UNIVERSITY OF CAPE COAST

DETERMINANTS OF PROFITABILITY OF COMMERCIAL BANKS IN GHANA

BY

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DECLARATION

Candidate's Declaration

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

Candidate's Signature……………………………….Date……………………...

Name: Eric Kyei Boamah

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Signature…………………………….Date…………………..

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ABSTRACT

This study analyses the determinants of commercial banks profitability in Ghana. These determinants have been grouped into internal factors and external factors. Panel Data collected on seven commercial banks in Ghana was examined over a period of 2007-2017, the generalized least squares technique was used to estimate fixed effect regression models. Statistical Package for Social Sciences (SPSS) was used in analyzing the data.

This study was motivated to research into the factors that influence the profitability of only Ghanaian banks listed on the Ghana Stock Exchange. ROA and ROE were the major measures used to assess the profitability of banks. The variables that were significant in the determination of the profitability of banks were liquidity, capital adequacy, inflation and quality of asset. These factors included both. The study concluded by pointing out that the implications of the presence of multicollinearity makes it difficult to predict which variable is having greater influence on the ROA and ROE, also the variables used can either have positive or negative implication on the major measure of profitability used for the study. The study recommended that the research departments in the banks should carry out further studies on this areas due to the presence of multicollinearity the study recommends that authorities in charge of managing commercial banks should put in place proper loan recovery mechanisms and advertising strategies to increase their market share to enable them improve on the variables such as quality of asset, liquidity and adequacy of capital that have the potential of reducing the negative implication that the other variables will bring.

KEY WORDS

GDP – Gross Domestic Product

INF – Inflation

ROA – Return on Asset

ROE – Return on Equity

CBK – Concentration of Banks

ETI – Expense to Income Ratio

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DEDICATION

To my lovely Parents Mr. George Boamah and Mrs. Georgina Ofosua Boamah.

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CHAPTER ONE

INTRODUCTION

The growth and development of the economy depends greatly on Financial Institutions. The overall growth of the economy is facilitated by the presence of efficient capital and money markets, also the availability of Non-Financial and Financial Institutions contribute to the overall growth. Considering this it has gotten important to grasp the determinants of the benefit of business Banks in Ghana. In the monetary division, the financial business represents a more noteworthy part in the improvement of the economy. The business banking division subsequently is fundamental to the advancement of the economy. Failure of this sector will have adverse effect on the economy.

Background of the study

As a result of global and financial crises, there has been a great interest in coming out with macro-prudential indicators framework for accessing financial risk (Kanas, Vasiliou, & Erriotis 2012). The centre of the discussion for coming out with macro-prudential factors is the level of bank profitability. For this reason, a healthy and profitable banking sector has the advantage to overturn risks and positively have a great influence on the strength of the entire financial system (Athanosoglou, Brissimis, & Deli, 2008). The profitability level of Bank and its indicators are key elements of the stability of the financial system (Mörttinen, Poloni, Sandars, & Vesala, 2005).

High profits in banking sector always leads to financial stability, this enables customers to have high confidence in the financial sector and contribute greatly to the growth of the economy. In addition, profitability of banks ensures their survival in the industry. Profitability of banks also indicates that management had put proper mechanisms in place to manage cost and increase their revenue by sticking to their operational policies.

Investors and other clients assessed banks base on the level of profits made by the bank, this help them in the investment decisions they make. Banks that are able to increase their yearly profits tends to attract more investors and customers. This will help improve the reserves of the bank and continue to remain in business and withstand stiff competition.The banking industry however provides potential investment avenues for both growth investors and value investors.

There are various elements that improve productivity of banks. These factors are grouped into bank explicit elements, industry explicit components and macroeconomic factors when all is said in done terms. Bank explicit factors, for example, bank size, capital proportion, stores proportion, Liquidity proportion and Overhead cost administration, these speak to the inner determinants of bank benefit yet they are not thorough. Macroeconomic factors, for example, expansion, GDP and Market Capitalization likewise are a portion of the outside determinants. The determinants of bank benefit have been examined by numerous specialists in various nations. They have discovered various components influencing bank productivity. Gyamerah and Amoah (2015) look at the relationship that exists among gainfulness and a lot of bank-explicit qualities and macroeconomic factors on outside and neighborhood banks in Ghana somewhere in the range of 1999 and 2010. The revelations propose that cost administration has a reverse relationship with productivity, bank size and credit chance show a positive relationship with benefit. Douglas (2015) also inspected the elements that affected the benefit of local and remote banks in Ghana from 2003 to 2013. They finished up from their investigations that bank explicit factors are huge in clarifying the benefit of banks however outer factors are definitely not. This study was similar to the one conducted by Gyamerah and Amoah (2015)

An examination by Boateng (2015) analyzed the effect of bank-explicit and macroeconomic factors on the benefit of recorded business puts money on the Ghana stock trade for the period

2004 to 2013. The examination was directed on the premise that the western countries are said to have dependable and stable budgetary establishments, however banks in created countries, for example, Ghana can deal with their assets such that makes it suitable.

Krakah and Ameyaw (2010) likewise examined the determinants of bank's benefit in Ghana. They utilized relapse model in breaking down their discoveries. Their outcomes uncovered that banks execution has been incredibly unstable with banks making negative benefits for the period utilized for the examination work. The examination additionally uncovered some significant key drivers of banks' productivity in Ghana. These drivers incorporate; non-premium pay, banks' capital quality, non-premium cost, absolute resources, yearly swelling and development of cash supply.Mason (1939) and Bain (1951) suggested that determination of an entity's profit is by the level of concentration of the market. In order for a business firm to continue to flourish in its operations, there must be a regular source of inflows to enable the business or entity grow and expand in the future, in addition to the level of inflows, the other factors (external) surroundings its environment must be critically understood and properly forecasted (Burns & Mitchell, 1946).

Duca and MacLaughlin (1990) were of the view that changes in bank profitability are widely traceable to changes in credit risk, this is because the greater exposure to credit risk is usually characterized with low firm profitability.

Sufian (2009) concluded that financial system has a major role to help in the movement of funds from depositors to those who needs them (borrowers). The more efficient a financial system is then more profits will be declared. Profitability of a system can be said to be an indicator of wellness of a financial system from this contention. This brings to bear the essence of undertaking a survey on the factors that determines the profitability of commercial Banks.

Sufian (2009) again retreated that there should be unity in the works of financial markets and banking systems to improve the flow of funds from depositors to borrowers. Categorization of financial institutions can be done in two forms, non-bank and bank financial institution, but the banking system has the majority number.

As indicated by a report by Green Climate Fund (GCF) in 2015 on the money related part review in Ghana shows that toward the finish of 2013, the Ghanaian monetary framework included 27 widespread banks (12 of which were Ghanaian and 15 outside possessed), 140 provincial and network banks and 57 non-banking budgetary establishments. The age of benefits by banks are fundamentally from net premium pay and non-premium pay. Net interest pay is the qualification between pay made by eagerness bearing assets and the cost of modifying liabilities. For banks, the advantage typically consolidates business and individual advances, contracts, improvement advances and hypothesis insurances. The liabilities involve essentially of customers' stores. Not at all like the examination by Gyamerah and Amoah (2015) and Douglas (2015), this investigation plans to evaluate the relationship that exist between the elements that decides the gainfulness of business banks that are recorded on the Ghana Stock Exchange without considering other worldwide banks and those that are not recorded on the Ghana Stock Exchange. The motivation for this study was from the Ghanaian researchers sited above, especially the reports by Amoah and Gyamerah (2015) and Douglas (2015). This study was motivated to research into the factors that influence the profitability of only Ghanaian banks listed on the Ghana Stock Exchange.

Statement of Problem

With the recent minimum capital requirement set by Bank of Ghana in 2018, which most banks could not meet but have to merge with other banks before meeting the minimum requirement, GN Bank being downgraded from banking status to Savings and loans company. The inability of some of the banks to meet this requirement indicates that there is

a profitability problems being faced by these banks. This has given a great concern to how commercial banks plan activities by predicting their future performances. To effectively address this issue, banks must identify and forestall the significant variables that are crucial in its profit determination.

The earlier studies sited above had some gaps, the study by Boateng (2015), failed to answer the question of whether Ghanaian banks were stable enough to make them more profitable, because it was on this basis that their study was conducted. This study how ever seeks to bring to bear the stability of commercial banks that makes them more profitable.

Gyamerah and Amoah (2015) and Douglas (2015), failed to explain whether the banks used for the study included listed banks, in light of this, this study considered only listed banks on the Ghana stock exchange.

Another gap which the study by Krakah and Ameyaw (2010), failed to address was that, the study used only two banks, one listed and the other not listed and failed to conclude whether the results could be generalized for all banks. This study used only listed commercial banks on the Ghana Stock Exchange and address how the results could reflect on other banks that were not included in the study.

Purpose of the Study

The purpose of the study is to examine the determinants of profitability on the overall Profit (performance) of listed commercial banks in Ghana.

