UNIVERSITY OF GHANA

DETERMINANTS OF UNIVERSAL BANK LENDING RATE IN GHANA

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DECLARATION

This work is my original work and has not been submitted for a degree in this or any other University. All references used in the work have been accorded acknowledged.

I bear sole responsibility for any shortcoming.

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the university.

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PROF. A. Q. Q. ABOAGYE **DATE**

(SUPERVISOR)

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PROF. K. A. OSEI **DATE**

(SUPERVISOR)

DEDICATION

This research work is dedicated to Almighty God and my beloved son, Adoah Beloved and the entire family for their moral support throughout the entire MPHIL program and especially during this research work.

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LIST OF ABBREVIATION

AGI	Association of Ghana Industry
BOG	Bank of Ghana
CPI	Consumer Price Index
GDP	Gross Domestic Product
MPC	Monetary Policy Committee
PCSE	Panel Corrected Standard Errors
UTAG	United Trade Association of Ghana
VIF	Variance Inflation Factor

ABSTRACT

The factors that determine the level of universal bank lending rate are important to policy makers, investors, the banking industry and the public at large. The market for loans from universal banks is competitive and rates on these loans have tendency to reduce the deposit rate and increase the cost of borrowing.

This study sought to investigate the determinants of lending rates in the universal banks in Ghana by answering the, what are the determinants of lending rates of Universal banks in Ghana.

In order to quantify the effect of the various factors on lending rate during the period, we use panel estimation techniques. The study found that factors that affect the determinants of the lending rate in Ghana are Policy rate, Exchange rate, Treasury bill rate, GDP, Inflation, Bank size and HHI. The study recommends participation of all the stakeholders on reviews of existing policies on stability and sound practices in the economy. Banks should also explore internally and industry driven strategies that will militate against some of the bank specific factors associated with higher lending rate in Ghana.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The factors that determine the level of universal bank lending rate have meant a lot of policy makers, banking industry as well as the public. The high cost of fund in Ghana which is measured by the lending rate is a major source of concern to policy makers, investor and the general public. This has also generated an argument within the media circle, general public and the banking industry. They wonder the reason why lending rates are high in Ghana. The higher lending rate has negative impact on the development of an economy as affecting the growth of the banking industry, by discouraging savings and investment. The higher lending rate affects business enterprises and encourages informality and increases the rate of acquiring funding. High cost of credit has negative impacts on small and big businesses, this result in a negative impact on the standard of living. Since acquiring capital through credit is expensive, this discourages the part of the people who want to enter into the world of business. A consequence of the high lending rate will result in an increased default rate (Kiptui 2014). The resulting scenario is that productivity will reduce, while business and employment levels remains stagnate (Ezirim 2005).

Lending practice in the world has existed since the period of the Industrial revolution and gives for commercial and production activities. This brought about the need for large capital investment which upturn in financial requirement of many captains and turn into banks for financial assistance.

The determinants of the lending rate vary according to the development and the growth of the economy. The macroeconomic condition has a significant shock on the performance of the banking industries by influencing the ability of the borrower to repay his credit l (Ezirim, 2005).

As a result of the unstable macroeconomic condition and poor economic growth, investors cannot predict the outcome of their return and this raises the lending rate as a result of increase in loan defaults by customers. Poor output price, for instance, reduces firm profitability while the value of assets for collateral is reduced and therefore, the worthiness of the borrowers is reduced.

Bawumia et al (2005) observed that the lower level of intermediation spread needed for financial liberation to result in the growth of economic and development has not been attained in developing economies due to the following:

I. Inadequate of changes in the structure and institution,

II. Condition of free entry and lack of competitive pricing

III. High reserve requirements which act as implicit financial tax.

The main purpose of statutory reserve requirements set by the Central Bank is to protect the depositor but this pool of resources allows for financial, fiscal deficit has resulted in financial tax obligation on universal banks. It develops a situation that can create high inflation and continues high lending rate. The cost of tax on these reserves universal banks hold to protect themselves against risk is relatively costlier than debt, this may result in high lending rate, because banks may pass these cost of tax to their customers.

Banks are traditionally in the business of collecting deposits from customers and making out loans to various economic agents such as individuals, businesses, organizations and

the government help them undertake viable investments and developmental initiatives that will help in the socioeconomic development of the country (Felicia, 2011). Banks lend for various maturity periods, ranging from short term, medium term, to the long term.

Lending represents one of the main services that universal banks perform. It is the means by which banks fulfill their financial intermediation function: that is to exchange funds between surplus and deficit economic units. In the process of carrying out this primary task, banks have found themselves performing a number of functions which include; the mobilization of savings and money transfer services.

In performing these roles, universal banks must consider the principles which guide their business, which are profitability, liquidity and solvency (Felicia, 2011 John (1998) posits that, the ability of universal banks to ensure its liquidity and survival, which contributing towards promoting the growth and development of the economy depends on their effective handling of lending operations. This requires that transaction on loans and advances are carried out with trust and confidence devoid of lending risks. This requires safe and sound banking, lending practices which involves taking into cognizance the regulatory requirements and internally entrenched factors affecting loans and advances.

Banks are observed to operate with high net interest margins. Mensah and Abor (2011) explain that the net interest margin is a measure of the social cost banking imposes on the economy. This is because when net interest margins are lower, social welfare increases through the effects of reduced lending rates, and access to credit facilities. As it may be observed, high interest rate do not inure to the socioeconomic welfare of the country.

According to Mensah and Abor (2011), the high lending rate tends to discourage savings due low returns on deposits and reduces demand for credit facilities due to the high cost of capital leading to a cut-down in investment in productive activities. In essence high interest rate lead to a reduction in economic growth.

Ribinson (2002) explains that the lending rates charged by banks are set such that they cover the risk premium, and the interest rate paid to depositors. Thus a rise in risk premium or interest rates on deposits could also cause a rise in the interest rate spread of banks. Aboagye et al (2008) commented that interest rate spread can be best defined as interest rate received minus the interest rate paid out to the depositor divided by total assets of the bank. Because this is the one that can best be estimated from bank income statement.

The interest spread can be measured in two ways and these are the ex-ante approach and ex-post approach. The ex-post approach interest spread is the difference between the average rate changes on loans and the average rate charged on a loan. This is calculated by dividing total interest income received on loan and advance while the average rate paid on deposit is calculated by dividing total deposits. Ex-ante approach interest rate spread is the difference between the actual contracted rate charges on loans and the rates paid on deposits. These are the rate that the public sees and are easily comparable across banks. Banks consider several factors in making a lending decision. They consider the level of current interest rates, the bank's liquidity position, and the credit risk posed by the applicant.

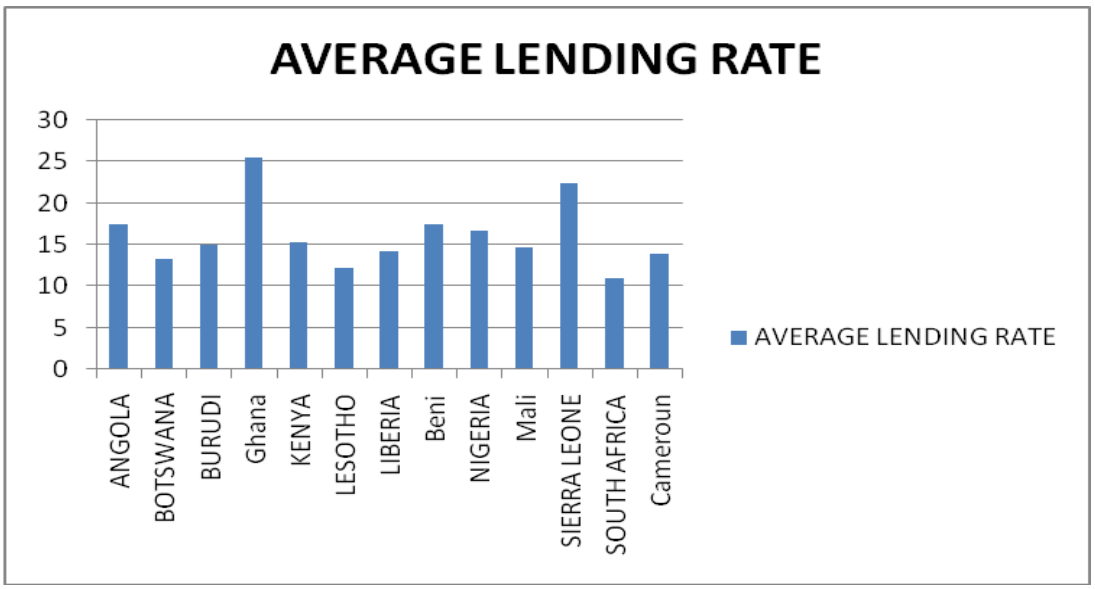
In a study, the professional Association of Bankers in Ghana indicates that the decision for banks to set their lending rate is influenced by the following factors: Central bank reserve requirement, earning on reserves, policy rate, projected turnover on a customer

account, duration of the deposit, treasuring bill rate and macroeconomic conditions like inflation and exchange rate, (Mensah, 2005).

1.2 Statement of Problem

Ghana is ranked as one of Sub-Saharan African countries with the highest interest rate (Mensah and Abor, 2011). In the works of Aboagye et al 2008 state that the spread between the lending rate and the deposit rate in Ghana is high as compared to some of the Saharan African countries. These have resulted in a higher lending rate in Ghana as can be seen in the graph below

Graph 1



Source . W D I and my own computation Average Lending Rate (2006 to 2013)

Amidu (2006), stated, lending rate continues to rise in the country, despite the pressure from the public and investors. The private sector through the Association of Ghana industries (AGI) often expresses investor dissatisfaction with the observed high interest rates, and its negative repercussions on the health of the economy The universal banks,

however are justifying the rationale for high lending rates, explaining that it is to enable them stay in business due to the high default rates, macroeconomic instability, and other structural challenges in the economy. They further argue that granting credit to customers in agriculture sector who are of high risk due to the nature of their business have contributed to this challenge in the nation.

The implication is that some of the factors or determinants of the lending rate of universal banks are subject to the whims and caprices of their directors and since the other determinants that influence lending by those banks are exogenous, they are not subject to their control and manipulation because they are normally formulated and imposed by regulatory authorities for implementation in any given economy.

The Bank of Ghana being the key regulator of the banking industry often receives wake up calls from the investing public and experts with regards to appropriate monetary policy tools and policy directives that will help to curb the perpetual rise in leading rate. Investors blame the Bank of Ghana for failing to revise its moral suasion policy, since as a result of that, the overall financial portfolio of the economy is not creating wealth and employment.

Bank of Ghana noted to have pointed out some constraints that impede the effectiveness of the tools of monetary policy. For example, where universal banks held large amounts of cash outside the banking system which makes the monetary policies meaningless.

The question many ask is that whether universal banks in Ghana are not taking advantage of trade liberalization to make extra profit from the borrowers, or are they charging high lending rate due to the economic variables that affect their operations.

1.3 Objective of the Study

The purpose of the study is the assessment of the determinants of lending rates of universal banks in Ghana. However, the study seeks to achieve the following specific objectives:

To evaluate the impact of banks specific characteristic that affects lending rate in Ghana

To find out the macroeconomic factors that affect bank lending rate in Ghana

To find out the banking industry specific characteristics that affect bank lending rate in Ghana

1.4. Hypothesis

To achieve the stated objectives the study is supported by the following hypothesis:

$H_{o.}$ There are no statistical significant relationship banks specific characteristic and universal bank lending rate in Ghana

H_o There is no statistically significant impact on banking industry factors on universal bank lending rates in Ghana

$H_{o.}$ Macroeconomic characteristic has no statistical relationship to universal banking lending rate.

1.5. Significance of the Study

First and foremost, the findings of the study will be of a great benefit to the academia by adding to a body of knowledge, regulatory authorities of universal banks and policy makers, which constitute the focus of the research. The result of the study will be of

immense benefit to future researchers who will make use of the findings to conduct further research in the area of the determinants of lending rate in the country.

The findings of the study will also contribute to the available store of knowledge given the fact that the materials of the research enhanced the already existing data in the area of the determinant of the lending rate. The findings of the study will expose the relevant factors affecting lending activities of the universal banks.

1.6. Chapter organization

This study would adopt a five (5) chapter organization format under the following headings: Introduction to the study, Literature and empirical reviews, Methodology, Data Analysis and Discussion and Conclusion and Recommendations.

