assets (in logarithm) of 7.12, a higher median of 6.67 and a much higher standard deviation of 1.22. The average GDP for the period was 0.07, with a standard deviation of 0.03. The summaries of the descriptive statistics can be found in Table 4 and 5 above.

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4.2.2 Multicollinearity (Correlation Matrix Test)

The multicollinearity shows the correlation between the independent variables and how they affect each other. To use the multiple linear regression, there should be no or insignificant multicollinearity (Allen, 1997). These means that the independent variables are not correlated with each other. If independent variables are correlated with each other, it will result in large errors. The correlation matrix of the variables will be teste using the Variance Inflation Factor (VIF).

Table 6

Variable Inflation Factor Results

Independent Variables	TA	CAR	GDP
VIF Results	1.07	1.09	1.02

Data source: Calculated and generated in Excel

There is a rule that, for an independent variable to be used for a regression, the VIF results should not be greater than 10. If it is greater than 10, it is likely to cause problems such as large standard errors and should be taken out. From Table 6, none of the variables produced a VIF results greater than 10. This means our independent variables can be used for the regression. When there is the presence of multicollinearity in the model, the matrix of correlations can be conducted, it will however not be used in this study as there is no existence of multicollinearity.

4.2.3 Breusch-Pagan Test for Homoscedasticity

H_0 = There is homoscedasticity

H_1 = There is heteroscedasticity

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*Table 7**Breusch-Pagan Results-Homoscedasticity*

	BP Statistic	p-value
Results	3.834	0.2801

From Table 7, the p-value is greater than the confidence level of 5%. Based on this result, we fail to reject the null hypothesis that states that there is homoscedasticity. Therefore, there is homoscedasticity in the data. Homoscedasticity means that the distribution of variance across the independent variables are homogenous or similar. This property is important to test in data to show that the variances in the data are constant across the independent variables.

4.3 Summary of Regression

For both analysis of the foreign banks and local banks, panel data was used. The data was considered a panel data as it had the characteristic of a times series data sets and cross sectional data set. For panel data analysis, there are two types of models to be employed, the fixed effects model and the random effects model. The fixed effects model as well as the random effects model was run for both types of banks.

Hypothesis for the models

Null Hypothesis: The independent variables do not influence the profitability of the banks

Alternate Hypothesis: The independent variable influence the profitability of the banks

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4.3.1 Summary of Regression using the Fixed Effects Model

Table 8

Fixed Effects Model Results for Local Banks

	Estimates	Standard Error	Pr(> t)
TA	-0.022446	0.048867	0.6482
CAR	0.410681	0.515772	0.4302
GDP	0.183382	0.595692	0.7596
Significant Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1			
R-squared: 0.014191			
Adjusted R-squared: -0.11725			
F-statistic: 0.215929 on 3 and 45 DF, p-value: 0.88484			

Data Source: Calculated and generated in R Studio.

From Table 8, all the variable have p value if the variables are above 0.05. This implies that all the variables are not significant to determine the ROA. This show that there is a low correlation between the independent variables and the profitability of the banks measured by the ROA. The overall p-value of the fixed effect model was greater than 0.05 significant and this signifies that using the fixed effect model, the variables do not largely influence the ROA in local banks in Ghana.

Table 9

Fixed Effects Model Results for Foreign Banks

	Estimates	Standard Error	Pr(> t)
LOG_TA	-0.015097	0.040165	0.7088
CAR	0.111326	0.366603	0.7628
GDP	-0.249715	0.485189	0.6093
Significant Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1			
R-squared: 0.0085838			
Adjusted R-squared: -0.12361			
F-statistic: 0.129872 on 3 and 45 DF, p-value: 0.94185			

Table 9 displays the fixed effects model results for foreign banks. The p-value for the model is 0.94285 and this is greater than the 0.05 confidence level and so we fail to

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reject the null hypothesis. The R-squared value of 0 implies that the model does not explain the variances of the data around its mean.

4.3.2 Summary of Regression using the Random Effects Model

Table 10

Random Effects Model Results for Local Banks

	Estimates	Standard Error	P-value
(Intercept)	0.05988512	0.24103005	0.8038
TA	-0.0004052	0.04601526	0.9930
CAR	0.69827157	0.46157749	0.0193
GDP	0.45317957	0.58946792	0.4420
Significant Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1			
R-squared: 0.781707			
Adjusted R-squared: 0.724313			
Chisquare: 4.27087 on 3 DF, p-value: 0.023366			

According to Table 10, the p-value of CAR is below 5% significant level. This implies that all variables except GDP influence the ROA of local banks. Moreover an R-squared of 0.281707 show that the model is appropriate and the independent variable can be used as explanatory variables for the dependent variable under the random effects model.