Objectives of the study

i. To examine the internal determinants of profitability of commercial banks in Ghana.

ii. To examine the external determinants of profitability of commercial banks in Ghana.

Research question

i. What are the internal and external determinants of profitability of commercial banks in Ghana?

Significance of the study

From a practical perspective, the result of the current study could be of immense help to policy makers, bank managers, financial investors, and the various regulators like the Central bank of Ghana. The bank managers, could rely on the findings of the study to put in place appropriate measures to increase the profitability of commercial banks and ensure greater performance. Policy makers can also put in place appropriate measures or framework to safeguard the performance and survival of commercial banks. Additionally, the findings will add up to the pool of resources for future research.

Delimitation

The study will consist of all Commercial Banks listed on the Ghana Stock Exchange and will cover a period of 11 years from 2007 to 2017. Both Internal and External factors that affect the profitability of commercial banks in Ghana will be assessed.

The variables used include inflationary rate, Gross Domestic Product (GDP), supply of money, quality of asset, capital adequacy, liquidity, Firm size, and convergence of banking industry. It is foreseen that there are different impacts that may affect on the benefit of banks which are not part of this examination. This may incorporate however not confined to changes in innovation, tax assessment, corporate administration, improved and quality of service, political stability, changes in regulation. Structure Conduct Performance (SCP) concept and Asset Pricing theory as performance measurement were not covered by this study.

The examination will be directed by utilizing auxiliary information from distributed yearly reports from the business banks. This examination will utilize relapse and Pearson connection to decide the connection between the factors.

Limitations

This study like every other research is faced with the challenge of not capturing every variable that has the potential to influence the profitability of commercial banks in Ghana. Based on this reason not every question bordering people trying to find solutions to their problems could be addressed by this study. Moreover, the data collected and used may not show a true reflection of the actual situations on ground, this is because some banks do polished accounting and present it to general public.

Data collected from Bank of Ghana and Ghana statistical service showed a slight variation, the figures shows that there is no uniform way of keeping data for future use.

Organisation of the Study

The entire exposition is isolated into five parts. The principal section gives the presentation and foundation study. The subsequent section is a survey of writing which identifies with the determinants of productivity of business banks. The third section, which is inquire about techniques introduces the philosophy and the information utilized. Section four features result and conversations from the discoveries, the last part shows the summary, conclusion and recommendation.

CHAPTER TWO

LITERATURE REVIEW

Introduction

There are lots of literature review on the profitability of banks in many different countries, of which Ghana cannot be isolated.

This chapter examines the literature on determinants of banks profitability. There are a number of factors that can have effect on the profitability of commercial banks. It is obvious that this study cannot explore all these factors, but the research will bring to light factors which other researchers have not considered as determinants of bank profitability. Earlier researchers viewed determinants of profitability of commercial Banks from two wide angles. One, on specific countries and the other that compared determinants among two or more countries (Ramlall, 2009).

Theoretical Framework

Efficiency Theory

An alternative theory to the market power theory is the efficiency theory which was framed by Demsetz (1982). This theory assumes that good managerial skills will result in greater efficiency and increase the profitability of banks. In other words, the theory suggest that the efficiency of management does not only increase profitability of banks, but also enables them to increase their market share gains and enhance their concentration in the market. Another dimension of the theory states that connection relating to efficiency and size is a result of positive concentration of profitability. The theory assumes that positive alliance between concentration and profitability emanates from a low cost which is basically accomplished through efficient practices of production and enhanced process of management (Birhanu, 2012).

Economies of scale can also be achieved through favourable production plan; this assertion

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is supported by the efficiency theory. Thus, in an efficient manner operational efficiency can be achieved in the short run if there is the availability of economies of scale. In addition, the theory clarifies that to achieve a higher margin of profits, this must emanate from effectiveness which enables banks to increase their market share and improve on their performance financially. (Mirzaei, 2011). According to Fisseha (2015) the efficiency theory presumes organizations can increase their profitability by efficiently reducing cost and improving on their managerial strategies. Thus, efficient banks in the industry lead to an increase in their profitability and increase in their market share due to proper managerial skills. (Birhanu, 2012).

In an industry like the banking sector, the efficient theory says that large commercial banks are better off than smaller ones, this is because the large banks are able to bring their operational cost under control, this is achieved as a result of employing modern technology and putting up good and experienced managerial team, by so doing they are able to improve and increase the earnings made on their investments (Soana, 2011). Principally, the theory takes its basis on the evidence that banks are able to increase their profit and reduce their operating cost if they are able to manage all the external factors that they have comparative advantage over their competitors. This increases their profitability (Onuonga, 2014). The profitability of commercial banks are also influenced by internal efficiencies, this is also an assumption made by the efficiency theory. (Obamuyi, 2013).

The efficiency theory enables managers to increase their market share if they are able to put their managerial skills to their advantage, in relating this theory to the objectives, when the market share is increased the profitability of the firm or entity will also increase.Since managers have control over the internal factors they can take advantage of this theory and improve upon their performance.

Modern Portfolio Theory (MPT)

Present day Portfolio Theory (MPT) is a hypothesis progressed by Harry Markowitz (1952) in his investigation "Portfolio Selection," (is an endeavor speculation subject to the likelihood that risk reluctant money related authorities can create portfolios to progress or extend expected benefit based for a given level of market possibility, emphasizing that peril is an intrinsic bit of higher prize). It is one of the most noteworthy and enticing budgetary theories overseeing cash and adventure.

Also called "portfolio theory" or "portfolio the board speculation," MPT prescribes that it is possible to build up a "viable backwoods" of perfect portfolios, offering the most outrageous possible foreseen return for a given level of peril. It recommends that it isn't adequate to look at the typical danger and return of one explicit stock. By placing assets into more than one stock, a budgetary expert can get the prizes of upgrade, particularly a reduction in the peril of the portfolio. MPT assesses the benefits of expanding, in any case called not tying up of your advantages in a single spot.The relevance of this theory to the objectives of the study is that, it allows risk averse investors to undertake any investment of their own. Managers of Banks can take this theory into consideration when adjusting their interest rates which might have effect on the determinants of their profitability. This theory relates to the external determinants since managers do not have control over the external factors.

Drivers of commercial bank profitability

The components that decide the productivity of business banks can be separated into two, the ones that are inward and the others that are outside. Clarification of the interior determinants of the benefit of banks can be named the components or variables that are impacted by activity or strategies that are made by the board Staikouras and Wood (2003). Then again,

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outer variables that decides the benefit of business banks are related with the elements which are not affected by the executives choices and their arrangements.

There are a number of external factors which are separately involved in examining their performance to segregate their effect from the composition of the banks to clearly show the differences in the factors that determine the profitability of banks. Gremi (2013). There are different factors which affect the profitability of banks, one of these major factors is access to credit facilities. Commercial banks go in for loans from the Central Bank in order to lend to their customers at a rate which is above the lending rate given to them by the central Bank. There are different types of advances that Banks lend to their customers, thus commercial loan, salary loan, microfinance loan among others. Therefore, most of the income, banks make come from the interest on these loans. The loans granted by the banks has either short or long-term duration, depending on the purpose for which the facility is being taken for. Inflation as a factor can also have effect on the profitability of banks. The impact can be felt where customers have different taste and preference for different financial institutions and their services.

Inflation is one of the major factors which determines the profit of commercial banks through interest rates. Staikouras et al (2003). For effective and efficient operation of credit markets, commercial banks can alter interest rates (nominal) when there is the need for them to do so, but there are restrictions which makes this alteration very cumbersome. Boyd and Champ (2006). Anticipated and unanticipated inflation can have effect on the profitability of commercial banks. There is rapid growth in the income of commercial banks than their operating cost, where the inflation is predicted (anticipated) (Rao, & Lakew 2012).

The profitability of commercial banks can also be influenced by Capital adequacy, where a bank has enough capital to lend to its customers at a rate higher than what was given to them by the Central banks, they can always increase their profit margin and thereby minimize their

operation cost. In addition, a bank with good capital adequacy will borrow a small amount of money to augment what they already have. (Molyneux, 1993).

For every bank to succeed and withstand any stiff competition from their competitors, there is the need for the banks to educate their customers on how to save, thus depositing enough at the banks. This is because banks rely on these deposits to run their affairs. It is their responsibility to honour the call of their customers whenever they come for their deposits.

The rate of interest is also another determinant of bank profitability. There are different mediums by which banks raise capitals, these funds are invested in other profitable ventures in other to increase the profitability of the investing banks and meet customers demand on time whenever they want to withdraw a portion or their entire deposits. When there is a higher interest income over interest expense it leads to a higher spread which is a good indicator of an increase in profitability.