The first chapter addresses the introductory issues, including the background to the study, Statement of the problem, Objective of the study, Hypothesis and the Significance of the study.

The second chapter reviews literature pertinent to the study and address both theoretical and empirical literature of similar works relevant to this research.

The third chapter discusses the methodological issues of the study. It will also review previous methods used in similar studies and model an appropriate equation for the purpose of the study as well as the sources of data analysis techniques to be discussed in this chapter.

The fourth chapters also analyses the data collected, presentation and discussion of the empirical results. This will be done in relation to the specific objectives of the study, ensuring that the right statistical parameters are employed in interpreting results.

The chapter five which is the last chapter concludes the study by recapitulating the main findings of the study; provide relevant suggestions and policy implication as well as policy recommendation will also be made.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAME WORK

2.1. Introduction

This chapter presents critical reviews concerning the study of determinants of Universal banks' lending rates in Ghana. This is done through discussing: Universal banks' lending rates, theories, empirical and factors that determine lending rates in banking industries.

2.2. Conceptual Classification of Interest Rate

The interest rate is the price paid on money borrowed within a given period of time (Anyanwu, 1999). Usually interest rates differ according to the term of maturity, and this gives rise to the term structure of interest rates. There are various classifications of interest rates. Interest rates can be classified as nominal or real. The nominal interest rate is inclusive of inflation. When the nominal interest rate is adjusted for inflation, it becomes real interest rate (Pandey, 1999). Nominal interest rates are higher than real interest rates.

2.3. Theoretical Framework

2.3.1. Loan Pricing Theory.

According to this theory, the interest rate set on loans could increase information asymmetry problems, particularly adverse selection and moral hazard (Stieglitz and Weiss, 1998). Overly high interest rates may create adverse selection challenges, in that high risk customer rather are willing to go for loans with high interest rates. Also, adversely selected customers are prone to develop moral hazard behaviour since they have a higher tendency to misapply the loan to risky projects different from those specified in the loan contract (Chodecai, 2004).

2.3.2. Theory of Multiple- Lending

The theory of multiple-lending is applied through loan syndication. Loan syndication is an arrangement where banks jointly raise finance to honour loan applications. It is usually beneficial where there the loan amount is higher than and exceeds the lending capacity of the banks considered separately. Loan syndication helps boost the lending capacity of banks (Orange & Smith 2000, Degrease et al 2004).

2.4 Theory of interest rate

2.4.1. Loan able funds theory

According to this theory, the supply and demand of loan able funds or excess bank reserves is the main determinant of interest rates. In situations where the demands for loan exceed the supply of loans, interest rates will rise in the favour of Banks, and to the disadvantage of borrowers. This theory builds upon the classical theory of interest rate by recognizing the fact that money supply significantly influences saving and investment. The market interest rate (the cost of credit) is determined at the rate that equates the supply of loans to the demand of loan (Ngugi 2001).

Loan able funds theory has implication on bankers', savers and borrowers. According to this theory, this group should be well compensated at the equilibrium. Interest rate on loan should be structured in a way that every party feels comfortable.

2.4.2. The rational expectations theory of interest rate

This theory holds that investors form expectations of future interest rates from all available market information. Most especially, the future interest rate is estimated from the current spot rates, taking into consideration trends in interest rates over time. According to this theory interest change arise as a result of unexpected information or economic changes.

The expectation theory and the loan able funds theory together helps to explain how investors react to available information. Can be incorporated with loan able funds theory in order to better consider the available information within the economy.

If expectation of the people is that the interest will go up many people will avoid borrowing, this in return will affect bank performance due to reduced earning on the interest rate, but if people expect interest rates to drop people would be willing to borrow and this will improve bank performance due to increase in the interest rate earning (Bekaert, 1998)

2.5. Causes of High Lending Rate in Ghana

The higher lending rate has negative impact on the individual, business community and the economy as a whole. In Ghana it has been observed that high rate of universal banks is caused by the following:

High Cost of operation of the banks

It has been observed that the high cost of operation is one of the major contributing factors that lead to high cost of funds of the universal banks in Ghana. Gockel and Mensah (2006) suggest that, operating costs of universal banks in Ghana are the largest contributor to interest rate. Poghosyan (2012) state that banks who are less efficient in their operation exhibit higher operating costs and are characterized by higher interest. And for banks to stay in business they must this cost to the borrower in the form of high lending rate. According to Demirguc-Kunt and Huizinga (1998) banks pass their overhead and operating cost to their customers inform of high interest rate.

High Government borrowing from domestic market

Another contributing factor of high lending rate in Ghana is heavy borrowing by government from the domestic market to finance its budget deficit and high expenditure that the government made during election years in order to win power also contributes significantly to high rate of lending in the country. Looney and Frederiken (1997)

High Treasury bill rate

High treasury bill rate in the country has become the benchmark for which universal banks base their rate to it. This is because it comes with the risk free rate, have also contributed to the high rate. Ngugi (2001) state that treasury bill rate has asymmetric response with the treasury bill rate where lending rates increase with the treasury bill rate.

Macroeconomic instability

Macroeconomic instability is another cause that leads to the high lending rate in the country for example, J. K Kwakye Senior Economist with the Institute of Economic Affairs – Ghana state that with double digit inflation, there is nothing that banks must do to cover their cost of operation than to charge the higher rate to enable them stay in the business. Kwakye (2010).

Depreciation of Cedis against the U. S.A Dollar

Another factor which causes the lending to rise is the depreciation of cards against the dollar, which is the major trading currency in Ghana. Currently the value of dollar to Ghana Cedis is around GH□ 3. 50/ $ in this situation, banks have to charge high to keep space with the appreciation of the dollar against the Ghana . (Alfaro et al 2003, Lindgren

et al, (1996), Ransford Quarmyne Churchill, Collins Owusu Kwaning, Owusu Ababio (2014).

High risk of premium (Provision of default rate)

High risk of borrowing of borrowing, which emanate from a lack of collateral and credit reference by the borrower are also contribute result to the high default rate, which lead to banks to make a provision of high default rate and factor it in the rate of charging their customer have also caused lending rate to increase Bawumia et al (2005).

High Policy rate

Head of the Economic Division of the institute of statistics, Social, Economic and Research (Ghana) state that bank of Ghana must also be blamed for high rates of lending in Ghana. With the current policy rate of 21%, no bank will lend to its customer below this rate. Because this is the rate that a universal bank borrowed from BOG. And for the universal banks to add their operating cost and risk premium of the borrower, the rate will automatically be high. According to Folawewo and Tennant (2008), the policy rate rate is positively correlated with banking sector interest rate .

Inflation rate

Inflation is proxy by the Consumer Price Index (CPI). This variable is an indicator of the cost of doing business in an economy. Inflation is an increase in the general price level and is typically expressed as an annual percentage rate of change. Inflation depreciates the value of money. When inflation increases, banks also increase their cost of credit to keep the space with inflation, which will result in increased lending rate in the country. In the works of Aboagye et al.(2005) and Bawumia et al. (2005) find a positive relation between inflation and universal banks interest rate suggesting that the government should

improvements in the macroeconomic environment in terms of lowerinflation rates translate to lower net interest margins

2.6. The impact of higher lending rate for the repayment of loan.

The Association of Ghana Industry, (AGI) United Trade Association of Ghana (UTAG) and Ghana Chamber of Commerce have called on the banks and government to work towards reducing the high level of lending rate in the country.

The higher lending rate has an adverse impact on the repayment of the loan and the following are the some of the adverse impact:

Stightz (1989) and Basely (1994) state that the higher lending rate lends to wrong selection of loan applicants and those who take a high risk to get their loan from the universal banks are those with high level of default rate in the banking industry. This is because with the rate on the loan the borrowers will not be able to invest it and get return which can pay the loan, for example, in Ghana, lending rate is around 32%, this means that if you borrow at this rate, you are to invest it and get return more than 32% other than that you will not be able to pay for the loan.

Another problem with higher lending in relation to loan repayment is that, the high lending rate will induce the borrower to use the money borrowed to pay for the previous loan rather than investing the money in what it's intended for (Aryeetey et al, 2000).

The higher rate on loans will lead to high cost of operation for the investor which will result in the high price of the output of their product, influx of imported goods on the domestic market, which is of cheaper price, because of the low rate that investors borrowed to produce such goods, people will not patronize that local goods which are of

high cost thereby resulting in revenue loss to the investor. In such situation the investor will not be able to honour his obligation of paying the loan.

2.7. How Credit risk is considered in pricing, loan rate

The risk that associates with lending rate is a very important issue for universal banking sector. And for them to operate efficiently banks must understand and be able to eliminate it when setting rates on their loan according to the nature of the risk of the borrower.

In the study of Altman and Sauder (1997) credit risk of the borrower is measured in three ways. These are subjective analysis, which is also called the banker expertise, accounting based credit scoring system and the method for measuring credit risk is a market analysis model.

The first method which is the subjective analysis method is used to value credit risk of corporate loan. Under this method credit manager in the bank used information about the borrower. Characteristic such as borrower character, capital and volatility of his earnings is used to assess him whether to grant the loan and at which rate to grant it.

The next method for assessing the borrower in the banking sector is accounting based credit scoring system. In this method the credit manager used key accounting ratio to rate the borrower for example, using a multivariate model, the key accounting variables are combined and weighted to assess the probability of the creditor default. The following are method used to develop a multivariate credit scoring system: The linear probability model, log its model, the profit model and the discriminate analysis model.

The last method that is used to value credit risk capital market model which focus on bankruptcy of the default, this model uses capital market base model such as risk of run

model option, pricing and the mortality rate model to assess the borrower and knows his level of credit default.

In the work of Fama (1985) , Diamond (1984) and Thakor (1995) state that banks can also use information generated through banking interaction with the borrower to evaluate the risk level of the borrower which can enable them in setting the rate.

Bensanko and Thakor (1987) are also of the view that banks can use the collateral system to induce the borrower to show his hidden risk. They do this to differentiate between customer or borrower who is ready to accept collateral requirement and the one who is not ready to accept the collateral requirement.

Their theory state that the borrower who is ready to accept the collateral requirement is of low risk default and therefore must be given low rate and the one who refuse to accept the collateral requirement is of high level of risk of default and must therefore be given higher rate.

2.8. Relationship Banking

This theory refers to a close association between banks and their clients. According to Boot (2000) this theory is defined as a provision where banks: (1) invest their research in order to obtain specific information from its customers and evaluates investments of the customers through multiple interactions over a period of time.

In western countries relationship banking is viewed as good practice in where banks find a way of obtained information about their customers and make available for those are perceived as a good customer.

According to Dewenter and Hess (1997) relationship banking enable banks to manage their loan grant to their creditors as well due to reliable information about their customer

and they are able to know who to grant the loan and who will be able to pay it within the stipulated time of agreement. They are able also to know the of investment of their and able to assess it, whether it's profitable or not due the information they have about the borrower.

Boot (2000) found that relationship banking several as a contractual agreement between the bank and the borrower. This relationship results in flexibility and discretion in contracts fasting in long term binding contract, and better control of potential conflict of rate on the cost of credit.

Finally, with relationship lending banks are able to handle slow starters, that is customers who prove less gainful in the short term, but profitable in the long term. If the relationship is maintained well, the bank will reap for the value in the course of time.

2.9. Relationship Lending

Researchers on relationship lending is of the view that a relationship with a bank lend to a good relationship between the bank and its customers, which result in the reduction of information asymmetries thereby create a good value for the creditor. This value can move in the form of reduced interest rate for loans (Jiangli, 2004). As a result of this long term relationships benefit both the bank and the borrower. To the borrower it enables them to get a better price for loan (that is a reduce interest rate) and it enables the banks to have a better information about their borrowers.

According to Machauer and Weber (1998), this relationship banking is in a situation where the bank is only the financier for the creditor in a particular country or region. This theory enables the bank to assess the borrower risk more accurately than competing banking which results in the lowest rate of credit to companies or individuals with low

risks. It is an information intensive type of credit financing, which affect credit pricing (Suwanaporn, 1996).

However the private information obtained by relationship lenders about borrowers gives them an information monopoly. Baas and Schrooten (2005) is of different view that relationship lending resulted in higher rate on credit because of the cost involved in monitoring the customer frequently. Farinha and Santos (2000) are also of the same view that the longer the relationship a bank has with its customer the higher the rate on the loan.