Table 11

Random Effects Model Results for Foreign Banks in Ghana

	Estimates	Standard Error	P-value
(Intercept)	0.503011	0.157670	0.001421
TA	-0.032656	0.019356	0.089917
CAR	0.282421	0.353593	0.008156
GDP	-0.285348	0.469351	0.543212
Significant Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1			

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R-squared: 0.60505
Adjusted R-squared: 0.54018
Chisquare: 3.09126 on 3 DF, p-value: 0.037777

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculated and generated in R Studio

Considering the results captured Table 11, the CAR significantly influence the ROA of the foreign banks under study. This p-value of the model is 0.0377777. Thus considering the significant level of 5%, the p-value is less. It can be deduced that with the random effect model the independent variables are statistically significant to determine the ROA of the foreign banks in Ghana.

4.3.3 The Hausman test

The Hausman Test is a test used in statistics and econometrics to determine the appropriate model for the analysis of data sets. It was propounded by Durbin Wu Hausman to evaluate how a model suits a data set. In this paper the Hausman test was helped to determine whether the random effect model or the fixed effect model was appropriate. If the p-value is less than 0.05, the alternate hypothesis was accepted. If p value is greater than 0.05, we fail to reject the null hypothesis. (Frondel, 2010)

H₀: The random effects model is consistent

H₁: The fixed effects model is consistent.

Table 12

Results from Hausman Test of Local Banks

F-Test
ROA ~ LOG_TA + CAR + GDP

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Chisq = 6.7207, df = 3, p-value = 0.08135
Alternative hypothesis: one model is inconsistent

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculated and generated in R Studio

Per Table 12, the p-value of the test conducted was greater than 0.05. Thus we fail to reject the null hypothesis. This means the results from the random effects model may be used for analysis for the local bank.

Table 13

Results of Hausman Test of Foreign Banks

The F-Test
ROA ~ LOG_TA + CAR + GDP
Chisq = 0.35495, df = 3, p-value = 0.9494
Alternative hypothesis: one model is inconsistent

Data source: Pricewaterhouse Cooper (2007-2019), Banks Financial Statements, Calculated and generated in R Studio

The results from the Hausman Test conducted for the foreign banks is captured in Table 13. The p-value of the test is seen to be greater than the significant level of 5%. This means the results gotten the random effects model will be used for interpretation and analysis.

4.3 INTERPRETATION OF REGRESSION RESULTS

The results generated based on the random effects model for both foreign-owned and locally-owned banks was be used for the analysis. As per the results Table 8, the CAR coefficient was 0.69827157. This implied a positive correlation between the CAR and ROA. This means that for every increase in the CAR, a positive increase in the ROA of local banks will be seen. In comparison to the foreign banks, it shows a positive correlation between the CAR and the ROA with CAR having a coefficient of 0.282421. Capital

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Adequacy ratio is a recapitalization directive. In this research the capital adequacy ratio is used to measure the increase in minimum capital requirement. In the 2012 recapitalization directive banks were required to maintain a minimum capital to assets ratio of 10%. In the US, when the CAR of banks was increased, it resulted in an increase in ROA. This could explain why the CAR has a positive coefficient in both foreign-owned banks and local-owned banks. The increase in capital requirement such as the capital adequacy ratio generally has a positive effects on the ROA of a bank.

The coefficient for Total asset is approximately zero in the case of local banks. This means total assets has a small influence on the profitability of the local banks. In the foreign banks, total assets has a coefficient of -0.032656. This implies a negative relationship between total assets and ROA. GDP growth rate has a positive relationship of 0.45317957 as its coefficient in local banks whilst a negative coefficient of -0.285348 in foreign banks. The R-squared of the model for local banks show that the explanatory variable explain the 28.17% of the result while in the foreign bank it explain 6.05%. Therefor capital adequacy ratio (recapitalization) influence the ROA of banks.

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CHAPTER 5: CONCLUSION

5.0 Introduction

This chapter is the concluding chapter. It embodies the summary of the entire paper. In this chapter, the hypothesis is restated and linked to the finding to give a clear understanding of how the research objectives have been achieved. Some recommendations are given based on the interpretations on recapitalization that can be considered by the regulator and banks. Finally, recommendations for further research are suggested.

5.1 SUMMARY OF STUDY AND OBJECTIVES

This research is aimed at investigating the effect of the bank recapitalization on the profitability of foreign banks and local banks in Ghana's banking sector. This research was motivated by the 2017/2018 banking crisis that saw some banks exit the industry, others having their licenses revoked and yet still others were taken over by the Consolidated Bank of Ghana.