The concentration of markets is also another determinant of commercial banks profitability, this indicates that banks in high concentrated markets tend to enjoy monopoly and increase their profits. When there is such concentration other competitors cannot join the market to have a share of their profits thereby serving a barrier for them to enter the market, Kosmidou, Pasiouras and Tanna (2005) the ability to put measures in place in order to reduce the expenses of a bank can go a long way to affect its profitability. Loss on doubtful debts and bad debts can reduce the profitability of banks, where proper recovery of loans is instituted and effectively managed, it will increase the profitability of banks even though there will be the need to incur some expenses. However, if this is done well profit of the banks will increase.

Another determinant of gainfulness of banks is the nature of Assets banks currently possess. It is nearly said to be accepted that the productivity of banks has an immediate relationship with the nature of benefit the banks have as appeared on their announcement of monetary

position, along these lines if a bank has a whole lot of nothing credit quality it will unfavorably influence the profitability of the bank. Then again, a bank whose productivity level is low means that poor credit quality. Another factor that contributes to the determinants of banks profitability is sufficient liquidity. This refers to a situation whereby the banks have enough cash, in order to meet all obligations both current and future needs. The general public can have full confidence in the commercial banks only when they have enough liquidity to meet the needs of their customers. This calls for the commercial banks to have a robust system and mechanism to effectively manage their liabilities and assets. (Ahmad, & Haron, 2005). The market power theory enables business with large market shares enjoy monopoly thereby increasing their profitability.

Emperical Literature

The Effect of Internal Factors on Banks Profitability

Profitability of ten (10) banks in Pakistan were examined over the period 2004 to 2008 by Javaid, Anwar, Zaman, and Gaffor (2011), the investigation was outfitted towards the inward determinants of banks benefit. The conclusive outcomes from the examination uncovered that the inward determinants utilized greatly affected the productivity of business banks. In another examination directed by Gul, Irshad, and Zaman (2011), on the relationship between bank-explicit and full scale monetary highlights over the productivity of fifteen (15) banks between the period 2005-2009. The exact outcomes from their examination showed that inner and outside variables impacted the productivity of business banks.

Another investigation led in Sudan on the determinants of productivity by Eljelly (2013), the examination inferred that the benefit of business banks is impacted predominantly by their inner determinants. Different factors, for example, bank size, liquidity and cost had a

positive relationship with benefit of banks. The investigation additionally uncovered that, there is no generous impact on productivity of banks with regards to the Macroeconomic or outside variables.

Another assessment in Pakistan on eleven (11) business banks by Syeda (2012) on the inner and outside elements that decides the productivity of banks for a period covering 2005-2009.The investigation utilized the relapse model to dissect the outcome. The exact discoveries from the exploration shows that inner variables have impact on the productivity of the business banks than the outer components.

An examination in Tanzania on determinants of productivity of business banks by Fadhila (2013) for period more than 2006 to 2012, presumed that the inward determinants of benefit have incredible impact on the gainfulness of banks than the outside elements.

Contributing factors of High Interest Rates and Excessive Bank Charges

A study conducted by Georgievska, Kabashi, Manova-Trajkovska, Mitreska, and Vaskov (2011). Reveals that administrative costs which are high, come about as a result of the type of the business being undertaken, the type of business may involve charging of interest which can be high and charging of high interest will deter customers and will have adverse impact on the profitability of the banks. This is in conformity with the study conducted by Pastory et al, (2015) who reveals that the greater part of the profits made by banks is from charges and fees for the services they render to their customers and gains made on their assets that have been invested into other securities. This is a true indication that most of the costs incurred by the banks are channeled to their customers. Another factor which can result in high profits made by commercial banks is the presence of the gap that exist between the services rendered by the banks and the demand for such services, where the competition for

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the provision of such services is less the commercial banks tends to charge high rate of interest thereby increasing their profitability margin

It is clearly seen in the Eastern part of Africa, in this part of the continent most of the market shares are owned by government (Ongore 2013).

When there is takeover of one bank by another this can cause the bank taking over to review certain charges to make up for any liability they have taken over, this will force customers to access services from the bank at high prices (Rose & Hudgins, 2005).

Most researchers have used Return on Asset (ROA) and the Return on Equity (ROE) to measure the profitability of business entities. ROA shows the returns generated from the assets employed in business. In other words, ROA is the income earned on each unit of asset used in the business and it is usually expressed in percentages. There is an argument by Rose et al, (2005), that ROA is an important measure of profitability in most banking literature.

Another substitute for measuring profitability is the Return on Equity (ROE). This is calculated by dividing the net income by equity. This is used to assess the income each shareholder earns on the capital employed in their business. In a situation where banks have financial leverage which are high they are usually connected with high risk, though the banks might generate high ROE. A challenge that comes with the use of ROE is that, it is affected by regulation.

In other words, Return on Equity (ROE) is basically used in connection with Return on Asset (ROA).

In this study the evaluation of banks profitability will be based on Return on Assets (ROA) and Return on Equity (ROE). Other researchers have used Return on Average Asset (ROAA) and Return on Average Equity (ROAE) as a means of measurement for the profitability of banks. However, this study will use Return on Asset (ROA) and Return on

Equity (ROE) in the regression model to assess the profitability of commercial banks.

Internal Determinants

The internal determinants of profitability can be explained as the factors within the organization which are affected by the decisions taken by management and also the organizational policies and objectives. These factors can be the level of information Communication technology (ICT) used in the organization, the good managerial team (operational efficiency), motivation. There are other factors apart from what have been mentioned that can affect the determinants of bank profitability internally. Some earlier studies have used financial ratios as a substitute to assess the internal determinants of banks profitability. This study will touch on effects and associations of some variables used.

Quality of asset

The proportion of arrangement for terrible obligation to propels utilized in the examination just fills in as a substitute for resource quality. This measure shows changes in the monetary quality of the bank advance portfolio and nature of credit. As per Heffernan (1996), the hazard that a bank's advance isn't recouped when clients neglect to settle every one of their obligations as per the provisions of the office allowed is named as credit chance.

Where the arrangement for awful obligation to propels proportion is high, there is a reasonable sign that credit hazard will be high and this will expand the advances that have not been paid which will bring about loss of enthusiasm on those unpaid advances. Be that as it may, as indicated by Kosmidou (2008), resource quality which is awful can have negative impact on bank productivity.

Adequacy of Capital

This proportion is otherwise called Capital to Risk proportion, this is the proportion of a bank's cash-flow to its hazard, at the end of the day the proportion of Equity to add up to Asset is

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utilized as a methods for estimating Capital Adequacy of banks. This mirrors the level of an element's complete resources that is being utilized to back the value part of a substance's capital. Where the Equity to Asset proportion is high, it isn't prudent to go in for financing from outer source which will diminish the measure important to pay on credits and this will help increment the gainfulness of the banks. It is said that, banks that have been appropriately promoted have a higher possibility of making due in the business they work. (Kosmidou, 2008).

Liquidity

Liquidity is the capacity of banks to meet all duties when they fall due without creating any adjustments in the benefit's cost. The significant movement of banks is giving out advances from the stores they have taken from their clients. Right now proportion of bank's advances to client stores is utilized an alternative for liquidity.

Liquidity is a significant territory banks investigate, this is in such a case that there is no legitimate liquidity the board, banks will run into bankrupt lastly breakdown. Where resources are kept in an increasingly fluid nature, this will diminish pay as fluid resource are connected with low paces of return. For sure, Molyneux and Thornton (1992), and Guru, Staunton and Balashanmugam (1999) finished up from their discoveries that, there is a negative connection between the degree of liquidity and profit.

Size

In other studies, which have focused on the determinants of the profitability of banks, the total asset has been used to measure the size of banks. The cost of putting together information will drastically reduce where there is Economies of scale. (Boyd, & Runkle, 1993) the effect of positive bank size is always linked with profitability.

Akhavein, Berger and Humphrey, (1997) finished up from their examination that there is an essentially positive connection between the size of banks and benefit. Short (1979) contends

that the size of bank is identified with the sufficiency of capital, this is on the grounds that keeps money with enormous size can gain admittance to raise capital that doesn't accompany tremendous cost and along these lines increment their overall revenue since they will offer it to their clients at a higher rate. These journalists, Haslem (1968), Molyneux and Wilson (2004) have all related the size of bank to capital proportions. These outcomes uncovered that as the size of bank expands then benefit additionally increments.

External Determinants

Factors outside the internal operations can always have influence on the profits of that entity. It is therefore expedient for all entities to study their external environment and take advantage of the positive ones that can improve their operations and profit and also strategize towards the factors which they don't have advantage over into their favour. This is because this factor can have great influence on performance and operations of the entities. The external determinants are the factors which managers of banks do not have control over. Some of the external factors may include but not limited to legal, political, technological, and social settings in which banks does their core business. This research seeks to analyse the following external factors; concentration of banks in the industry, the supply of money, Gross Domestic Product (GDP) and inflation.