2.10. Impact of Higher Lending Rate on Economy

The performances of the economy are measured by the use of inflation, aggregate output or income, rate of unemployment and interest rates. Interest rates have significant influence on the other three macroeconomic variables. This accounts for the reason why many capitalist societies adopt interest rates as a tool of monetary policy and also taken into account when dealing with other variable like inflation, unemployment and investment.

Low lending rates encourage borrowing for both businesses and households. Low lending rates encourage and stimulate economic investments, leading to increased productivity, employment and national income. Businesses investments in building, machinery, equipment's, new factories and other assets are stimulated when lending rate decreased. This is because lending rates that must be paid on borrowing is a key element of the cost of making an investment. Therefore, investors or business executives, Government will find investment prospects more attractive as lending rates decreased (Baumol and Blinder, 2000).

This situation will by extension, lead to an increase in total spending since investment spending is a component of total spending, thereby increasing productivity and reducing unemployment. Decreasing lending rate makes it easier for individuals, businesses, government and foreign investors to procure cash and encouraged them to spend more due to increased access to capital. This will in turn lead to the enhancement of business expansion, increased sales and employment of additional labour as consumers can also have access to cheaper credits (Baumol and Blinder, 2000).

Business investment is highly sensitive to lending rate since then they form the basis for determining the cost of borrowing or the price paid for the rental of funds (Baumol and Blinder, 2000). This therefore means that the higher the lending price, the higher the cost of borrowed funds, which will be invested in operational necessities such as capital equipment, building as well as meeting other overhead costs.

High lending rate, therefore, discourages investment which in turn leads to high unemployment and a reduction in the total spending and national income. Increase in interest rate leads to fall in the demand for interest sensitive goods as manufacturers may pass on their high cost of borrowing to consumers or these consumers may have to obtain expensive credits in order to be able to purchase these goods. It is also obvious that higher interest rates will lead to higher price levels, which cause us to buy more imports and export fewer goods.

According to Mensah and Abor (2011), high interest rate spreads tend to discourage savings due low returns on deposits and reduces demand for credit facilities due to the high cost of capital leading to a cut-down in investment in productive activities. In essence high interest rate spreads lead to a reduction in economic growth. Aboagye at el (2008) share the view of Mensah and Abor where he explained that the low deposit rate make

potential depositors switch to put their funds in alternatives marketable securities, for example, treasury bills, thereby reducing the reserves of bank limiting the ability of commercial banks to create funds. He added that the excessively high lending rate scare away potential investors from borrowing to finance productive ventures, thus negatively affecting economic growth.

2.11. Monetary Policy and Overview of Interest Rates in Ghana

The enactment of the Bank of Ghana Act, 2002 has set the pace for legal and institutional empowerment for the pursuit of monetary policies (Addison, 2008). The central bank is legally mandated to pursue relevant monetary policy goals, and to use any tool within its powers. The Bank of Ghana Act, 2002, directs the Central Bank to make price stability is a primary objective. The act directed the focus of Ghana's monetary policy to inflation targeting. This was a transition from the traditional monetary policy framework which focused on targeting monetary aggregates. The Bank of Ghana Act sets up the Monetary Policy Committee with the mandate to formulate and implement monetary policy. The Monetary Policy Committee (MPC) was created in 2002 and was charged with the formulation of monetary policy. The MPC sets the policy rate to spearhead the direction of interest rates in the economy. To inflation targeting through tight monetary policy stance, the policy rate is increased; and to pursue an expansionary monetary policy, the rate is decreased.

Historically, Treasury bill rates in Ghana were very high. Banks therefore preferred to lend to the government because they are considered relatively safe compared to other forms of investments. The rate on these bills is above the rate of inflation, thus providing a high positive return to banks. A sizeable portion of the assets was therefore invested in

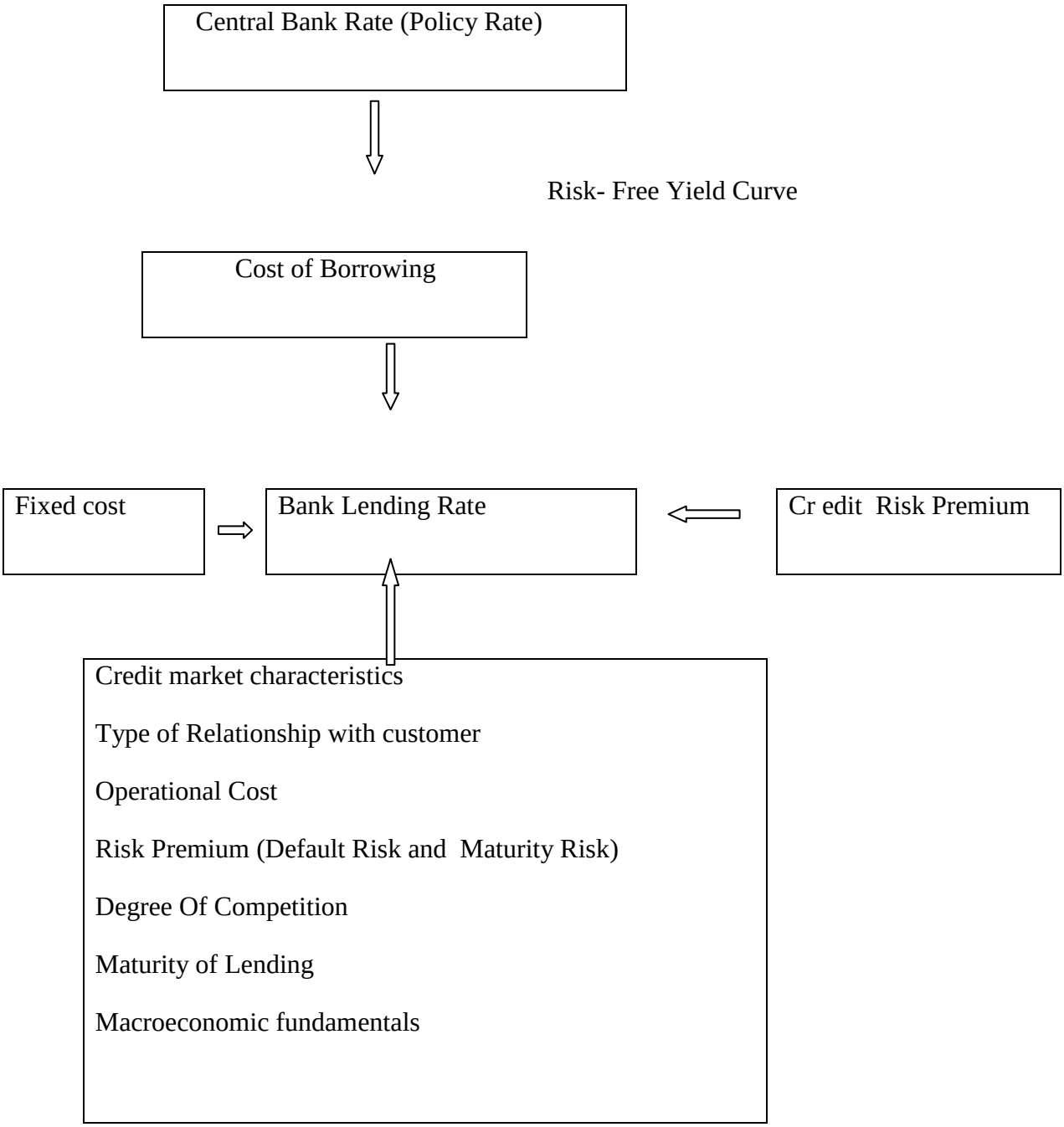
government instruments, thus leading to a crowding out of the private sector from the credit market

Banks in Ghana offer a variety of rates on their loan products. Even for a particular bank, the rates offered to different clients differ based on the risk profile of the client and the type of loan. The rate offered by banks is usually set above the BOGs policy rate. Most banks quote a base rate which is an indicator of the interest rate that will be offered to their prime customers. Generally, Universal Banks in Ghana compute their lending rate in the following way;

- Weighted cost of funds (Policy Rate)
- Administration overhead costs
- Provision for bad and dough debt
- Risk margin (Risk premium, Default risk, Maturity risk)

Most banks offer interest rates on their savings accounts but not current accounts. The interest rates offered on deposits have been historically far low below those charged on loans. Further, these rates have usually been below the rate of inflation, thus producing negative real returns for savers. There is also the inter-bank rate, which represents the rate at which banks lend to each other for short periods.

Figure 2: Chart of key factors that determine Bank Lending Rate In Ghana



2.12. Formula for Determine Base Rate of Universal Banks in Ghana

The Bank of Ghana introduces the new bank base formula to be used as a guide to loan asset in an attempt to address seemingly economic problems. According to Bank of Ghana, the formula becomes important because the old formula had not been able to bring uniform in the determination of the bank interest rate. The shortfalls of the old formula are as follows:

Banks lend below the policy rate of the Central Bank, a situation which undermined the Central Bank policy rate, which supposed to influence the behaviour of interest rate in the banking industry.

The old formula does not promote transparency in the setting of lending rate and uniformity in the definition of the determinants of the base rate.

Bank of Ghana in consultation with the universal banks, constituted working groups which include association of Ghana Industry (AGI) introduces the new formula for the universal bank base rate in 2012.

The new base formula was aimed at facilitating better assessment of the Monetary Policy transmission of the Central Bank.

It was also to encourage transparency and uniformity in the determination of universal base rate. The formula for calculating the base rate of the universal banks includes the following:

The cost fund

Return on the equity to shareholders.

Risk premium of the borrower.

Provision for bad debt

2.13. Overview of Banking in Ghana

In Ghana, the banking industry has been divided into three categories; these are Merchant banking, retail banking and development banking. Merchant banks have been limited to, commercial business, while the retail and development banks are responsible for clients across the banking industry.

Due to this background of unequaled playing field, Bank of Ghana came out of the ideal of universal banking in order to enable equal playing field in the in the banking industry in Ghana. According to Hinson (2004) before the implementation of universal banking law in Ghana, banks were seen to conduct their business along a narrow scope, but now a universal banking license banks are allowed to operate a wider range of banking business since permissible banking activities have been widened. With the universal banking license, banks do not only mobilize deposits and give out credit facilities, but also offer various services including offering of investment products, offering investment advisory services, foreign exchange among others.

2.14. Empirical Study.

Various studies have revealed various determinants of lending rate, according to whether they are bank specific, industry specific or macroeconomic in environment. However, other literature related to the identified financial regulation in addition to the other three classifications. In other literature, determinants of lending rate have been categorized into inside (internal) and outside (external) factors. The internal factor related to the variables that affect the banking industry within while the external factors relate to the legal and economic conditions that affect the performance of the banking industry from outside A number of explanatory variables have been projected for both categories, according to the nature and reason of each study.

2.14.1. Industry Bank Specific Variable

The industry specific factors variable do not vary over bank, but vary over time. According to Buchs and Matheson (2005), a competitive banking system is required to ensure that banks are effective for financial interrmediation to channel saving into investment to fostering high economic growth. Rose and Hudgin (2008), Das and Ghosh, (2007) and Jimene and Suriani (2006) is of the view that when the competition are high it tend tends to squeeze the difference between the lending rate and borrowing rate. If the determinants of spread are held constant the rate between borrowing and deposit will reduce as competition increase which will force management to find a new ways of generating revenue to make up for the eroding earning. This has also been collaborated by Ngugi, (2001) who points out that empirical results shows that market imperfection have wide bank interest rates. Stigtz & Hleiss (1981) revealed that imperfect competition in the banking industry as a result of asymmetric distribution of information and wealth distortions have significant influence on banking interest rate.

In the work of Berger & Hannah (1989) state that the structure of the market determines the rate that banks charged. In an industry where the market concentration is high and is controlled by few players, those players will exploit the market and charge monopolistic rent. On the other hand, if the players in the market are much the ability to charge monopolistic rent will reduce resulting in low lending rate.

Several indicators have been used in literature to capture market structure in the banking industry. These indicators include; the Herfindahil index, the Lerner index, the three largest bank concentration ratio and five largest bank ratio. Amidu and Wolfe (2012) are of the view that convectional and funded adjusted Lerner Index (proxy market power) exhibit positive correlation with lending rate in the developing countries However, according to Bain (1951) state that concentration in the market will result in collusion

which enable the player in the industry to pay less on their liabilities and charge high on their assets result in increase in lending rates.