In the 2017 banking industry "clean-up", the minimum capital required of banks to keep with the BOG equity and debt. For listed banks it would be easier to raise banks. On top of that, research has shown that foreign banks are likely to receive support from their parent companies abroad to meet the requirement. After the 2017 banks recapitalization, most of the banks consolidated were local banks. In this research local banks were defined to be banks that have majority of their ownership held by Ghanaians or were set up by Ghanaians. Foreign banks are banks who are established in other countries and have set up in Ghana. These observations influenced the decision to look into the effects of bank recapitalization on foreign and local banks. The 2017 bank recapitalization could be studied as there is limited information to work with since it had

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been only a year after the recapitalization, thus the 2012 recapitalization exercise was studied.

5.2 SUMMARY OF FINDINGS

After conducting a fixed and random effects model on the data set, it was found that the CAR influences profitability in both local and foreign banks. CAR, Total Assets and GDP growth rate were the independent variables which run in a regression to see how they significantly affect the ROA of banks. CAR was the measure of recapitalization. A positive relationship was observed between the ROA and CAR and GDP growth rate and a negative relationship was found between the total assets and ROA for the locally-owned banks. On the other hand, a positive relationship was identified between only the CAR and ROA, the other variables showed a negative correlation with ROA in the case of the foreign banks.

ROA is a measure of the profitability of banks which reveals how much returns banks can make from the use of their assets. ROA is calculated as the net income of the firm divided by its total assets. This implies that the bigger the Total Assets compared to the net income, the smaller the ROA. This could explain the negative relationship between ROA and Total Assets. Also, there was a negative relationship between ROA and GDP in the case of foreign banks, however, a positive relationship was observed between the GDP Growth rate and ROA in the case of local banks. A positive GDP growth rate therefore benefits local banks then foreign banks.

Since the CAR was the measure of bank recapitalization which had a positive relationship with ROA, it can be said that there is a positive impact of recapitalization on bank profitability. The impact of an increase in bank recapitalization on the profitability of

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both foreign and local banks is positive. The Paired sample mean test showed that the means of the ROE of both foreign and local banks increased after the bank recapitalization. It is also observed that the mean of ROE in foreign banks was higher than the ROE in the local banks. This shows high profitability in foreign banks than local banks.

5.3 RECOMMENDATIONS

The BOG exercises its power to strengthen the banking sector when it embarks on a recapitalization and regulatory clean up. The effects of these recapitalization is felt differently by banks regardless of being foreign bank or local bank. The Ghanaian banking sector is still growing and not as strong as in the advanced countries. Bank recapitalization in advanced countries have been seen to have strengthen the sector, improved performance and promoted healthy competition among banks.

This research was not conducted on the 2017 bank recapitalization, however, the researcher started out to probe the effects of the 2017 bank recapitalization and the exit of many local banks due to some limitations such as access to the financials of the banks that have been consolidated. The BOG should investigate the effect of the amount of increase on various banks. The initial minimum capital requirement was GHS 120 million. This amount was increased to GHS 400 million and banks were required to meet this in a year. The new minimum capital requirement is over a 100% increase of the first and may have put stress on the banks.

Collectively the results show a positive impact on the profitability of the banks, nevertheless, individually banks may have encountered difficulty raising the extra capital. For listed banks, it might be easier to raise the excess cash compared to unlisted banks. Banks are therefore advised to increase their capital set aside for reserve with the BOG

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from time to time and not necessarily wait on a regulation. This will save them the stress and trouble of being pressed to meet a requirement in a short period of time.

5.4 RECOMMENDATIONS FOR FURTHER STUDIES

Further research can be conducted on the effect of recapitalization on the rural banks. The recapitalization was not only done for commercial/universal banks. Research can be done to look into the effects of the recapitalization on profitability of rural banks. It will be imperative to use the Heffernan & Fu (2010) model and the methodology used in this paper. This way, it will be easy to compare the effects on commercial/universal banks and rural banks. Furthermore, researchers can look into the effects of the bank recapitalization on the liquidity of banks. Profitability and liquidity are important to a bank's performance and survival in its operations.

Since the 2017 bank recapitalization is very recent and its full effects cannot be observed now. In future, an extensive research can be done to look at the effect of the recapitalization on the profitability of the banks used in this research paper. This will allow for comparison of the effects of the 2012 and 2017 bank recapitalization directive on the eight banks. This can help to inform the BOG on the intervals to observe and measures to consider before embarking on a recapitalization in the banking sector.

Finally, when applying the findings of this research, it will be necessary to consider the limitations of this paper. This paper empirically investigated the impact of recapitalization requirement on foreign and local banks using a panel data analysis. Due to the closure and revocation of licenses of some banks, the sample used in this paper were

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not randomly selected. This limited the researcher from using a normal paired t test to compare the means of the banks.

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