Bank concentration

A substitute to the convergence of bank is the structure the market structure. An investigation by Short (1979) which utilized the Structure Conduct Performance (SCP) theory, demonstrated that where there is high convergence of business sectors acquire benefits from their restraining infrastructure. Berger (1995) was of the view that the connection between bank fixation and execution depend on the variables which are steady. An examination led on business banks in Tunisia by Naceur (2003), uncovered that there was huge negative connection among fixation and the exhibition of banks.

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Money supply

The measure of cash discharged in an economy is delegated the stock of cash. The inventory of cash into the economy relies upon the approaches did by the Central Bank. The utilization of open market activity by the national Bank can influence the inventory of cash into the economy.

In agreement to the amount hypothesis of cash, where there are changes in the cash supply will prompt changes in the ostensible Gross Domestic Product and the degree of costs. The investigation of Mamatzakis and Remoundos (2003) advocates that the stockpile of cash utilized in the examination to quantify the size of market had impact on the bank gainfulness.

Gross Domestic Product

Total national output (GDP) is one of the fundamental markers used to survey the development of an economy. Gross domestic product is generally contrasted and the earlier year's figures. There are two sorts of GDP which is utilized to gauge a nation's economy. These are Nonimal GDP which identifies with a nation's economy without a change in expansion. Genuine GDP is the place modifications have been made for swelling.

This examination will utilize the total national output as a proportion of macroeconomic conditions. As indicated by Demirguc-Kunt and their investigation uncovered that, there is a positive connection between economic development and bank profit.

Inflation

The anticipated or unanticipated inflation can have influence on the bank profitability. (Perry, 1992). In a circumstance where appropriate and correct expectation are made corresponding to swelling, troughs of banks can make more benefits by altering their loan costs upward.

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Where administrators can't do this expectation, it will have unfavorable impact on the bank's benefit by decreasing it because of the impact of the pace of swelling at that period.

Related Literature in Ghana

The operation of Ghana's banking system is under the banking laws of Ghana. Where Bank of Ghana does the regulation of all the activities of banks in the country, it is also the mother of all banks by acting as the lender of last resort.

There are many literatures on determinants of profitability in Ghana, this study will highlight on a few of them in relation to their findings or results.

Conventionally, in Ghana, the banking sector was grouped into merchant, profitable and development banks. However, the universal banking system was adopted and the barriers established by this division or groupings were eliminated and encouraged competition without any limitations. Banks therefore try as much as possible to differentiate their products and branding in order to get a large share of the market in terms of customers.

According to a research by Boateng (2015) which examined the impact of bank-specific and macroeconomic factors on the profitability of listed commercial banks on the Ghana stock exchange for the period 2004 to 2013. The researcher used the panel regression with the aid of STATA to analyse the variables they used. Some of the variables used were gross domestic product, inflation, capital ratio, expenses among others. The study was conducted on the basis that the western nations are said to have reliable and stable financial institutions, however, in the less developed nations financial institutions are able to manage their resources in a manner that they have become one of the viable sectors in their economies. Seven banks were used for their study, namely GCB Bank ltd, Eco bank Ghana Ltd, Standard Chartered Bank, Cal Bank, HFC Bank, SG Ghana ltd and UT Bank Ltd.

One of the findings of the study is that expenses, capital ratio and liquidity had strong influence on both measures of profitability. In other words, the results indicated that liquidity

and taxation had positive relationship with profitability, again loans and taxation influenced Return on Asset and deposits affecting Return on Equity (ROE). The study also indicated that the positive relationship between liquidity and taxation is due to the ability of the banks to transfer to their customers' taxes which will result in higher profits.

Another result from the study shows that GDP also had a negative implication on the profitability.

The resultants from the macroeconomic variables showed that none of them indicated a significant relationship with the banks' profitability.

In conclusion the results indicate that for management to increase profitability, they should concentrate on improving its specific factors as used in their study.

There is another literature by Krakah and Ameyaw (2010) on the determinants of bank's profitability in Ghana. The study by Krakah and Ameyaw (2010) used regression model in analysing their findings. They examine the drivers of bank's profitability in Ghana to assure themselves whether the assertions made by Flamini et al., 2009 is a true reflection in Ghana. Their outcomes uncovered that the banks execution has been enormously unstable with banks making negative benefits for the period utilized for the exploration work. The investigation additionally uncovered some significant key drivers of banks' gainfulness in Ghana. These drivers incorporate; non-premium pay, banks' capital quality, non-premium cost, absolute resources, yearly expansion and development of cash supply.

The investigation additionally drew out that the economy of Ghana and its terrible obligation arrangements didn't altogether have any impact on the banks productivity.

Per the discoveries of the investigation, it confirms the attestation that banks in the Sub-Sahara Africa make a lot of benefit than those in the created nations.

Another examination by Kutsienyo (2011) likewise analyzed the determinants productivity of banks in Ghana by gathering them into inside and outside components and focusing on that the inward factors are additionally the particular variables and the outer was separated into macroeconomic elements and budgetary structure factors. A board information was utilized and furthermore the summed up least square system was likewise utilized to assess fixed impact relapse model. The examination utilized twenty-six (26) business banks for the time of 10 years (2000-2009).

The discoveries from the examination uncovered that Return on Average Asset (ROA) model shows that capital sufficiency, bank size and liquidity positively affected the benefit of banks, while working costs and nature of advantage negatively affected the bank productivity. While the macroeconomic factors, for example, expansion and Gross Domestic Product (GDP) positively affected the banks gainfulness.

The discoveries additionally uncovered that, except for GDP, banking industry fixation and resource quality, the various determinants had consistency when Return on Average Equity (ROE) was utilized to quantify the productivity of the banks.

Another writing by Gyamerah and Amoah (2015), in contrast to the previous writing, this examination likewise took a gander at the connection between the determinants of bank benefit by including all banks both neighborhood and outside banks working in Ghana.The study showed that exposure to default risk will result in low profit of the banks. The study also indicated that the measurement of concentration had a positive impact on bank profitability.

In accordance with the expectations of the researchers, they found that banking development results in low profits. Their findings also propose for good collaboration between the Ghana

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stock market and the banking sector, thus the two institutions should try and complement each other. The reason for such collaboration is that banks are important medium for providing funding for business enterprise in Ghana.

Chapter Summary

This chapter discussed related literature on the determinants of profitability of commercial banks from Ghana's perspective and other countries. Two main theories, Efficiency and Modern Portfolio theories were found useful for this study, this is because one relates to the internal factors that help to determine the profitability of commercial banks and the other relates to the external factors. The internal factors were seen to be quality of asset, adequacy of capital, liquidity and size. The external factors were bank concentration, money supply, gross domestic product and inflation.

There were some gaps in the research of some Ghanaian writers,

Boateng (2015), failed to answer the question of whether Ghanaian banks were stable enough to make them more profitable, because it was on this basis that their study was conducted, Gyamerah and Amoah (2015) and Douglas (2015), failed to explain whether the banks used for the study included listed banks, another gap which the study by Krakah and Ameyaw (2010), failed to address was that, the study used only two banks, one listed and the other not listed and failed to conclude whether the results could be generalized for all banks. This study will build upon the gaps cited above.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter depicts the methodology used for the study. In other words, the chapter presents the econometric and statistical tools that were used by the researcher for the analysis of the data gathered. This chapter also takes into accounts the research design, population, sampling size and sampling technique, data sources and method of data collection, model, definition and measurement of variables.

Research Design

Research configuration is the orchestrating of assessment to target distinguishing the factors utilized for the examination and the connection between them. For the scientist to test the speculation or to find solutions for the exploration question expressed in the investigation, the elucidating research configuration was utilized. As it were, the investigation arrangement insinuates the general philosophy used to facilitate the different pieces of the examination in a sensible and reliable way, right now, the assessment issue will be reasonably comprehended. It is made out of the layout for the combination, estimation and how to separate data.Statistical Package for Social Sciences (SPSS) was used in analyzing the data.

Data Source

This examination used helper data which are basically yearly accounting data of the diverse individual banks and macroeconomic data got for the period 2007-2017. Helper data on bank budgetary was gotten from the Ghana Association of Bankers.

Information on the macroeconomic pointers were gotten from the Research Department of Bank of Ghana. Information on arrangement for terrible obligation, overheads (absolute), advances and complete resources yearly overhead cost were utilized as inside determinants of productivity. On the other hands data on factors such as consumer price index (inflation)

and supply of money were the macroeconomic variables used for the external determinants of commercial banks profitability. Data was also gathered from Ghana Statistical service on the consumer price index, the mundi website was also helpful for this study.

Ethical Consideration

The main ethical consideration employed by the researcher in conducting this study, is data confidentiality. This is discussed below.

The names of the banks will be omitted from the data collected from the Bank of Ghana. This is in fulfilment of confidentiality of data promised by the researcher. The results analyses, therefore, will not show pointers to bank names, rather, collective reporting will be encouraged.

Sampling Criteria

Commercial banks that existed and were listed between the periods of 2007 to 2017 were considered for the research. This gives a fair representation of all the listed banks on the Ghana Stock Exchange. The sampling criterion used was the purposive sampling.