From the review of extant literature, it is observed that the key drivers of bank lending rates in especially developing countries are operational costs, the effects of financial repression, non-competitive in the banking industry. Similarly, when there are dominant banks with large market power there is a high tendency for them to manipulate industry variables, and for that matter, they could drive lending rate high by their market power (Agu 1992; Aryeetey Hettige, Nissanke and Steel 1997; Barajas et al, 1999; Brock and Rojas Suarez, 2000). Wony (1997), note that interest margin (lending rate) is positively correlated to banks market power, operating cost, credit risk and the degree of interest rate risk. Broadly put, researchers also pointed out that bank interest spread (the difference between the bank lending rate and deposit rate) is influenced three key factors: bank specific, industry, regulatory, and macroeconomic factors (Mensah and Abor, 2014). The bank specific factors are conditions unique to individual banks which are to a large extent under the control of banks; examples include bank specific risk, bank size, and bank efficiency). The industry factors are those conditions peculiar to all firms in the banking industry; an example is market structure.

Regulatory factors arise from the provisions of the laws governing the banking industry, and from directives and policy guidelines of regulators; examples include capital requirements, reserve requirement, and licensing requirements). The macroeconomic factors are economic factors that affect all economic agents, and are beyond the control of any individual, firm; examples include inflation, interest rate fluctuations, and exchange rates).

According to Mensah and Abor (2014) that determinants of bank lending rate may be caused by a numbers factors includes, bank specific factors (such as bank specific risk, bank size and efficiency), bank industry characteristics (market structure), regulatory factors (capital adequacy ratio and reserve requirement) and macroeconomic factors (inflation volatility of interest rates and exchange rate). Larger banks as compared to smaller banks are able to offer lower lending rates because their scale of operation earns them economies of scale, and thus they are more likely to offer lower lending rates and higher deposit rates; they also tend to have lower interest margins (Ho and Saunders, 1981). Thomas et al (1981) state that, developed bank interest margin model in which the bank was viewed as a risk –averse dealer. They show that interest margins the result of the transacting uncertainly face of the bank and would always exist. They also found out that margin depends on four factors; the degree of managerial risk aversion, the size of transaction undertaken by the bank, bank market structure and the variance of interest rate. It has also been identified by various studies that macroeconomic factors contribute significantly to the determinants of the bank lending rate. Followers and Tenant, (2008) observed from the study conducted by Chirwa and Mlachila (2004) that macroeconomic variables, typically through to be determinants of interest rate include inflation, growth of output, money market and real interest. They further identified that macroeconomic instability and the policy environment have an important impact on the pricing behaviour of the universal bank loan. They noted that interest rate uncertainties, exchange rate of universal banks, public sector loan are necessary determinants of interest rate.

2.14.2. Macroeconomic Variables Environment.

In addition to the bank specific factors, banks also keep eye on the economic environment when setting their lending and deposit rates. Macroeconomic conditions have been

observed as one of the most important factors that explain the variation of the universal bank lending rate. A study conducted by Brock and Franken (2003) suggests that macroeconomic condition is the most important determinant source of variation in cost of credit. It was also affirmed by Chirwa and Mlachila (2004) that macroeconomic instability and the policy environment in which banks found themselves to be having an important impact on the way universal banks set their lending rate. Their findings suggest that most important factors of macroeconomic factors that affect the lending rate are inflated, GDP and the money market real interest rate. Macroeconomic condition also has an impact on the performance of the banking industry by influencing the ability of borrowers to pay their loan. Unstable macroeconomic condition in the country and with poor economic grow affect the return of in the investor's investment and these lead to high rate of lending rate as the level of non-performing loans increase and the banks must factor these non-performing into the lending rate.

Undoubtedly, an unsound macroeconomic and policy situation is perceived as more unsafe and banks may recompense for it by requiring wider margins which lead to high lending rate.

Gambacorta (2004) is of the view that the rate that banks set on their loan have positive correlation with GDP growth and inflation. In a situation where there is an increase in economic condition in a particular country, Project that appears not to be profitable venture become profitable when discounted at the present time. This means that an increase in economic conditions will result in an increase in demand for loan which will lead to high rate on the loan. On the other hand, if the economic condition leads to low demand for credit because many people now have money with them will result in low demand for credit will lead to low leading rate. When the economy is flourishing, it pushes up demand for deposit and therefore the banks have no incentive to increase

deposit rates. Economic cycles significantly influence the operation and performance of banks. Talavera, Tsapin and Zholid (2006) observed that during periods of economic boom, banks make out supplementary loans than during periods of economic recession. In further support of this observation, De Young, Gron and Wnton, (2005) explained that banks make more loans during periods of economic boom because during such periods, businesses make huge profits, more investment opportunities open, and thus demand for lending (additional funding) increases.

It was also found in the work of Mansor (2006), that there is a positive relationship between GDP and bank credit for an increase in GDP growth will result in an increase in the demand for loan.

Looney and Frederiken (1997) Suggest that two main effects occur with government borrowing, which are the crowding out or the complementary effect. Crowding out is a situation where government participation in the economy is active such that the government out-competes the private sector.

Exchange rate fluctuations, specifically, currency depreciation in a home country result in bank asset being valued less in foreign currencies as against their liabilities. In the works of Lindgren et al, (1996), found that the fluctuation in the exchange rate is a prime cause of poor performance of bank borrowers which subsequently affect bank profitability. This situation is more certain in developing economies which are exposed to foreign trade. Excessive exchange rate variation weakens economic and financial growth in a country and is seen to be the most significant cause of the banking crises in a lot of counties. In the developing and open economy like Ghana one expects that exchange rate depreciation will negatively affect the bank lending rate.

In Ghana Aboagye et al. (2005) and Bawumia et al (2005) found a positive relation between inflation and the net interest rate, suggesting that the improvement in the macroeconomic environment in term lower inflation rate translates to lower net interest rate.

Treasury bill rate is also another variable which affects the bank lending rate. Treasury bill rate is the instrument, in which government uses to borrow, and such financial investment option is risky free and such liquid investment instrument influence the determination of interest rate and as such, a risk premium is added to the Treasury bill rate to compensate for the risks interest in credit.

Ngugi (2001) identifies asymmetric response to the Treasury bill rate where lending rates increase with the treasury bill rate and become sticky downward when the Treasury bill rate declines. The professional Association of banks in Ghana indicate in a that the decision for banks to set their lending rate is influenced by the following factors; Central bank reserve requirement, Earnings on reserves, Policy rate, Projected turn over on a customer account, duration of deposit, Treasury' bill rate and Macroeconomic condition like inflation exchange rate (Mensah, 2005).

2.14.3. Bank Specific Variable

There is a considerable degree of consensus that the quality of management makes the difference between sound and unsound bank. As this variable is measured by the Cost Income ratio, an increase of these ratios means a deterioration of management efficiency and will result in a decrease in the net interest rate, (Navnet, Boopen, Sawlut, Shalin and Benesh 2009, Sarpong Winful and Ntamoah, 2011).

Demirgue- Kunt and Huizinya (998) maintain that variation in overhead and operating cost are reflected in the variation in bank interest rate as the bank will pass their operating cost on to deposits and lenders. Bawumia et al (2005), indicates that high operating cost which is mainly due to labour costs and bank's determination to maintain high profit margin are the two bank specific factors which contribute significantly to the wider bank interest rate.

Aboagye et al. (2005) state that, the quality of bank management affects profitability. They again state that an increase in this variable has negative impact on interest rate because an increase in the ratio implies a decrease in efficiency, hence a reduction in net interest rate. Bawumia et al (2005) also found that continual increase in intermediation spreads in developing countries is to a large extent driven by in operational cost. As the bank's cost of operations rise, they pass the burden to consumers through higher lending rates, and lower the deposit rate if prudent. Thus, they make customers bear the burden of the internal inefficiency, and this is not justifiable.

Rebinson,(2002) state that the incidence of fraud, the ease with which bad credit risk survive due diligence and the state of corporate governance within bank have the potential of increase asset deterioration, operating costs and ultimately interest rate .

Bank size is also considered as an important determinant of banking lending decision. Uchida et al (2007), Berger & Udell (2006) provide that large and complex bank tends to lend few loans to small scale firm, Stein (2000) explains that small bank has comparative advantages in producing soft information whereas large bank have comparative advantage in lending based. In addition, large and complex banks are able through technical expertise to process soft information about small scale firms, which lend to a positive relationship between bank size and lending rate.

Bashiri (2003) also states that, the large size bank has the advantage of providing a large menu of financial service to their customers and thereby mobilize more funds which will lead to serving their customers with low lending rate. Back and Hesse (2009) finds some evidence that large banks in Uganda charge lower lending rate (due to scale economies).

Credit risk is critical since the default of a small number of important customers can generate large losses which can lend to insolvency or high lending rate because of this bank will find a way of shifting the cost to their customers thereby increasing the lending rates.

The Professional Associations of Banks in Ghana in a paper state that the judicial system in adjudicating commerce cases are quite laborious and costly. In case of loan default it becomes very costly for banks take legal action to enforce the realization of the security package. Such costs are at times factored into the pricing of the credit to the borrower.

In the works of Bawumia et al (2005) they suggest that adverse selection and adverse incentive (moral hazard) effects which could result in mounting non-performing loans and provision for doubtful debts also affect the way universal banks price their loan. Banks that are financially distressed lost the lending capacity since them less liquid, and prone to insolvency. Similarly, Karim, Azuuman – Saini A, (2011) also found that the banks' loan supply is dependent on banks' liquidity level, and thus there is a positive relationship between bank liquidity and bank loan supply.

Olusanya et al (2012) examines the determinants of universal banks' lending behaviour in Nigeria case found that foreign exchange rate, investments in a portfolio, deposit and liquidity ratio have a positive impact on universal banks' lending volume whiles the coefficient of lending interest rate and minimum cash reserve ratio were negative.

In addition, bank relationship with the customer also plays a greater influence on the price behavior of bank lending rate, Chodechai, (2004) state that banks' lending decisions influenced by the past relationship with the borrowers which enable banks to have more accurate understanding of the borrowers business and financial situation.

In the works of Demirguc-Kunr and Huizinya (1997) identified that better contracted enforcement, the efficiency of the legal system and lack of corruption are associated with lower interest margin. This implies that developing economies will have a wide margin, due to inadequate legal system, weak contract enforcement and high level of corruption. It was also observed by Chiwa and Ma Chila (2004) that high interest spread in developing economies will persist if financial sector returns do not significantly alter the industry and macroeconomic environment within which the banks operate.

A borrower's collateral can have a major impact on the interest rate charged by a lender. Collateral places the lender in a more secure financial position. In the event that the borrower doesn't repay the loan, the lender can force the sale of the collateral in order to recoup any losses incurred. This lessens the risk to the lender, which result in reduced interest rate.

2.14.4. Bank Regulatory Variable

There have been enough empirical evidence that bank lending rate are also greatly influence by financial regulation emanating from a country monetary policy. Reserved requirement is the prescribed percentage universal banks total deposit that must be kept with the central bank as caution In the work of Ho and Saunder (1981) they asserted that various imperfections and regulatory restriction such as probability of loan defaults and opportunity cost of holding mandatory reserves have significant influence on the interest rate of banks.

Bawumia et al (2005) also agreed to the assertion that liquidity reserves and taxation contribute to some extent the wide interest charged by banks in Ghana. Sarpong et al (2011) and Kwakye (2010) all confirm that in Ghana universal banks respond to an increasing in reserve requirement by increasing the margin between lending and deposit rate.

Yu (1995) also states that capital regulation impact on interest rates. This is because the interest rate has a direct relation with capital to assets ratio such that an increase in the cost capital emanating from capital requirement is passed on to borrowers.

Policy rate is another regulatory requirement that affects determinant of the lending rate in Ghana. Policy rate is that rate that a universal bank pays to borrow funds from the central bank (Bank of Ghana) and these areas a marginal cost of funds to the bank. The Banks base rate in adjusted to reflect changes in the BOG rate. According to Folawewa & Tennant, 2008 policy rate is positively correlated with the banking sector rate

2.15. Conclusion

The study concluded that there exists a positive relationship between Universal banking rate and determinants that determine the lending in the banking include. Market concentration, management efficiencies, Government domestic borrowing to finance its budget deficit, bank size, Bank of Ghana policy rate, Reserve requirement and treasury bill rate. Other factors that determine Universal bank lending rate included; non-performing and macroeconomic conditions like inflation

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

In explaining the methodology of this study, the various estimation procedures and tools applied to achieve the objectives stated in chapter one are clearly identified in this chapter. It outlines the scope of the study and sources of data needed for the analysis in the quest to achieve the research objectives. The chapter further specifies and justifies the econometric model adopted by the study while giving the justification for the variables used in the model. The chapter thus sequentially lays clear emphasis on the scope and sources of data for the study, the conceptual and functional econometric models, the estimation procedures followed in estimating the econometric models as well as the choice and justification of the variable used in the econometric models and finally the conclusion.

