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Analysis of the Impact of Basel Accord on Asset Quality of Banks in Ghana

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Abstract
Universal banks are the main controller of the financial system in Ghana performing financial intermediation. They control greater portion of the investment funds from domestic deposits and are the main creditors of the corporate bodies, SMEs and individual investors. This makes commercial banks exposed to the risk inherent in lending. The study investigated on the analysis of the impact of Basel accords on asset quality in banks in Ghana. The purpose of this study is to ascertain how banks manage non-performing assets using Basel accord principle that have being implemented by bank of Ghana and to know the impact of the Basel accord on non-performing assets. The study adopted a descriptive survey design. Through the use of descriptive and inferential statistics, this design was considered the best strategy to accomplish the objective of the study. The study targeted a population of 27 commercial banks in Ghana, using a period of 2008 to 2015. The study used primary data and secondary data to achieve. The study concluded that most banks have a sound credit risk management system and the senior management banks develop policies and procedures for identifying, measuring, monitoring and controlling credit risk. Banks implemented credit policies using Basel accord principles. The research also concluded that banks have implemented the guiding principles to great extent.
Keywords: Basel Accord Principles, Non-Performing Assets, SME's

1.0 Background of the Study

Commercial banks are the most important intermediaries of funds allocation and deposit mobilization. Commercial banks serve the role of allocating excess funds from mobilization to allocation. In Ghana, the banking system contributes to about 70% of the financial sector (Bawumia et al., 2008). For this reason, the banking sector forms an important part of the economy and its mal-functioning may have ripple effect on the growth of the economy. The Bank of Ghana is therefore, mandated with the responsibility of ensuring that the financial system is stable to ensure that it serves as facilitator for wealth creation, economic growth and development. These assets include physical property such as building, land, furniture, and equipment and financial property; which are a bulk of a bank's assets including loans, reserves and investment securities. Banks use these assets to generate financial claims, giving loans to individuals and corporations, investing in securities and keeping part as reserves with central banks.

The banking sector in Ghana has experienced up and downs in assets quality since independence, this resulted from the implementation different policies by the government. Among them are the bank of Ghana determination of structure of interest rate of banks, government determination of sectorial allocation of loans, the Financial Sector Adjustment Programme (FINSAP) etc, despite the intervention of FINSAP to rescue the banking sector, the banking sector still continue to perform poorly in asset quality. Risk is inherent in all aspects of commercial and non-commercial operation; however, for financial institutions, credit risk is an essential factor that should be managed, credit risk is the possibility that a borrower or counter party may fail to meet its obligations in accordance with agreed terms (Duffie and Singleton, 2003). Due to asymmetric information risk is inherent in bank assets; this inherent risk opens the assets of banks to uncertainties.

In the battle to reduce the vulnerability of bank assets to the risk associated with its assets, the bank of Ghana adopted Basel Accord 1 to deal with depleting assets in the banking industry after failure of many other policies to address the problem.

1.1 Problem Statement

The banking sector has undergone rapid growth and major structural transformations, which brought new opportunities and risk. This has led to the implementation of many policies to strengthen the regulatory and supervisory framework and financial infrastructures (IMF, 2011).