Econometric Specification

A relapse model (board) was utilized in the examination of the outside and inside determinants of banks benefit. As indicated by Vong and Chan (2009), board information comprise of cross sectional and time arrangement information which gives it predominant chance of giving more data. A board model can help to perceive comparable assortment of highlights and simultaneously, calculating the heterogeneity that is existing among discrete units. A few information focuses are utilized in a board information model considered numerous utilitarian structures and turned out with their decision that models in direct structures can give results that are similarly acceptable as some other useful structures. Most writing on the productivity of banks have utilized the straight capacity structures for their

investigation. The board information utilized for this investigation will be dissected by utilizing a straight structure.

The consistent coefficient, fixed impact model or the arbitrary impact model can be utilized in the estimation of the board information in the wake of settling on which the correct type of capacity to be utilized. The fixed effects model is a genuine model wherein the model parameters are fixed or non-discretionary sums. This is as opposed to discretionary effects model and mixed models in which all or a bit of the model parameters are considered as sporadic variables. In various applications including econometrics and biostatistics a fixed effects model insinuates a backslide model in which the social occasion suggests are a subjective model from a masses. In an irregular impact model there is the supposition that there is the presence for a uniform mean an incentive at its captures and there is an appearance in the mistake term base on the varieties in the cross-sectional block estimations of each bank. As it were, information can be assembled and ran as an Ordinary Least Squares relapse. A direct detail which is standard is the place the factors watched are illustrative ones and the needy factors for bank I at time t and different factors which are in secret.

$$(Z_{it} = \beta_1 + \sum_{j=2}^{k} \beta_j X_{jit} + \sum_{P=1}^{S} Y_p Z_{pi} + \delta t + \varepsilon_{it})$$

The unit of observation is denoted by the alphabet *i* and *t* is for period of time that the variables are being observed. The differentiation between observed and unobserved explanatory variables are denoted by the alphabets j and p. A trend term has been included to permit a deviation of the intercept over a period of time. Where the rate persistent change of rate is seen to strong dummy variable will be used, one for each time period except the reference period (Dougherty, 2006).

An improved version of Ordinary Least Squares (OLS) is the fixed effects and random effects models. In the fixed effects model was used in this study to estimate the model. Base on the

research by (Baltagi 2001) using Hauman test, this study prefers fixed effects model to the random effect model. The Hausman test determines whether the evaluations of the coefficients are significantly different in the fixed effects and random effects.

Determinants and Variable Selection

The determinants of benefit are isolated into two principle gatherings, and these are the inward determinants and outside determinants. The inside determinants are the elements that are impacted by the choices and arrangements of Bank's administration and the outer determinants are the components which are not affected by the board choices yet rather the conditions in the economy and the business.

Performance measures: Dependent Variables

Disputes by Rose et al., (2005) and Golin (2001), this examination used the extent of Return on Assets (ROA) and Return on Equity (ROE), to measures the introduction of banks. Benefit for assets is the net advantage after obligation had been deducted parceled by hard and fast assets and this shows the benefits that has been made from the points of interest financed by the bank. Benefit for esteem is the extent of the net advantage after obligation to the typical hard and fast an incentive for the cash related year.

Internal Determinants of Profitability

There are various elements which can be utilized as inside determinants of bank benefit. These components incorporate however are not restricted to Expense-to-Income proportion, the proportion of Equity to Total Assets, the proportion of bank's advances to client stores, the proportion of arrangement for terrible obligation to propels, and the bank's all out resources which are substitutions for costs the board, capital sufficiency, liquidity, resource quality and size.

Justifying the Choice of Variables

The Expense-to-Income ratio is used to measures the running costs of banks, in accordance to the argument made by Kosmidou (2008), it appears that the relationship between profit and expenditure is clearly defined which shows that low expenses mean higher profits and huge expenses will result in low profits, but this assertion has not always been the same. This is due to the fact that where there is high expenditure indicates that there is greater volume of work at the banks which will results in higher profits. It is anticipated that a variable of this nature may have adverse influence on the banks operations, this is because well-organized banks are likely to operate at lower costs.

The Equity to Total Assets proportion is utilized in the relapse model as a substitute for capital sufficiency. Capital sufficiency proportion is a device utilized by banks to decide the ampleness of their capital considering hazard exposures. In other words, it is the ratio of the capital of bank visa-a-vis its risk weighted assets and current liabilities. According to Kosmidou (2008), it is anticipated that where there is a high equity to asset ratio, then there will be no need to seek for external source of funding and this will result in higher profitability of the bank. When banks are well capitalized there is slimmer chances for them to be bankrupt and thereby reducing the cost of funding their activities.

One of the most significant choice that the administrators of business banks make identifies with the administration of liquidity. To gauge the liquidity of banks the proportion of advance to stores are utilized. In the investigation led by Molyneux et al., (1992) expressed that among liquidity and benefit there is a negative relationship. In other research directed by, Bourke (1989), presumed that there is a critical positive relationship among's liquidity and bank productivity. The proportion of awful obligation (arrangement) to progresses shows the amount of the portfolio (complete) has been accommodated yet not charged against the pay of the bank for the period under audit which will be utilized to get to the advantage nature of

banks. The size of Bank utilized in the model apparently is an essential determinant of the presentation of a bank.

External Determinants

The earth where banks works have an effect on them particularly the outside condition. Hence, a nation's financial condition, political conditions, the piece of its and strategies and legitimate issues identifying with the activity of business can have effect on the productivity of banks. This examination, considers two arrangements of outer determinants, these are the markers of budgetary structure and macroeconomic variables.

The variable (CKB) is utilized in the relapse model is to gauge the convergence of the financial business. The estimation of (CKB) is the complete resources held by the example size partitioned by the all out resources of the all out populace utilized. It is additionally certain that banks that ended up in concentrated markets makes enough benefit by method for imposing business model.

The variable (NLMS) is brought into the backslide condition to find a good pace of money close to the completion of each period. (NLMS) is the typical log of M2 money supply. The M2 money supply is included cash in the economy, private premium stores in neighborhood money with banks and semi monetary stores. In the composition of Mamatzakis et al., (2003), they used the reserve of money as an extent of the size of market and found that it has uncommon immense impact on the efficiency of banks. It also revealed that, effect of money supply on bank execution depends upon the centralization of the business. Their examination assumed that the stock of money and the introduction of banks have negative relationship, this happens where there is high assembly of banking industry.

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Therefore

Therefore, the connection between the stock of cash and the gainfulness of bank is unclassified.

Total national output (GDP) is one of the for the most part utilized macroeconomic pointers, as it is utilized to quantify the all out financial action in an economy. There is a normal positive connection between banks execution and this variable dependent on the examination made by Bikker (2002).

Expanding as a variable is used as a substitute for rate change in absolute worth levels. Staikouras et al., (2003) reason that there may be quick or underhanded effect achieved by extension on banks profitability. The effect of expanding on banks advantage depends upon whether the extension is imagined or unexpected. Where expansion is envisioned, the paces of loan fees are subsequently balanced which realizes enough incomes. Then again, where expansion is unexpected, the banks loan fees are balanced however will be at a more slow pace.

Empirical model

The empirical model used for this study is stated below:

$$ROA_{it} = \mu\alpha_i + \beta_1 ETI_{1it} + \beta_2 ETA_{2it} + \beta_3 ATD_{3it} + \beta_4 PTA_{4it} + \beta_5 NLA_{5it} +$$
$$\beta'_1 GDP_{1t} + \beta'_2 INF_{2t} + \beta'_3 NLMS_{3t} + \beta'_4 CBK_{4t}$$

$$ROE_{it} = \mu\alpha_i + \beta_1 ETI_{1it} + \beta_2 ETA_{2it} + \beta_3 ATD_{3it} + \beta_4 PTA_{4it} + \beta_5 NLA_{5it} +$$
$$\beta'_1 GDP_{1t} + \beta'_2 INF_{2t} + \beta'_3 NLMS_{3t} + \beta'_4 CBK_{4t}$$

Definition of variable used

ROA_{it} Return on Asset

ROE_{it} Return on Equity

ETI_{1it} Expenses to Income for Bank *i* at time *t*

ETA_{2it} Equity to Total Asset for Bank *i* at time *t*

ATD$_{3it}$ Advance to Debt for Bank i at time t

PTA$_{4it}$ Provision for Bad Debt to Advances for Bank i at time t

NLA$_{5it}$ Natural Logarithm of Asset

GDP$_{1t}$ Gross Domestic Product for time t

INF$_{2t}$ Inflationary Rate for time t

NLMS$_{3t}$ Natural Log of Money supply at time t

CBK$_{4t}$ Bank concentration for time t

Chapter Summary

This chapter presented the methodology for the study by giving the source of data, the population and sample size used, the econometric model employed for the study. In addition, ethical issues were consider. The performance measure for profitability as used in the model was ROA and ROE.