3.2 Scope and Sources of Data

This study uses secondary data from published financial statement and annual report of universal banks as well using other data from the Bank of Ghana. The data collected are arranged in panel data. Panel data has the advantage, because of its robust to several types of violation of the Gauss Markov assumptions, namely heteroskedasticity and normality (Wooldridge, 2010). The panel data have a number of serious observations beginning from 2006 to 2013. The data were analyzed using State 13 with panel data model to determine the sensitivity of each of the variable affecting lending rate of the universal banks in Ghana

The study sampled banks with a minimum of five (5) data points. Currently, there are (30) universal banks in Ghana, which constitute the population for the study. Out of the total number, twenty-six universal banks were sampled for the study. These include; Bank of Africa, Intercontinental Bank, Stanbic Bank Ghana Ltd, Standard Chartered Bank, The Trust Bank. Including GCB Bank, UT Bank, Unibank, National Investment Bank, Agriculture Development Bank, Prudential Bank Ltd, and Universal Merchant Bank. The rest are Ecobank Ghana , HFC Bank , United Bank Of Africa, Zennith Bank , Guaranty Trust Bank, Fidelity Bank Of Ghana, First Atlantic Bank, BSIC, Access Bank , Bank of Baroda Ltd, Barclays Bank Of Ghana, International commercial Bank, Cal Bank Ltd, as well as SG-SSB Bank Ltd.

3.3. Data and Model Specification

To answer the researcher's objectives related to determinants of lending rate in Ghana universal banks, we use panel data equation model as;

$$Lrate_{it} = \beta_1 \mathrm{Gdp}_t + \beta 2 Er_t + \beta_3 \mathrm{Infl}_t + \beta_4 Tbrate_t + \beta_5 Polr_t + \beta_6 Bksize_{it} + \beta_7 Mgteff_{it} + \beta_8 Npl_{it} + \beta_9 Liqr_{it} + \beta_{10} HHIiit + \lambda_t + \nu_i + \varepsilon_{it}$$

Where:

Lrarte_{it} = Lending rate in percentage of bank i at time t

GDP = Growth rate of Gross domestic product

Ear = Exchange rate (value of dollar)

Infl = Annual average Inflation

Tbrate = Bank of Ghana annual average treasury bill rate

Polr = Bank of Ghana Annual average policy rate

Mgteff = Management Efficiency

Npl = Non- performing Loan

Liqr = Liquidity Ratio of liquid cash

HHI = Banking concentration

λ_t = the unobserved time specific effect

ν_i = the unobserved individual specific effect and

ε_{it} = the remaining disturbance term.

3.4. Estimation Strategy

Given the results of the Hausman specification, the random fixed effect model was appropriate estimation technique for the study. However, the Study made use of the panel corrected standard errors (PCSE) model of the ordinary Least Squares (OLS) which is robust to heteroskedasticity and first order serial correlation. The study was performed using balance panel data techniques, thereby ensuring avoidance of estimation bias and specification problems. The panel data estimation was done with the use of Stata (13).

3. 5. Explanation of the Variables

3.5.1. Dependent Variable; Lending rate

The dependent variable used in this study is the lending rate. Lending rates are the price that a borrower paid when taking loans from the universal banks.

These have an impact on the borrower and the lender separately. Literature has shown that high lending rate have implication on both borrower and the lender. On the part of borrower high lending rate scare them because borrowing at a high rate will be difficult for them to settle their obligation. For example, with the current lending rate in the Ghana range of 32%, which implies that, when you borrow at this rate you must invest it and get a return more than 32% either than that you go bankrupt.

The bank is also of the view that operation in cost and the cost of providing efficient service is high, for example, with the current situation of electricity crises, where banks have to find another alternative of getting power for their facilities will end up increase their operating cost, in which they have to pass on to the customers in form high lending rate.

Van de Heuve (2000, 2002) state that for banks to continue in trade, their total income must be more than the total cost of their operation which implies that banks must charge to cover their high cost.

3.5.2. Independent Variables

Macroeconomic Variable

Macroeconomic variables employed in this study are GDP, Inflation, Exchange rate and the Treasury bill rate. Macroeconomic variables represent factors that influence business performances in the economy and the capacity for a loan payment. These variables are taken into account when pricing a loan. An unsound macroeconomic condition is perceived as more unsafe and banks may compensate for it by setting high lending rate.

GDP Growth

GDP growth represents the total economic activities in the economy and it is commonly used as an economic indicator. This variable is calculated as an annual average percentage of growth of GDP and it is expected to have a positive / negative impact on bank lending rate. An increase in this variable means an increase in the purchasing power of the individual in the country and this will result or enable the borrowers to settle their obligation. That is payment of their loan.

It will also result in the ability of the individual to increase their savings. If an increase in GDP result in low demand for loan and increase in the saving it will lead to low level of interest rate in the banking industry, but if the increase in GDP lead to higher demand for long because investors or individual have more fund and can afford huge amount of loan this will result in an increase in the rate that banks charge. This is because the demand for loan is high and banks will take advantage by increasing their lending rate.

Inflation

According to Band (2010) inflation is proxied by the Consumer Price Index (CPI). This variable is an indicator of the cost of doing business in an economy. Inflation is an increase in the general price level and is typically expressed as an annual percentage rate of change. Inflation depreciates the value of money. Inflation affects banks because they typically deal in nominal financial instruments which make up the bulk of bank assets and liabilities. In smooth operating credit market, banks can easily adjust the nominal interest rate when they need to but fractions create obstacles that make this adjustment difficult. Since empirical studies have shown that credit market frictions are more severe in developing countries than developed countries, these frictions may play an important role in explaining the impact inflation has on economic growth in these countries. Boyd &

Champ, (2006). An adverse effect on economic growth through the banking industry as a result of high inflation is to reduce the level of funding available for businesses. High inflation can reduce the real rate of return on assets. Lower real rates of return discourage saving, but encourage borrowing. As inflation increases beyond some point, it results in a decrease in bank lending. Quite a few economists have established that countries with high inflation rate have unproductively banking sectors and equity markets. This adverse suggests that inflation reduces banks' lending to the private sector, which is consistent with the view that a sufficiently high rate of inflation induces banks to ration credit. It has been suggested that the credit that universal banks lend to their customers reduces as inflation increase. This variable is expected to be positively correlated with lending rate.

Exchange Rate

We also used an exchange rate consistent with (Alfaro et al 2003) we measured the exchange rate as the Ghanaian Cedi per United State Dollar. The exchange rate is expected to have a positive effect on bank lending rate, especially on the domestic banks. This variable reflects the changes in interest and inflation rates in countries with free – floating exchange rates. Exchange rate volatility for each year is calculated as the standard deviation of the percentage in the real exchange rate for the three preceding years. Because increased macroeconomic instability heightens the risk of face of universal banks. This variable is expected to be positively correlated with lending rate.

Treasury Bill Rate

The Treasury bill rate (TBILL) is generally regarded as an indicator of the interest rate policy being pursued by the rate Central government when borrowing from domestic market. This variable is therefore expected to be positively correlated with lending rate.

Policy Rate

The policy rate is defined as the rate face by the universal banks when borrowing from the Central Bank, it serves as a leading indicator of interest rate in the economy. If the policy rate is increased, transaction, interest rates would move upward vice versa. The policy rate works by directly controlling the amount of money available to the public and consequently inflation

Bank Specific Variables

Bank specific variables include: bank Size, quality of management efficiency, Bank liquidity ratio and non-performing loan.

Bank size

Bank size is measured as the log of bank total assets. Ideally, one would expected signed can be positive or negative

Management efficiency

The quality of management makes the difference between sound and unsound banks. Joaquin and Juan (2002) State that high quality of management translates into a profitability composition of assets and allow cost composition of liabilities. The quality or efficiency of management is proxied by the cost to income ratio which is defined as the operating cost necessary to generate one unit of gross income.

An increase in this ratio implies a decrease in the efficiency or quality of management, which will translate into a higher lending rate. This variable is measured by the ratio of a bank's total operating expenses to total revenue. This variable is expected to have a negative relationship with lending rate.

Non- Performing Loan

Non-performing loan is also another variable which affect lending rate, this variable is measured as the ratio of the total loan or non-performing loans to total loans. An increase in the provision for loan losses implies a higher cost of bad debt write-offs. Given the risk-averse behaviour, banks face higher credit risk is likely to pass the risk premium to the borrowers, leading to higher borrowing rate. This variable expected to have a positive relationship with lending rate.

Bank liquidity Ratio

Liquidity is measured as a ratio of liquid assets to total assets (sometimes defined as liquid asset relative to short- term liabilities). Liquid assets refer to cash and deposit balances in other banks (including the reserve requirement in the central bank). This variable is expected to have a positive relationship with lending rate (Kuiptui 2014) Because excess liquidity is an implicit tax for the banks because of the opportunity cost associated with excess liquidity.

Market Concentration

HHI represent the industry characteristic which index of market concentration or competition. Market concentration measures the degree of the competition each bank faces in the market. Theoretically, competitive pressure led to competitive pricing thus leading to higher efficiency of interrmediation process and lower lending rate. However, Gambacorta (2004) is of the view that market concentration in the banking industry on lending rate can be ambiguous. A concentration that makes banks behave in an oligopolistic manner will lend to higher cost of borrowing and low return to depositors

while a concentration that arises because more efficient banks are replacing less efficient banks may lead to lower lending rate and higher deposit rate.

The Herfindahl Hirschman index (HHI) is the normally used to compute market concentration. The HHI ranges from 0 to 1 with higher values indicating high concentrated and less competitive banking industry. The two factors for computing Herfindahl Hirschman Index are:

The number of firms in industry and each firm's market share. The fewer the number firms in the industry the easier it is for them to co-ordinate high prices. Similarly, the greater the market share that a firm possesses the easier it is for that firm to set higher prices.

The index is calculated by squaring the market share of each firm competing in the market and then summing up the resulting numbers. The HHI is expressed as

$$HHI = \sum (Ta_{it}/ta_{t})2$$

Where tea the market share of the firm (ta) and Ta is the total industrial asset. In this particular context, the market share of each bank is calculated as its portion of loan and advance to the total industry loan. The HHI can range from zero to one. According to the international standards and a result of less than 0.1 is considered to be a highly competitive market, a result of 0.1 to 0.8 is considered moderately concentrated and a result that is greater than 0.8 is considered highly concentrated (Kari, 2007).

3.6. Operationalization of the Study Variables

This section presents the measurements that were employed to operationalize the study variables. For this study, lending rate was used as dependent variable which is determined

by many factors. And this factor was chosen by taking into account the availability of data and its influence on bank lending rate as measured in the literature

Definition of variables (Proxies) Symbols and Expected signs

Symbols	Variables	Measurement	Expected sign
Lrate	Lending rate	Average quoted lending rate	
GDP	Gross domestic product	Average annual rate of GDP growth	Negative / Positive
Er	Exchange rate	The value of the dollar	Positive
Tbrate	Treasury bill rate	91 day treasury rate	Positive
Inf	Inflation	Changes in CPI	Positive
Polr	Policy rate	Bank of Ghana Annual Policy Rate	Positive
Bksize	Bank size	Natural log of total assets	Positive
Mgteff	Management efficiency	Total cost / total revenue	Negative
Npl	Non-perform loan	Loan loss provision / total loan	Positive
Liqr	Liquidity Ratio	Liquid asset / total asset	
HHI	Herfindahl Hirschman index	Is defined as the sum of squares of the banks in the industry, where the market shares are expressed as fraction .	Positive

3.7. Justification of the Variable Used

3.7.1. Policy Rate

Bank of Ghana Policy Rate is the rate of interest at which universal banks borrow funds from the central bank and serves the marginal cost of the funds to the banks. Banks must therefore adjust their base rate to reflect the changes in the Bank of Ghana policy rate

3.7.2. Treasury Bill Rate.

Apart from holding a portion of the required reserved at a treasury bill rate, banks can also use Treasury bill as an investment option. The returns from this risk free and liquid investment influence the determinants of lending rate on the riskiest loans. As a result a risk premium is added to the Treasury bill rate to compensate for the risk interest in credits.