The external and internal variables used for the study were also defined, finally the study was limited in relation to the number of banks used because the study considered only listed banks on the Ghana Stock Exchange. This is because access to their financial data is easily and readily available.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter discusses the results and findings of the study. Tables were used in the presentation of the results to show the strength and direction of the relationship that exist between the dependent and the independent variables.

The characteristics of the sample size used for the study is that it gives each bank equal chance of being included in the study. Another characteristic is that all the banks operate in the same industry and are regulated by the same policies and guidelines, this brings uniformity in the preparation and presentation of their financial statements.

Table 1: Descriptive Statistics of Variables (ROA & ROE) Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	132	.03	.08	.0479	.01568
ATD	132	.54	34.04	6.8888	8.53175
CBK	132	.09	2.00	.8034	.65316
ETA	132	.01	.15	.0577	.03955
ETI	132	.16	4.00	1.5720	1.32006
GDP	132	3.70	28.00	15.5785	6.06175
INF	132	6.34	20.74	13.5439	3.88281
PTA	132	.01	.80	.2037	.26960
NLA	132	19.26	24.14	21.5949	1.46473
NLMS	132	8.12	10.81	9.5413	.79279
Valid N (listwise)	132				

Source: Field survey, Boamah (2019)

Table 1 depicts dependent variables ROA and ROE with the other variables being independent. The table also shows the sample size used, the mean, standard deviation, least

and greatest factual estimations of the determinants utilized for the investigation covering eleven-year time frame (2007-2017).

This tables shows the outline of expressive insights of the factors in the relapse model. These measurements were caught to give an outline of the information utilized in the model. The primary graphic measures are the mean, standard deviation, the base and the most extreme estimations of the factors over the period viable.

From the table Return on Asset (ROA) which speak to the benefit of business banks had the most minimal mean of 0.0479 and a standard deviation of 0.1568, Another agent of gainfulness, which is Return on Equity (ROE) additionally had a mean estimation of 0.3698 and a standard deviation of 0.3434, Natural Log of Asset (LNA) had the most noteworthy mean estimation of 21.5949 and a standard deviation of 1.4647. Then again, Expense to Income (ETI) had a mean estimation of 1.5720 and a standard deviation of 1.3201, Advance to Debt (ATD) additionally had a mean of 6.8889 and a standard deviation of 8.5318, Provision for Bad obligation to Advances (PTA) had a mean of 0.2037 and a deviation of 0.2696. The centralization of banks (CBK) had a mean of 0.8034 with standard deviation of 0.6532, Inflation (INF) for eleven-year time frame likewise had a mean of 13.5439 and a standard deviation of 3.8828, Gross Domestic Product (GDP) had a mean of 15.5785 with a standard deviation of 6.0618, at long last Natural Log of Money Supply (NLMS) had a mean estimation of 9.5413 and a standard deviation of 0.7928.

Even though Natural Log of Asset had the highest mean of 21.59, it is also good to have a lessor standard deviation, in table 1 Return on Asset had the lowest standard deviation of 0.1568.

Pearson Correlation Matrix

The level of connection between's factors is surveyed by the coefficient of the relationship. The negative sign shows a backwards relationship, a positive sign then again predicts an immediate relationship and the degree of the relationship depends on the outright estimation of the coefficient. Contingent upon the extent, one can decide if there is multicollinearity or not. Multicollinearity exist when a few or all the logical factors are connected exceptionally, making it hard to anticipate which of the factors is impacting the needy variable.

From the connection network in Appendix "A" show the connection between Return on Asset (ROA), Return on Equity (ROE) and different factors was researched by utilizing the Pearson relationship coefficient. There were extremely powerless, feeble and Large however positive and negative connection between's the reliant factors (ROA and ROE) and the autonomous factors.

There is appositive relationship among's ROA and the all the regressors except for Expenses to Income, Bank focus and Expenses to Asset which has a negative connection with ROA.

ATD, GDP, PTA, NLA and NLMS had strong and positive correlation. (r =0.926, n =132 p < 0.05, r =0.935, n =132 p < 0.05, r =0.714, n =132 p < 0.05 r =0.923, n =132 p < 0.05, r = 0.899, n = 132, p < 0.05 respectively).

CKB, ETA and ETI had strong but negative correlation. (r = -0.844, n =132 p < 0.05, r = -0.762, n =132 p < 0.05, r = -0.803, n =132 P < 0.05 respectively).

INF on the other hand had a very weak but positive correlation, (r= 0.143, n = 132, p > 0.05) The results indicate that ROA has inverse relationship with the variables that have negative correlation, this means that as ROA increases the negative variables will be reducing, whereas ROA increases the variables with positive correlation also increases, in addition the magnitude of the variables ranges from 0.143 and 0.926.

There is a positive correlation between ROE and the all the regressors with the exception of Expenses to Income, Bank concentration and Expenses to Asset which has a negative correlation with ROE.

ATD, GDP, PTA, NLA and NLMS had strong and positive correlation. (r =0.989, n =132 p < 0.05, r =0.906, n =132 p < 0.05, r =0.710, n =132 p < 0.05 r =0.864, n =132 p < 0.05, r = 0.828, n = 132, p < 0.05 respectively).

CKB, ETA and ETI had strong but negative correlation. (r = -0.724, n =132 p < 0.05, r = -0.688, n =132 p < 0.05, r = -0.687, n =132 P < 0.05 respectively).

INF on the other hand had a very weak but positive correlation, (r= 0.199, n = 132, p > 0.05) The results indicate that ROE has inverse relationship with the variables that have negative correlation, this means that as ROE increases the negative variables will be reducing, whereas ROE increases the variables with positive correlation also increases, in addition the magnitude of the variables ranges from 0.199 and 0.989.

From table 4.2 and 4.3 It could clearly be seen that there is multicollinearity among the variables, this is because the VIF values are greater than 10, which indicates multicollinearity, with the exception of INF and PTA which have VIF values less than 10, indicating that there is no multicollinearity. This relates to both ROA and ROE.

Regression Results on the Determinants of Profitability of Banks

Random Effects

The rationale behind irregular impacts model is that, not normal for the fixed impacts model, the distinction across businesses is ventured to be arbitrary and uncorrelated with the free factors remembered for the model. In this way, if there are varieties across ventures which affect the needy variable, at that point the arbitrary impacts is inactive to be utilized. Irregular Effect presumes that the business' mistake term isn't connected with the free factors which gives space for time-invariant factors to be utilized as illustrative factors.

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The Hausman test was performed to pick the propriety of the model to be gotten, the invalid hypothesis is that the sporadic impact model is liked and the elective imparts that the fixed impacts is adored. From the Hausman test in table 4.4 and 4.5 the p regard is under 0.05. The decision standard is that expel the invalid theory for the other alternative if the p regard is under 0.05. For both ROA and ROE, we disregard to reject the invalid hypothesis and gather that the discretionary effect is reasonable.

An observation made in both table 4.4 and table 4.5 from appendix "A" was that, estimated cross-section random effect variance was zero, the meaning of this warning as indicated in the results from the tables means that the General Least Square Estimates are equal to the Ordinary Least Square estimate.

Table 2: Regression Model of Relationship between ROA and

Independent Variables
 Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-.371	.071		-5.254	.000		
ATD	.000	.000	.076	.789	.432	.028	35.408
CBK	-.007	.005	-.276	-1.413	.160	.007	146.685
ETA	.260	.086	.655	3.025	.003	.006	179.663
ETI	.004	.004	.342	.983	.328	.002	465.074
GDP	.000	.000	-.075	-.679	.499	.021	46.736
INF	.000	.000	-.086	-3.211	.002	.365	2.742
PTA	.001	.002	.009	.311	.756	.282	3.547
NLA	.026	.004	2.446	6.769	.000	.002	500.437
NLMS	-.016	.005	-.827	-3.511	.001	.005	212.509

Source: Field Survey, Boamah (2019)

a. **Dependent Variable: ROA**

ROA = -0.371 + 0.00ATD -0.007CBK + 0.260ETA +0.004ETI + 0.00GDP + 0.00INF +

0.01PTA + 0.026NLA – 0.016NLMS

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From the table the regression coefficients of concentration of banks is negative and at the same time insignificant since its p-value of 0.160 > 0.05, Advance to Debt, Expense to Income, Gross Domestic Product and Prov. For Bad Debt to Advances had a positive relationship insignificant since their sig. values are greater than 0.05.