3.7.3. The Judicial System.

The judicial system in adjudicating commercial cases is quite laborious and costly. Thus, in case of loan defaults, it becomes very costly for banks take legal action to enforce the realization of the security package. Such costs are time factored into the loan pricing of the cordite to the borrower.

3.7.4. Macroeconomic Conditions

The general economic condition or environment, including inflation, GDP and exchange rate developments, the economic activity (thriving or booming economy or sluggish economy) influence business performance and also the capacity for loan repayments. This also takes into account when pricing loans.

3.7.5. Maturity transformation function

Part of the risk premium is also to compensate banks for the maturity transformation function they perform in accepting short term liquid deposit and investing them in long term loans.

CHAPTER FOUR

PRSENTATION OF RESULTS

4.1. Introduction

This chapter provides empirical evidence on the determinants of the universal bank lending rate in the Ghanaian banking industry. The basic model of the study contains from bank specific, industry specific c macroeconomic and central bank regulation factors.

4.2 Descriptive Statistics

Variables	Obs	Mean	Std. Dev	Min	Max
Lrate	208	0.255825	0.038944	0.182	0.328
GDP	208	0.080175	0.029997	0.039913	0.150071
Er	208	1.455063	0.407368	0.9235	2.2
Tbrate	208	0.166875	0.060936	0.102	0.247
Polr	208	0.1475	0.019573	0.125	0.18
Infl	208	0.121764	0.034931	0.087	0.196
Bksize	195	19.76115	1.261167	14.11698	22.33265
Mgteff	178	0.522485	0.239322	0.000336	0.997531
Npl	172	0.03805	0.056193	0.001072	0.533089
Liqr	192	0.117476	0.089608	0.000391	0.700105
HHI	208	0.077453	0.01079	0.066682	0.09856

From the descriptive statistics of the determinants of the lending rates over the period shows that lending rate over the period have a mean of 25% and a standard deviation of 3.8 with a minimum and maximum percentage of 18% and 32% respectively. This suggests a high level of lending rate within the period of study is 32%. The rate reflects various rates banks charge on their loans. The GDP, Tbrate, Polr and Infl have the

average of 8%, 16 % , 14% and 12% respectively, with minimum and maximum values of 3.99%, 10.2%, 12%, 8.7% and 15% , 24% 18% and 9.6%respectively . The Er, the exchange rate (value of the dollar) has an average rate of 1.45 with minimum and maximum rate of 0.92 and 2.2 respectively within the period of the study. Bank size also has an average of 19.76 with minimum of 14 and maximum of 22. While Mgteff, Npl and Liqr have an average of 52%, 3.8%, and 11% and minimum and maximum rate of 0.033%, 0.1072%,0.039% and 99.75%, 53%, 70% respectively. The banking concentration which is a proxy of HHI has a mean value of 7.74% with a minimum of 6.66% and

Maximum of 9.85%, respectively. This suggests that the Ghanaian banking industry is competitive.

4.3 Correlation Matrix

	Lrate	GDP	Er	Tbrate	Polr	Infl	Bksize	Mgteff	Npl	Liqr	HHI
Lrate	1										
GDP	-0.794	1									
Er	0.0508	0.2014	1								
Tbrate	0.67	-0.3206	0.3948	1							
Polr	0.7955	-0.4965	0.3106	0.917	1						
Infl	0.7962	-0.5802	-0.1803	0.652	0.8375	1					
Bksize	-0.002	0.1818	0.4706	0.1771	0.1263	-0.107	1				
Mgteff	0.0873	0.0437	0.0259	0.0579	0.1006	0.1068	0.133	1			
Npl	0.0142	-0.0511	0.0227	-0.0284	-0.0018	0.011	-0.1147	-0.0538	1		
Liqr	-0.0919	0.1413	0.0973	-0.0226	-0.0111	-0.0559	-0.0663	-0.0007	-0.0144	1	
HHI	-0.0041	-0.1719	-0.5206	-0.5598	-0.4957	-0.1897	-0.2478	-0.0309	-0.0126	-0.1072	1

The correlation analysis is presented in the table above shows linear association between the pairs of variables. It shows that with the exception of GDP, bank size, liquidity ratio and HHI, the result is positively correlated with the lending rate. The correlation matrix also shows that policy rate, Treasury bill rate and inflation are highly correlated. Treasury

bill rate and inflation exhibit high level of correlation with the policy rate, therefore they are run in the separate model and policy rate in another model

4.4. Diagnostic Tests for the Regression

No	Test	Diagnostic with treasury bill rate and Inflation	Diagnostic with policy rate
	Normality	Shapiro Wilk = 5.503 P- Value = 0.0000	Shapiro-Walk Statistic5.820 P-value 0.0000
2	Heteroskadasticity	Chiber2 = 0.000 P- Value = 1.000	Chibar 2= 0.000 P- value 1.0000
3	Hausman	Chi2 = 15.38 P > chi2 = 0. 0810	Chi2 (8). 10.76 P-value 0.0719
4	Multicorrelinearity	VIF = 2.05	VIF 1.66
5	Autocorrelation	Wooldridge = 887.38 P- Value = 0.0000	Wooldridge Statistic 1040.459 P-value 0.0000
6	Skewness/ Kurtosis	Chi2 (2) 4.18 Prob > Chi2 0.1235	Chi2 7.70 Prob > 0.0213

The above table present results of the diagnostic tests. The null hypothesis of the normality of residual is rejected if the p-value is less than 0.05 significant levels. The results show that Heteroskedasticity test was performed using Wald test. The test p-value is greater than 0.05 suggesting that there is a presence of heteroscedasticity in the model. We also

examined the presence of multicollinearity between the independent variables using Variance inflation factor (VIF) which is computed as the inverse of (1- R2). The rule of the thumb for the VIF state that, multicollinearity exists if, the VIF is more than 10 and if 1/ VIF is greater than 0.1. The VIF obtained from the estimation are all below the 10 and 0.1 which are the threshold, therefore there is no multicollinearity. From the Hausman test, the p-value is greater than 5% level, suggesting that random fixed effect is appropriate

4.5. Regression results

Due to the multicollinearity between the three variables; policy rate, treasury bill rate and inflation we estimated treasury bill rate and inflation in model one while model two contain policy rate

VARIABLE	VIF	1/ VIF
Polr	59.94	0.016683
Infl	21.47	0.46469
Tbrate	13.47	0.072196
Er	4.44	0.225298
GDP	2.66	0.376250
HHI	2.22	0.451184
Bksize	1.36	0.733071
Mgteff	1.09	0.920629
Liqr	1.08	0.928875
NPL	1.03	0.966881
	Mean VIF 10.92	

	Model 1				Model 2			
Variable	Coef.	Std Err	Z	P |Z| value	Coef.	Std Err	Z	P|Z| value
GDP	-0.590524	.03244393	- 18.20	0.0000	-0.6861706	.0315828	-21.73	0.0000
Er	0.020186	.0035471	8.18	0.0000	0.0090358	.00361	2.50	0.012
Tbrate	0.18563	.0245626	7.56	0.0000				
Polr					1.295648	0.544898	23.78	0.0000
Infl	0.5332103	.0360102	14.81	0.0000				
Bksize	0.00342	.0005739	5.56	0.0000	0.0013794	.0007297	1.89	0.059
Mgteff	0.0030591	.0033218	0.92	0.257	0.0033349	.0032128	1.01	0.299
Npl	0.0216903	.019149	1.13	0.257	0.0171855	.0225103	0.76	0.445
Liqr	0.0098899	.0087848	1.13	0.260	0.0084901	.010236	0.83	0.406
HHI	1.263942	.0777565	16.26	0.0000	0.9776606	.0719758	13.58	0.0000

R- Square = 0.9987 R- square = 0.9966

Wald chi2 (9) = 124285.75 Wald chi2 (8) = 42860.16

Prob > chi2 = 0.000 Prob > chi2 = 0.0000

Economic Indicators in Ghana

Year	Lending rate	GDP	INFLATION	EXCHANGE RATE	POLICY RATE	TREASURY BILL RATE
2006	23.3	6.1	10.2	0.9	12.5	9.9
2007	24.2	6.5	10.7	0.9	13.5	10.3
2008	27.3	8.4	16.5	1.1	17.0	10.3
2009	32.8	4.0	19.3	1.4	18.0	22.4
2010	27.6	7	15.8	1.5	13.5	11.9
2011	18.2	14.4	8.7	1.8	15.0	23.1
2012	25.7	7.1	9.2	1.9	15.0	23.1
2013	25.2	7.1	11.4	2.2	16.0	18.8

Source: Bank of Ghana Annual report.

4.5.1. GDP Growth

This variable has a negative relationship with the dependent variable which implies that an increase in the variable will not result in an increase in the lending rate vice visa. This implies that a unit increase in GDP will result in a -0.590524 (model 1) and – 0.6861706 (model 2) decrease in the lending rate respectively. And its significance in both models. This means that in Ghana, universal banks do not base their lending rate on GDP. This can be seen from the economic indicator table above that in 20008 to 2009. GDP reduced

from 8.4 to 4.0 but banks' lending rate increased from 27.3 to 32.8. This result is inconsistent with the findings of Gambacorta (2004), who state that lending rates have a positive relationship with GDP. He is of the view that when country economic condition (GDP) is flourishing, many investors will be willing to invest in that particular country and this will result in increase the demand for credit, where lenders will take advantage by asking for higher rate. In addition, when the economy is booming, it generally leads to a rise in inflation which will finally lead to an increase in lending rate to space with inflation.

4.5.2. Exchange Rate (Er)

With regard to the relationship between lending rates and exchange rate, the result shows a positive relationship and its statistically significant in both models. This implies that a unit increase in exchange rate (Er) will result in 0.020186 (model 1) and 0.0090358 (model 2) increase in lending rates. The result shows that the lending rate will increase with the appreciating US Dollar. This suggests that banks would be forced to increase the lending rate to accommodate for the losses in the local currency.

4.5.3. Treasury Bill Rate. (Tbrate)

This variable shows a positive relationship with the dependent variable and it's statistically significant at the 1 % level. This implies that a unit increase in the treasury bill rate will result in (0.18563) increase the rate of the dependent variable. This is because banks will be willing to invest their money in Treasury bill, which comes with risk free rate than lending to their customers who some may not pay. This can be seen from the economic indicators table above that in 2009 when the Treasury bill rate reduces from 22.4 to 11.9, lending rate is also reduced from 32.8 to 27.6. The outcome is consistent with the findings of (Azeez et al, 2013 and Ngugi, 2001).

4.5.4. Policy Rate (Polr)

This variable has been found to be positive, statistically significant with lending rate. This implies that when Central Bank increases their policy rate, universal banks also follow the same trend by increasing their lending rate. This can be seen from in economic indicators table that, from 2009 to 2010 Central Bank reduce their policy rate from 28 to 13.5, universal banks also reduce their lending rate from 32.8 to 27.6. This is because policy rate is the rate that universal banks borrow from the Central bank and will therefore not lend to their customer below that price. The finding is consistent with the finding of (Folawewo and Tennant, 2008).

4.5.5. Inflation (Infl)

The results indicate a positive relationship between lending rates and inflation and it is statistically significant at 1%. The result suggests that the lending rate of universal banks is more sensitive to inflationary pressure. This implies that a unit increase in inflation will result in (0.5332103) increase in the value of the dependent variable to keep the space with the inflation and vice visa. This can be seen from the economic indicators table that, when inflation was 19.3, lending rate was 32.8 in 2008 but when in 2010 when inflation reduces to 15.8 lending rate also reduce to 27.6. The result is consistent with existing studies and in line with the theory. High inflation is considered undesirable and creates uncertainty which result in the high default rate of banks. This finding is consistent with study of De Geogorio and Sturzenegger (1997), Huyben & Smith (1999) Bawumial et al (2005), Aboagye et al (2008) and Mensah and Abor (2012

4.5.6. Bank Size. (Bksize)

The result of this variable indicates a positive relationship with the dependent variable and its statistically significant at 1% in model 1 and statistically significant at 5% in model 2. The coefficient shows that, a unit increase in bank size will result in 0.00342 (model 1) and 0.0013794 (model 2) increase in the lending rate respectively. The result shows that, large banks tend to charge high lending rate as compared to smaller banks. The evidence here suggests that, large banks do not benefit from the scale of economies which will result in lower cost and lead to lower lending rate. Banks may be suffering from diseconomies of scales which have contributed to the high cost and lending rate. Generally, large banks charge high lending rate to compensate for their investment in technology and branch networks. In Ghana, the largest banks have the largest branch networks and have made significant investment in technology. This finding is consistent with that of Abogye et al (2008) and Mensah & Abor (2012).