Table 3: Regression Model of Relationship between ROE and   Independent Variables

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-2.653	.361		-7.348	.000		
ATD	.031	.001	.761	33.899	.000	.028	35.408
CBK	-.174	.024	-.330	-7.227	.000	.007	146.685
ETA	2.224	.439	.256	5.069	.000	.006	179.663
ETI	.076	.021	.294	3.616	.000	.002	465.074
GDP	-.002	.001	-.042	-1.643	.103	.021	46.736
INF	-.002	.001	-.022	-3.591	.000	.365	2.742
PTA	.031	.009	.025	3.474	.001	.282	3.547
NLA	.229	.020	.979	11.601	.000	.002	500.437
NLMS	-.230	.024	-.531	-9.659	.000	.005	212.509

 a. Dependent Variable: ROE
Source: Field Survey, Boamah (2019)

ROE = -2.563 + 0.031ATD -0.174CBK + 2.224ETA + 0.076ETI - 0.002GDP -0.002INF + 0.031PTA + 0.229NLA – 0.230NLMS

From the table it is clear that all the predictors are significant with the exception of GDP which is insignificant, even though some have negative relationship with ROE where as others too have positive relationship. Inflation, Gross Domestic Product Natural log of money supply and banks concentration had negative relationship with ROE.

Interpretation of findings (ROA)

ROA portrays how effectively a bank is dealing with its resources for produce pay. ROA is fundamentally determined in rate terms and it demonstrates the salary made on a unit of advantage utilized in the business. From the relapse results, few out of every odd variable is factually huge.

The proportion of Equity to Total Asset (ETA) had a positive and huge relationship with the exhibition of banks (ROA) in this way it adds to the assurance of the benefit of banks. Advances to Debt (ATD) was used as a substitute for liquidity in the model. The result shows that the liquidity variable had insignificant yet positive effect on the profitability of business banks. This suggests high figures for this variable will show higher profitability. The result is in any case relating to the last work of Bourke (1989) concluded in their assessments that liquidity had a determinedly association with advantage.

The variable, Provision for terrible obligation to Advances (PTA) was acquainted in model with measure the nature of advantage. The outcome demonstrates that nature of benefit had positive yet irrelevant relationship with bank gainfulness, this suggests the higher the nature of advantage of banks the higher the productivity. This outcome is in accordance with that of Akhavein (1997) who states that if the nature of advantage is poor it can have negative impact on bank gainfulness. Cost to Income (ETI) was remembered for the model to cook for the

effect of working productivity on the benefit of banks (ROA). Working cost had a positive yet immaterial relationship with bank productivity according to the outcome from the relapse.

Per the results it indicates that there are some expenses which can increase profitability, such expenses can be robust advertisement which will enable them capture greater portion of the market share.

The regular log of hard and fast asset (NLA) was used as a substitute for size in the backslide model as showed by the examinations of Boyd et al., (1993). The result shows that size is sure and quantifiably tremendous to bank profitability. This shows bank size invigorates economies of scale this will all in all consideration gigantic banks by making more advantages. The greater the bank size, the more useful. This result is dependable with the disclosures of Akhavein et al., (1997).

The result shows that extension (INF) is important and all the while influenced bank profitability. This shows administrators of banks can viably foresee development and take proactive measures. This result is consistent with most examinations

The Gross Domestic thing (GDP) variable was the backslide model to assess the effect of financial development on the advantage of banks. The result shows that GDP had a positive effect yet doesn't have any centrality on the advantage of banks.

The centralization of bank variable (CBK) was utilized an alternative for showcase structure. The outcome shows that there is a negative and immaterial connection between bank industry fixation and gainfulness. As more contenders go into the financial business the clients are separated among themselves along these lines lessening the benefit of the current banks. The outcome is anyway reliable with the consequences of Naceur (2003), who showed in his examination that the grouping of banks impacted productivity.

The regular logarithm of cash supply in the model is to look at the effect of cash supply on bank productivity. All in all terms it is foreseen that there should be a good impact on the benefit of banks at whatever point there is an expansion in the stockpile of cash into the economy. The impact of cash supply on the benefit of banks depends on the fixation level in the business or the serious idea of the business. The relapse results show that cash supply affected bank productivity.

Interpretation of findings (ROE)

The relapse results for the ROE model is additionally another methods for evaluating the benefit of banks. ROE (Return on Equity) gauges the pay earned on every unit of investors' capital. Except for GDP which is had negative and immaterial relationship with ROE different factors had both negative and positive relationship yet critical in deciding the gainfulness of banks, in contrast to the ROA, GDP had positive however inconsequential relationship, this infers in the two models utilized, GDP is statically irrelevant. CBK, INF and NLMS had a negative however positive relationship in deciding the productivity of banks. Liquidity, Adequacy of capital, Operating Efficiency, Quality of Asset and Total Asset had a positive and critical relationship with Return on Equity.

The outcome is anyway reliable with the investigation led by Boateng (2015), that capital proportion, costs and liquidity had solid impact on the two proportions of benefit.

Chapter Summary

Tables were utilized to portray the outcomes. There was a positive relationship between's Return on Asset (ROA) and all the regressors except for Expense to Income, Bank

inflation then again had an exceptionally feeble however positive connection with ROA and

ROE. For both ROA and ROE, we neglect to dismiss the invalid theory and presume that the

irregular under the hausman test is proper.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

Introduction

This Section exhibits the summary, conclusions and recommendations dependent on the outcomes and discoveries. The synopsis exhibits a review of the investigation. The extrapolation dependent on the exact examination is remembered for the end while the suggestions made depend on the conclusion from the study.

Summary

The main purpose behind the examination is to look at the impact of determinants of profitability on the general profit (performance) of recorded business banks in Ghana. Comparable to explore plan, the examination received the board way to deal with achieve the goals of the investigation. This investigation utilized auxiliary information assembled from the yearly bookkeeping records of the different individual banks and macroeconomic information was gotten from the Ghana Association of Bankers and the Research Department of Bank of Ghana.

The Generalized Least Squares (GLS) procedure was utilized to assess the Econometric details, additionally relapse model (board) was utilized in the examination of the outer and inward determinants of banks productivity, the Pearson connection grid was likewise useful in the investigation of the information. At last, the particular targets were to analyze the impacts of determinants of benefit on execution of business banks and furthermore to recognize the relationship of the determinants of productivity on business banks profitability.

Results on the specific objectives have been summarized below:

i. There was a positive correlation between Return on Asset (ROA) and all the regressors with the exception of Expense to Income, Bank Concentration and Expenses to Asset which had a negative correlation with ROA.

ii. Liquidity, Gross Domestic Product, Quality of asset, Size of Bank and Supply of money had strong and positive correlation with ROA.

iii. Concentration of Banks, Capital Adequacy and Operating Efficiency had strong but negative correlation with both ROA and ROE

iv. Inflation on the other hand had a very weak but positive correlation with ROA and ROE

v. Liquidity, Gross Domestic Product, Quality of Asset, Size of Bank and Supply of money had strong and positive correlation with ROE

vi. For both ROA and ROE, we fail to reject the null hypothesis and conclude that the random under the hausman test is appropriate.

Conclusion

This section addresses the implications of the results in the findings

i. From the regression results for ROA the implications are that a percentage increase or decrease will result in an increase or decrease in profitability respectively. This shows that liquidity, capital adequacy, Gross Domestic Product, Inflation, Operating Efficiency, Quality of asset and size of bank have positive implications on ROA whereas bank concentration and money supply have negative implication.

ii. liquidity, capital adequacy, Operating Efficiency, Inflation, Quality of asset and size of bank have positive implications on ROE whereas bank concentration and money supply, Gross Domestic Product have negative implication on ROE

iii. The implication from the Pearson correlation is that all the regressors have a positive correlation with ROA with the exception of Operating efficiency and capital adequacy, the implication is that, it becomes difficult to predict which variable is influencing the dependent variable.

Recommendation

To address the above implications which were assessed from the key findings, the study recommends that authorities in charge of managing commercial banks should put in place proper loan recovery mechanisms such debt factoring, proper classification of loans since there is a positive implication of adequacy of capital and liquidity. In addition, the study recommends that mangers should put in place proper advertising mechanisms to increase their market share since the implication of bank concentration is negative but operating efficiency has positive implication, therefor spending on advertisement will help alleviate the implication of the market concentration.

The study also recommends that banks should have research department to do further research on this study area because this study showed that since there is multicollinearity among the independent variables it is difficult to predict which of them is having greater influence on the performance of banks profitability.

Even though inflation had both positive and negation relationship with ROA and ROE respectively, the study recommends that mangers of banks should proactive in carrying out their duties but should not reactive.

Being proactive helps the mangers to avoid situations which might have adverse impact on their profitability and eventually have greater advantage over their competitors.

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APPENDIX "A"

Table1.: Descriptive Statistics of Variables (ROA & ROE)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	132	0	0	.05	.016
ROE	132	0	1	.37	.343
ATD	132	1	34	6.89	8.532
CBK	132	0	2	.80	.653
ETA	132	0	0	.06	.040
ETI	132	0	4	1.57	1.320
GDP	132	4	28	15.58	6.062
INF	132	6	21	13.54	3.883
PTA	132	0	1	.20	.270
NLA	132	19	24	21.59	1.465
NLMS	132	8	11	9.54	.793
Valid N (listwise)	132				

Table 2 Regression Model of Relationship between ROA and Independent Variables

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Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-.371	.071		-5.254	.000		
ATD	.000	.000	.076	.789	.432	.028	35.408
CBK	-.007	.005	-.276	-1.413	.160	.007	146.685
ETA	.260	.086	.655	3.025	.003	.006	179.663
ETI	.004	.004	.342	.983	.328	.002	465.074
GDP	.000	.000	-.075	-.679	.499	.021	46.736
INF	.000	.000	-.086	-3.211	.002	.365	2.742
PTA	.001	.002	.009	.311	.756	.282	3.547
NLA	.026	.004	2.446	6.769	.000	.002	500.437
NLMS	-.016	.005	-.827	-3.511	.001	.005	212.509

b. Dependent Variable: ROA

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.984[a]	.968	.966	.003

a. Predictors: (Constant), NLMS, INF, PTA, ATD, CBK,

ETA, GDP, ETI, NLA

c. Dependent Variable: ROA

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.031	9	.003	412.162	.000[b]
	Residual	.001	122	.000		
	Total	.032	131			

a. Dependent Variable: ROA

b. Predictors: (Constant), NLMS, INF, PTA, ATD, CBK, ETA, GDP, ETI, NLA

Table 3 Regression Model of Relationship between ROE and   Independent Variables

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-2.653	.361		-7.348	.000		
ATD	.031	.001	.761	33.899	.000	.028	35.408
CBK	-.174	.024	-.330	-7.227	.000	.007	146.685
ETA	2.224	.439	.256	5.069	.000	.006	179.663
ETI	.076	.021	.294	3.616	.000	.002	465.074
GDP	-.002	.001	-.042	-1.643	.103	.021	46.736
INF	-.002	.001	-.022	-3.591	.000	.365	2.742
PTA	.031	.009	.025	3.474	.001	.282	3.547
NLA	.229	.020	.979	11.601	.000	.002	500.437
NLMS	-.230	.024	-.531	-9.659	.000	.005	212.509

a. Dependent Variable: ROE

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

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| 1 | .999ᵃ | .998 | .998 | .015 |

a. Predictors: (Constant), NLMS, INF, PTA, ATD, CBK, ETA, GDP, ETI, NLA

b. Dependent Variable: ROE

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.421	9	1.713	7801.362	.000ᵇ
	Residual	.027	122	.000		
	Total	15.448	131			

a. Dependent Variable: ROE

b. Predictors: (Constant), NLMS, INF, PTA, ATD, CBK, ETA, GDP, ETI, NLA

Table 4 Correlated Random Effects-Hausman Test (ROA)

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	9	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ATD	0.000139	0.000139	0.000000	0.9998
CBK	-0.006635	-0.006635	0.000000	0.9997
ETA	0.259706	0.259706	0.000000	0.9997
ETI	0.004067	0.004067	-0.000000	NA
GDP	-0.000194	-0.000194	0.000000	0.9998
INF	-0.000347	-0.000347	0.000000	0.9998
NLA	0.026187	0.026187	0.000000	0.9998
NLMS	-0.016351	-0.016351	-0.000000	NA
PTA	0.000550	0.000550	0.000000	0.9998

Cross-section random effects test equation:

Dependent Variable: ROA

Method: Panel Least Squares

Date: 11/04/19   Time: 13:32

Sample: 2007M01 2017M12

Periods included: 132

Cross-sections included: 132

Total panel (balanced) observations: 17424

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.371026	0.005933	-62.53504	0.0000
ATD	0.000139	1.48E-05	9.388789	0.0000
CBK	-0.006635	0.000395	-16.81318	0.0000
ETA	0.259706	0.007213	36.00681	0.0000
ETI	0.004067	0.000348	11.69797	0.0000
GDP	-0.000194	2.40E-05	-8.078083	0.0000
INF	-0.000347	9.08E-06	-38.21415	0.0000
NLA	0.026187	0.000325	80.56540	0.0000
NLMS	-0.016351	0.000391	-41.78365	0.0000
PTA	0.000550	0.000149	3.702694	0.0002

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.968158	Mean dependent var	0.047879
Adjusted R-squared	0.967900	S.D. dependent var	0.015620
S.E. of regression	0.002799	Akaike info criterion	-8.911320
Sum squared resid	0.135365	Schwarz criterion	-8.848478
Log likelihood	77776.42	Hannan-Quinn criter.	-8.890622
F-statistic	3753.543	Durbin-Watson stat	0.605378
Prob(F-statistic)	0.000000		

Table 5 Correlated Random Effects-Hausman Test (ROE)

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	9	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var (Diff.)	Prob.
ATD	0.030613	0.030613	0.000000	0.9996
CBK	-0.173518	-0.173518	0.000000	0.9996
ETA	2.224273	2.224273	0.000000	0.9996
ETI	0.076488	0.076488	-0.000000	NA
GDP	-0.002399	-0.002399	0.000000	0.9996
INF	-0.001983	-0.001983	0.000000	0.9996
NLA	0.229423	0.229423	0.000000	0.9996
NLMS	-0.229978	-0.229978	-0.000000	NA
PTA	0.031421	0.031421	0.000000	0.9996

Cross-section random effects test equation:

Dependent Variable: ROE

Method: Panel Least Squares

Date: 11/04/19   Time: 13:27

Sample: 2007M01 2017M12

Periods included: 132

Cross-sections included: 132

Total panel (balanced) observations: 17424

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.652524	0.030328	-87.46130	0.0000
ATD	0.030613	7.59E-05	403.4694	0.0000
CBK	-0.173518	0.002017	-86.01729	0.0000
ETA	2.224273	0.036869	60.32932	0.0000
ETI	0.076488	0.001777	43.03673	0.0000
GDP	-0.002399	0.000123	-19.55469	0.0000
INF	-0.001983	4.64E-05	-42.74078	0.0000
NLA	0.229423	0.001662	138.0813	0.0000
NLMS	-0.229978	0.002000	-114.9673	0.0000
PTA	0.031421	0.000760	41.34697	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.998265	Mean dependent var	0.369848
Adjusted R-squared	0.998251	S.D. dependent var	0.342104
S.E. of regression	0.014306	Akaike info criterion	-5.648267
Sum squared resid	3.536987	Schwarz criterion	-5.585426
Log likelihood	49348.70	Hannan-Quinn criter.	-5.627569
F-statistic	71046.74	Durbin-Watson stat	0.628031
Prob(F-statistic)	0.000000		

a. Dependent Variable: ROE
b. Predictors: (Constant), NLMS, INF, PTA, ATD, CBK, ETA, GDP, ETI, NLA

Table 6 Pearson Correlation Matrix

Correlations

		ROA	ROE	ATB	CBK	ETA	ETI	GDP	INF	PTA	NLA	NLMS
ROA	Pearson Correlation	1	.955**	.926**	-.844**	-.762**	-.803**	.935**	.143	.714**	.923**	.899**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.101	.000	.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132
ROE	Pearson Correlation	.955**	1	.989**	-.724**	-.668**	-.687**	.906**	.199*	.710**	.864**	.828**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.022	.000	.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132
ATB	Pearson Correlation	.926**	.989**	1	-.692**	-.688**	-.681**	.908**	.214*	.678**	.861**	.827**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.014	.000	.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132
CBK	Pearson Correlation	-.844**	-.724**	-.692**	1	.911**	.975**	-.884**	.047	-.517**	-.935**	-.950**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.590	.000	.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132
ETA	Pearson Correlation	-.762**	-.668**	-.688**	.911**	1	.977**	-.894**	-.075	-.494**	-.943**	-.956**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.390	.000	.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132
ETI	Pearson Correlation	-.803**	-.687**	-.681**	.975**	.977**	1	-.895**	.006	-.503**	-.951**	-.966**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.942	.000	.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132

GDP	Pearson Correlation	.935**	.906**	.908**	-.884**	-.894**	-.895**	1	.197*	.686**	.981**	.968**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.023	.000	.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132
INF	Pearson Correlation	.143	.199*	.214*	.047	-.075	.006	.197*	1	.430**	.158	.123
	Sig. (2-tailed)	.101	.022	.014	.590	.390	.942	.023		.000	.071	.159
	N	132	132	132	132	132	132	132	132	132	132	132
PTA	Pearson Correlation	.714**	.710**	.678**	-.517**	-.494**	-.503**	.686**	.430**	1	.659**	.627**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	132	132	132	132	132	132	132	132	132	132	132
NLA	Pearson Correlation	.923**	.864**	.861**	-.935**	-.943**	-.951**	.981**	.158	.659**	1	.995**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.071	.000		.000
	N	132	132	132	132	132	132	132	132	132	132	132
NLMS	Pearson Correlation	.899**	.828**	.827**	-.950**	-.956**	-.966**	.968**	.123	.627**	.995**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.159	.000	.000	
	N	132	132	132	132	132	132	132	132	132	132	132

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).