4.5.7. Management Efficiency (Mgteff)

This variable has a positive relationship with lending rate, but it's statistically insignificant with lending rate in both models. The coefficient shows that a unit increase in this variable will result in 0.0030591 (model 1) and 0.00333490 Model 2) increases in the lending rate respectively. This implies that an increase in this ratio means a deteriorating of management efficiency, which result in an increased the operational cost of the bank which will lead to high lending rate. This is because Management will pass this cost to their customers informing of high lending rate. Bawumia et al (2005) indicates that high operating cost, which is normal due to labour costs and bank's determination to maintain high profit margins are the two bank specific which contribute significantly to wider

margin interest spread their increase the rate that banks lend to their customers. This finding is consistent with the finding of (Sarpong et al, 2011)

4. 5.8. Non-performing Loan loses

With regard to the relationship between lending rates and non- performing loans, the result shows a positive relationship with both models, this implies that an increase in this variable will cause the dependent variable to increase. This implies that financial institution tends to pass on bad debt expenses, customers in the form of high lending rate. This finding is inconsistent with the findings of Aboagye et al (2008) but is consistent with the findings of Bawumia et al (2005)

4.5.9. Bank Liquidity Ratio

The relationship between bank liquidity ratio and lending rate is positively related in both models. The results show that when bank liquid asset increase, bank lending rate moves upwards since they need to be compensated for keeping more liquid assets. One of the possible explanations for this relationship is the low return on highly liquid asset. That is banks with higher amount of highly liquid assets try to compensate for the low return from this through higher lending rate. This result is consistent with that of Abdul Arim, Azman-Saini & Adbul- Karim (2011)

4.5.10. Market Concentration

Under the industry level specific characteristic, the findings show that bank concentration tends to affect universal bank lending rates in Ghana. The Herfindahl index (HHI) which is a proxy of concentration, suggests a significant positive relationship with lending rate in both models. When the level of an index is highest in the banking industry, it implies that the banking industry is highly concentrated while with low level of the index means less

concentration. Therefore, the significant positive effect of the HHI on the lending rate, suggesting that as banking industry becomes more concentrated the tendency for banks to charge monopolistic rent is high and thus lead to higher lending rate. This is in consonance with the assertion of Bain (1951), that market power enables firms to pay less on their liability charge more on their assets thereby increase the rate on the loan

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

This chapter captures the summary of the main findings, possible recommendations based on the findings and the overall conclusion of the study. The study sought to assess the determinants of the lending rate of universal banks in Ghana with emphasis on twenty six (26) selected universal banks as the focus of the study.

5.2. Summary of Findings

The study assessed the determinants of the universal bank lending rate in Ghana over the period 2006 to 2013. The study revealed that the minimum and the maximum lending rate of universal banks range from 18% to 32% respectively over the period. From the findings, the study revealed that Treasury bill rate, bank size and inflation influence lending rate. The study finds that statutory reserve requirement and policy rate also influence the cost of the loan from universal banks therefore factor in determination of universal bank lending rate. The banks are also to consider HHI, which a proxy for market concentration in the determination of their lending rate.

5.3. Conclusion

This study provides some insight from empirical viewpoints based on panel data analysis. The study uses 26 banks from 2006- 2013 to investigate the determinants of the universal bank lending rate in Ghana. The result indicates that exchange rate, Treasury bill rate, inflation, Policy rate, reserved requirement, Non-performing loans management, efficiency, Bank size, Liquidity rat, market competition, which is a proxy of HHI having a

positive relationship with the dependent variable while GDP, have a negative relationship with the dependent variable.

5.4. Recommendations

Based on the findings of this study, the following recommendation is hereby proffered:

It is imperative for universal banks develop some lending policies towards ensuring effective lending administration and management in their operations. Realizing the impact of high lending rate on individuals, business and the economy, the MPC should improve effort in keeping inflation, Policy rate, and the Treasury bill rate at the barest minimum without creating undue instability in the economy.

It also recommends that, macroeconomic stability is critical to reduce the markets perceived risks for which it seeks to compensation in high lending rate. As principal determinants of macroeconomic stability, fiscal policy has a key role to play in reducing risks.

Universal banks should manage their internal inefficiencies, high operating cost so as to reduce their cost of operation which leads to low lending rate.

The study recommends that universal banks should be keen of market factors such as competition and risk and management performance when determine lending rate as they existed a positive relationship between lending rates and the factors that determine lending rate of universal banks in Ghana.

5.5. Recommendation for further study.

The study investigates the determinants of the lending rate of universal banks in Ghana. A future research should also be carried out on the impact of high lending rate on the profitability of universal banks in Ghana.

REFERENCES

Abdu l Karim, Z., Azman-Saini , W. N. W., & Abdul Karim, B. (2011). Bank lending channel of monetary policy: Dynamic panel data study of Malaysia. *Journal of Asia-Pacific Business, 12 (3)*, 225-243.

Aboagye, A. Q., Akoena, S. K., Antwi-Asare, T. O., & Gockel, A. F. (2008). Explaining Interest Rate Spreads in Ghana*. *African Development Review, 20 (3)*, 378-399.

Abusharba, M. T., Triyuwono, I., Ismail, M., & Rahman, A. F. (2013). Determinants of Capital Adequacy Ratio (CAR) in Indonesian Islamic Commercial Banks. *Global Review of Accounting and Finance, 4 (1*), 159-170.

Agu, C.C. (1992). Analysis of the Determinants of the Nigerian Banking Systems Profits and Profitability Performance. Savings and Development XVI 4. And Economic Development." *Policy Research Working Paper 2408*. Washington, DC: World Bank

Aisen, A., & Franken, M. (2010). Bank credit during the 2008 financial crisis: A cross-country comparison. IMF Working Papers, 1-25.

Akinlo, A. E., & Owoyemi, B. O. (2012). The Determinants of Interest Rate Spreads in Nigeria: An Empirical Investigation. Modern Economy, 3 (07), 837.

Altman, E. I., & Saunders, A. (1997). Credit risk measurement: Developments over the last 20 years. *Journal of Banking & Finance, 21 (11)*, 1721-1742.

Alu, A. A., Amidu, M., Osei, K. A., & Kuipo, R. (2014). The effect of funding strategy on the lending patterns of banks in Ghana. *African Review of Economics and Finance, 6 (2)*, 43-68.

Amidu, M., & Wolfe, S. (2013). The impact of market power and funding strategy on bank-interest margins. *The European Journal of Finance, 19 (9),* 888-908.

Amidu, M., Hinson, R., Амiду, M., & Хінсон, P. (2006). Credit risk, Capital Structure and lending decisions of banks in Ghana.and Competitive Credit Markets." *International Economic Review (28),* 671-689.

Anyanwu, J. C. (1990). Monetary Economics Theory Policy and Institutions Hybrid Publishers Ltd. 247- 274

Athanasoglou, P. P., & Daniilidis, I. (2011). Procyclicality in the banking industry: causes, consequences and response. Bank of Greece, manuscript in Greek.

Baas, T., & Schrooten, M. (2005). Relationship Banking and SMEs: A theoretical Analysis, German Institute of Economic Research, DIW-Discussion papers, 469.

Bain, J. S. (1951). Relation of profit rate to industry concentration: American manufacturing, 1936-1940. *The Quarterly Journal of Economics,* 293-324.

Barajas, A., Steiner, R., & Salazar, N. (1999). Interest spreads in banking in Colombia, 1974-96. IMF Staff Papers, 196-224.

Bashir, A. H. M. (2001). Assessing the performance of Islamic banks: Some evidence from the Middle East.

Bashir, A. H. M. (2003). Determinants of profitability in Islamic banks: Some evidence from the Middle East. Islamic economic studies, 11 (1), 31-57.

Bawumia, M., Belnye, F., & Ofori, M. E. (2005). The determination of bank interest spreads in Ghana: An empirical analysis of panel data. Bank of Ghana, Working Paper SeriesWp/Bog-2005/09.

Beck, T., & Hesse, H. (2006). Bank efficiency, ownership, and market structure: why are interest spreads so high in Uganda?. World Bank Policy Research Working Paper, (4027).

Berger, A. N. H. (1989) The Price Concentration Relationship in Banking Rev. Econ. Stat.71, 291-299

Berger, A. N., & Udell, G. F. (2006). A more complete conceptual framework for SME finance. *Journal of Banking & Finance, 30 (11),* 2945-2966.

Besanko, D., & Thakor, A. V. (1987). Collateral and rationing: sorting equilibria in monopolistic and competitive credit markets. International economic review, 671-689.

Besley, T. (1994) "How do Market Failures Justify Intervention in Rural Credit Market", *Research Observer, 9 (1).* 27-47

Blanc-Brude, F., & Strange, R. (2007). Risk pricing and the cost of debt in public-private partnerships: Evidence from the syndicated loan market. Research Paper, 45.

Boot, A. W. (2000). Relationship banking: What do we know?. *Journal of financial intermediation, 9 (1),* 7-25.

Boot, A. W., & Thakor, A. V. (2000). Can relationship banking survive competition?. The journal of Finance, 55 (2), 679-713borrowers. *Journal of Banking and Finance, (22*), 1355-1383.

Boyd, J. H. & B. Champ, (2006) "Inflation, Banking and Eco-nomic Growth," Economic Commentary, Ohio, USA: Federal Bank of Cleveland.

Brock, P. L., & Suarez, L. R. (2000). Understanding the behavior of bank spreads in Latin America. *Journal of development Economics, 63 (1),* 113-134.

Buchs, T. D., Mathisen, J., & International Monetary Fund. (2005). Competition and efficiency in banking: Behavioral evidence from Ghana. Washington, D.C: International Monetary Fund.

Carletti, E., Cerasi, V., & Daltung, S. (2006). Multiple-Bank Lending: Diversification and Free-riding in Monitoring, Working Paper, Department of Statistics: Universita degli Studi DI Milano-Bicocca.

Chirwa, E. W., & Mlachila, M. (2004). Financial reforms and interest rate spread in the commercial banking system in Malawi. IMF Staff papers, 96-122.

Chodechai, S. (2004).Determinants of Bank Lending in Thailand: An Empirical Examination for the years 1992 to 1996, Development, Economics and Policy. Vol. 33

Das, A., & Ghosh, S. (2007). Determinants of credit risk in Indian state-owned banks: An empirical investigation. ECONOMIC ISSUES-STOKE ON TRENT-, 12(2), 27.

De Gregorio, J., & Sturzenegger, F. (1997). Financial markets and inflation under imperfect information. *Journal of Development Economics, 54 (1),* 149-168.

Degryse, H., & Van Cayseele, P. (2000). Relationship lending within a bank-based system: Evidence from European small business data. *Journal of financial Intermediation, 9 (1),* 90-109.

Degryse, H., Masschelein, N., & Mitchell, J. (2004). SMEs and bank lending relationships: The impact of mergers. National Bank of Belgium working paper, (46).

Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. The World Bank Economic Review, 13 (2), 379-408. Determination in an Error Correction Model

Dewenter, K. L., & Hess, A. C. (2000). Risks and Returns in Relationship and Transactional Banks: Evidence from Banks' Returns in Germany, Japan, the UK, and the US. Performance of Financial Institutions: Efficiency, Innovation, Regulation, 443.

DeYoung, R., Gron, A., & Winton, A. (2005). Risk overhang and loan portfolio decisions.

Diamond, D. W. (1984). Financial intermediation and delegated monitoring. The Review of Economic Studies, 51 (3), 393-414. during crisis.

Elsas, R., & Krahnen, J. P. (2000). Collateral, default risk, and relationship lending: an empirical study on financial contracting (1999/13). CFS Working Paper.

Ewert et al (2000) Analysis of Credit Marketing theory, a larger perspective, 1st ed., 13-21, Unity Press limited

Ewert, R., Schenk, G., & Szczesny, A. (2000). Determinants of bank lending performance in Germany. Schmalenbach Business Review, 52 (10), 344-362.

Ezirim, C. B. (2005). Financial Dynamics, Principles, Techniques and Application, Port Harcourt: Markowitz Center for Research.

Ezirim, F. (2005) Impact of bank Lending on the liquidity of banks in Nigeria, Journal, 2, 44-56, IJJS Publication.

Fama, E. F. (1985). What's different about banks?. Journal of monetary economics, 15 (1), 29-39.

Felicia, O. O. (2011). Determinants of Commercial Banks Lending Behavior in Nigeria. *International Journal of Financial Research, 2 (2),* 1-12.

Folawewo O. A., & Tennant, D. (2008), Determinants of interest spreads in Sub- Sub-Sarahan African countries: a dynamic panel analysis. Unpublished

Folawewo, A. O., & Tennant, D. (2008). Determinants of interest rate spread in Sub-Saharan African Countries: A dynamic panel Analysis.

Gambacorta, L. (2004). V How do banks set interest rates? V. NBER, Working paper, 10295.

Gockel, A. F. and Mensah, S. (2006), Commercial Bank Interest Rate Spread in Ghana: Determinants and Policy Implications, TIPCEE Working Paper, Accra.

Godlewski, C. J., & Ziane, Y. (2008). How many banks does it take to lend? Empirical evidence from Europe. Empirical Evidence from Europe.

Grenade, K. (2007). Determinants of commercial bank interest rate spread: Some empirical evidence from the Eastern Caribbean Currency Union. Eastern Caribbean Central Bank (ECCB) working papers.

Hinson, R. (2004). The importance of service quality in Ghana's banking sector. *The Marketing Challenge, 7 (3),* 16-18.

Ho, T. S., & Saunders, A. (1981). The determinants of bank interest margins: theory and empirical evidence. *Journal of Financial and Quantitative analysis, 16 (04),* 581-600.

Huybens, E., & Smith, B. D. (1999). Inflation, financial markets and long-run real activity. *Journal of Monetary Economics, 43(2),* 283-315.

Jesus, S., & Gabriel, J. (2006). Credit cycles, credit risk, and prudential regulation.

Jiangli, W., Unal, H., & Yom, C. (2004). Relationship Lending, Accounting Disclosure, and Credit Availability during Crisis. FDIC Center For Financial Research, 2005-08.

Jiménez, G., & Saurina, J. (2005). Credit cycles, credit risk and prudential regulation (No. 0531). Banco de España.

John, P. O. (1998). A Practical Guide to Bank Lending and Administration. Lagos: Du Prince and Pal.

Joseph, Q. U. A. R. S. H. I. E. (2014). Impact of Internal And External Factors on Small And Medium Scale Enterprises' access to Finance In Ghana (Doctoral Dissertation, Ritsumeikan Asia Pacific University). *Journal of Asia-Pacific Business, 12 (3)*. 225-243.

Kari, H., & Grenade, I. (2007) Determinants Of Commercial Banks Interest Rate Spreads: Some Empirical Evidence from the Eastern Caribbean Currency Union

Kiptui, M. C. (2014) Determinants of Interest Rate Spread: Some Empirical Evidence from Kenya's Banking Sector. *International Business Research, 7 (11),* 94

Kwakye, J. K. (2014). High Interest Rates in Ghana: A Critical Analysis. IEA Ghana.

Le, Trung Hai. "Market concentration and competition in Vietnamese banking sector." Available at SSRN 2514713 (2014).

Lindgren, C. J., Garcia, G. G., & Saal, M. I. (1996). Bank soundness and macroeconomic policy. International Monetary Fund.

Looney, R. E., & Frederiken, P. C. (1997). Government Investment and Follow-on Private Sector Investment in Pakistan, 1972-1995. *Journal of Economic Development, 22 (1),* 91-100

Lowe, P. (1992). The impact of financial intermediaries on resource allocation and economic growth. Economic Research Department, Reserve Bank of Australia.

Machauer, Achim and Weber, Martin, "Bank behavior based on internal credit ratings of borrowers", *Journal of Banking & Finance, 22* (10-11), 1355-1383, 1998.

Machauer, A., & Weber, M. (1998): Bank behavior based on internal credit ratings of

Maina, M., Gakure, R., & Gekara Mouni, A. W. (2013). Market structure and interest rate spread among Kenyan commercial banks. 3(12), 1290-1296

Malede, M. (2014). Determinants of Commercial Banks Lending: Evidence from Ethiopian Commercial Banks. *European Journal of Business and Management, 6 (20),* 109-117.

Mansor H. Ibrahim, 2006. "Stock prices and bank loan dynamics in a developing country: The case of Malaysia," *Journal of Applied Economics, Universidad del CEMA, 0,* 71-89.

Maudos, J.. & Fernandez De Guevara, J. (2004). "Factors explaining the interest margin in the banking sectors of the European Union." *Journal of Banking & Finance 28.(9).* 2259-2281.

Mensah, E. (2005). Indicators for Computing Interest Rates. TIPCEE Accra, on behalf of the Association of Bankers.

Mensah, S., & Abor, J. Y. (2014). Agency Conflict and Bank Interest Spreads in Ghana. *African Development Review, 26 (4),* 549-560.

Messai, A. S., & Jouini, F. (2013). Micro and macro determinants of non-performing loans. *International Journal of Economics and Financial Issues, 3(4),* 852-860.

Mpuga, P. (2004, March). Demand for credit in rural Uganda: Who cares for the peasants?. In A paper presented at the conference on growth, poverty reduction and human development in Africa. Centre for the Studies of African Economies.

Navneet, S., Boopen, S., Sawkut, R., Shalini, R., & Binesh, R. (2009). Interest Rate Spread

Neuberger, D. (1998). Industrial organization of banking: a review. *International Journal of the Economics of Business, 5 (1),* 97-118.

Ngugi, R. (2001). An empirical analysis of interest rate spread in Kenya (106) Nairobi: African Economic Research Consortium.

Obamuyi, T. M. (2013). Determinants Of Banks' Profitability in A Developing Economy: Evidence From Nigeria. Organizations and markets in emerging economies, (2), 97-111.

Olusanya, S. O., Oyebo, A. O., & Ohadebere, E. C. (2012). Determinants of lending behaviour of commercial banks: Evidence from Nigeria, a co-integration analysis (1975-2010). *Journal of Humanities And Social Science, 5 (5),* 71-80.

Pandey, I. M. (1999). Financial Management–Vikas Publishing House Pvt. Ltd

Perez, P. (2011). Determinants of Interest Rate Spreads in Belize. Central Bank of Belize.

Poghosyan, T. (2012), Financial Intermediation Costs in Low-Income Countries: The Role of Regulatory, Institutional, and Macroeconomic Factors. IMF Working Paper, WP/12/140

Prompitak, D. (2009). The impacts of bank mergers and acquisitions (M&As) on bank behaviour (Doctoral dissertation, The University of Birmingham).

Ransford Quarmyne Churchill, Collins Owusu Kwaning, Owusu Ababio (2014). The Determinant of Bank Interest Rates Spreads in Ghana. International Journal of Economic Behavior and Organization. Vol. 2, No. 4, pp. 49-57. doi: 10.11648/j.ijebo.20140204.11

Robinson, J. W. (2002). Commercial Bank Interest Rate Spreads in Jamaica: Measurement, Trend and Prospects. Kingston: Bank of Jamaica.

Rose, P. S. & Hudgins, S.C. (2008). Bank Management & Financial Series 7th Edition; McGraw Hill/Irwin.

Santos, J. A., & Farinha, L. A. (2000). Switching from single to multiple bank lending relationships: determinants and implications (No. 83). Bank for International Settlements.

Sarpong, D., Winful, E. C., & Ntiamoah, J. (2011). Determinants of wide interest margins in Ghana: panel EGLS analysis. Available at SSRN 1908951.

Sergii, P. (2009). Inflation And Economic Growth: The Non-Linear Relationship. Evidence From Cis Countries (Doctoral dissertation, Kyiv School of Economics).

Stein, J. C. (2000). Information production and capital allocation: Decentralized vs. hierarchical firms (No. w7705). National Bureau of Economic Research.

Stiglitz, J. E., & Weiss A. M. (1981) Credit Rationing in Markets with imperfect Information. American Economic Review. 313-440 (B/CHANGE THE H TO W)

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. The American economic review, 393-410.

Suwanaporn, C. (2003). Determinants of bank lending in Thailand: an empirical examination for the years 1992 to 1996. Peter Lang.

Talavera, O., Tsapin, A., & Zholud, O. (2012). Macroeconomic uncertainty and bank lending: the case of Ukraine. Economic systems, 36 (2), 279-293.

Talavera, O., Tsapin, A., & Zholud, O. (2012). Macroeconomic uncertainty and bank lending: the case of Ukraine. Economic systems, 36 (2), 279-293.

Talavera. O., Tsapin, A., & Zholud, O. (2006) Macroeconomic uncertainty and bank.

Thakor, A. V. (1995). Financial intermediation and the market for credit. Handbooks in Operations Research and Management Science, 9, 1073-1103.

Thomas, S. Y., Ho, T., & Saunders, A. (1981). “The Determinants of Bank Interest Margins: Theory and Empirical Evidence”, J. Finance. Quantity. Anal. 16(04):581-600.

Uchida, H., Udell, G. F., & Watanabe, W. (2008). Bank size and lending relationships in Japan. Journal of the Japanese and International Economies, 22 (2), 242-267.

Usman, S. (1999). Bank regulation and supervision in Nigeria. The Nigerian Banker, 7-9.

Van den Heuvel, S. (2000). The banker capital channel of monetary policy. Working paper. New Haven, Conn.: Yale University.

Van der Heuvel, S.J (2002). Does bank Capital matter for monetary transmission? FRBNY economics policy review 8(1), 259-266.

Von Thadden, E. L. (2004). Asymmetric information, bank lending and implicit contracts: the winner's curse. Finance Research Letters, 1 (1), 11-23.

Wong, K. P. (1997). On the determinants of bank interest margins under credit and interest rate risks. Journal of Banking & Finance, 21 (2), 251-271.

Years 1992 to 1996, Development, Economics and Policy. Vol. 33

Yu, M. T., Shen, C. H., & Chen, C. C. (1995). Interest Rate Risk and Duration Structure of Banks in Taiwan. Journal of Management Science, 12, 169-193.

APPENDIX

Model one (1)

Estimated Result

	Var	Sd. Sqrt (var)
Lrate	0.0016456	0.0405664
E	0.0001104	0.0105064

Breusch and Pagan Langrangian Multiplier test for random effect

Normality test

Variable	Obs.	W	V	Z	Prob >Z
	161	0.90918	11.230	5.503	0.0000

Shapiro Wik W test for normal data

Skewness/ Kurtosis test for normality (joint)

Variable	Obs	Pr(Skewness)	Pre(Kurtosis)	Adj chai2(2)	Prob> chi2
	161	0.0424	0.9960	4.18	0.1235

Muticollinearity

Variable	VIF	1/ VIF
Tbrate	3.92	0.366370
Infl	3.64	0.450073
Er	2.51	
HHI	1.94	0.488646
Gdp	1.92	0.572880
Bksize	1,35	0.929050
Liqr	1.08	0.941667
Mgteff	1.07	0.980224
Npl	1.03	

Mean VIF 2.05

Model 2

Hetroskadasticity

Estimated Result

	Var	Sd. Sqrt (var)
Lrate	0.0016456	0.0405664
E	0.0001376	0.0117296

Breusch and Pagan Langrangian Multiplier test for random effect

Normality test

Variable	Obs.	W	V	Z	Prob >Z
	161	0.8959	12.910	5.820	0.0000

Shapiro Wik W test for normal data

Skewness/ Kurtosis test for normality (joint)

Variable	Obs	Pr(Skewness)	Pre(Kurtosis)	Adj chai2(2)	Prob> chi2
	161	0.0039	0.8238	7.70	0.0213

Wooldridge test for autocorrelation in panel data

H_o : no first order autocorrelation

F (1, 23) = 1040.459

Prob > F 0.0000

Hausman Test

Test: H_o difference in coefficients not systematic

Chi2 (8) = (b –B)^{1} (vb –VB)$^{\square}$ (-1) (b-B)= 10.76

Prob > chi2 = 0.2158

Muticolinearlity

Variable	VIF	1/ VIF
Polr	2.73	0.366370
Gdp	2.22	0.450073
HHI	1.75	0.488646
Er	1.35	0.572880
Bksize	1,08	0.929050
Liqr	1.06	0.941667
Npl	1.92	0.980224

Mean VIF = 1.66