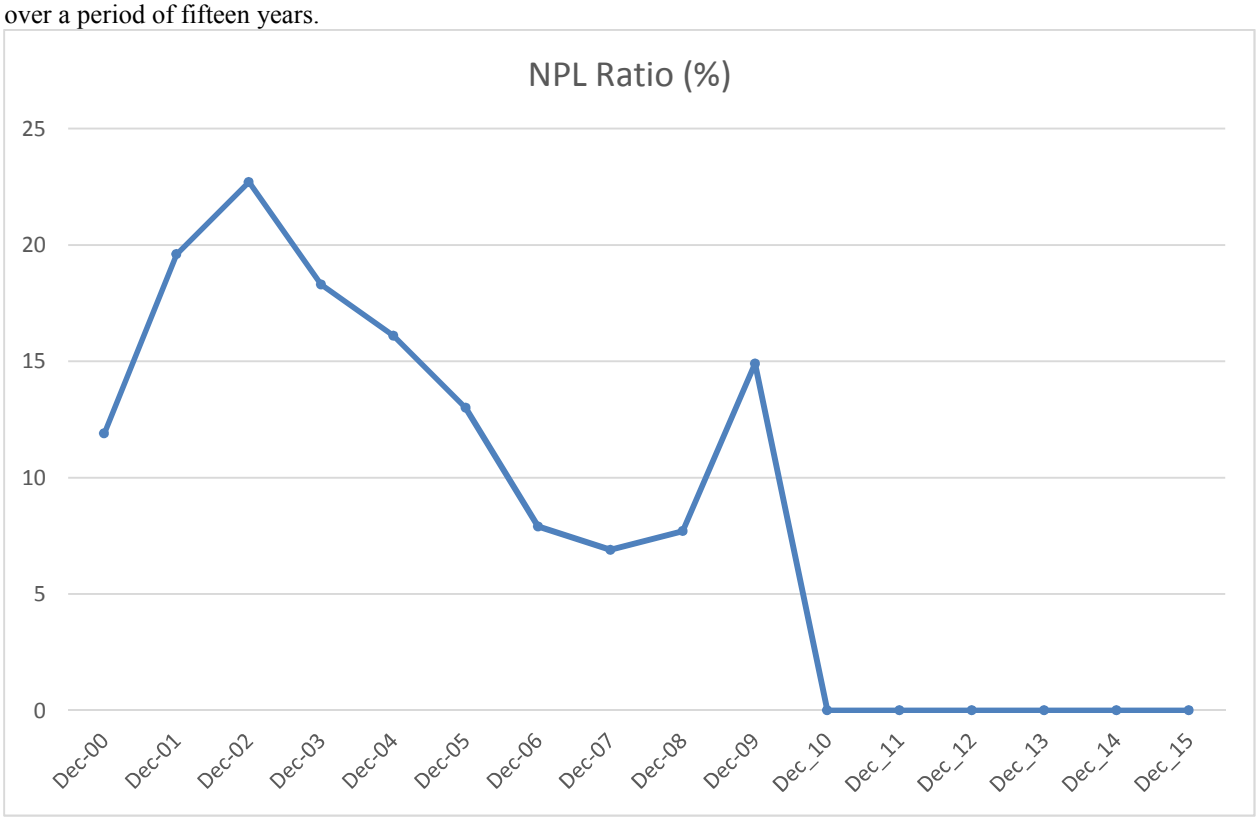
In spite of the implementation of these policies, the banking sector is still characterised with ups and downs with non-performing loans. The principal concern of Basel II was to help manage credit, but since adopted by Ghana, the problem has not been resolved.

"The entire financial system is at risk from rising non-performing loans (NPLs). Standard Chartered Bank for

example, a well-managed bank, has seen its NPLs increase from 15.5% in 2013 to 27.3% in 2014. According to Stanchart's financial statement for 2014, "The increase is attributable to exposure of some of our customers to payment delays from government." (Dr. Bawumia, 2014). Therefore, is the Basel accord II being a prudent policy to solving the problem of asset quality in banks in Ghana? If banks in more developed financial environment with its complex technology are finding it difficult to implement it then, the question is ''is Ghana able to implement it in its less developed financial environment?'' The study thus seeks to examine the effect of the Basel II accord on asset quality of banks in Ghana.

Figuer 1.1 Trend of non – performing loans from 2000 - 2015

The graph below shows how non-performing loans in Ghana over the years from the year 2000 to the year 2015 over a period of fifteen years.



Data for the graph was adopted from financial stability Report of Bank of Ghana.

1.2 Objectives of the Study

The main objective of the study is to find out the impact of Basel II accord on the quality of bank assets in Ghana since its implementation in 2012.

1.2.1 Specific Objective

The study will specifically:

1. Determine whether banks have implemented the Basel accords
2. Ascertain the extent to which the guiding principles of Basel accords are implemented.
3. Determine the challenges of implementing Basel accord.
4. Find out the possible outcomes of Basel I and Basel II accord on asset quality.
5. To examine the effects of the Basel accord on asset quality in Ghanaian banks.

1.3 Research Questions

1. Have banks implemented Basel accords?
2. To what extent are banks implementing the Basel accord?
3. What are the challenges of implementing Basel I and Basel II accords?
4. What are the possible outcomes of Basel I and Basel II (B^1, B^2) accord on asset quality?
5. What are the effects of the Basel accords on asset quality in Ghanaian banks?

1.4 Scope of the Study

The study seeks to analyse the impact of Basel accords (I and II) on quality of assets in commercial banks. There are currently twenty-nine (29) banks, but the study will focus on only banks that existed before the year 2014.

The study only covers commercial banking in the banking sector, but nevertheless will give an insight of the general impact of Basel accord I and Basel accord II in Ghana. The study covers a period of 2004 to 2015, taking into consideration the period for which Ghana adopted Basel accord I and Basel II

2.0 Literature

2.1 Basel 1 Accord (1988)

The purpose was to prevent international banks from building business volume without adequate capital backing. Its main focus was on credit risk and also to set minimum regulatory capital standards for banks.

Basel 1 suggested that, each commercial bank must maintain a capital (Tier 1 and Tier 2) at least equal to 8% of its risk rated assets. The accord became operative in the year 1992. According to Basel Accord 1, banks apportion different types of risk weights to their assets according to the category of debtors like (0%, 20%, 50% and100%). It means that if the assets having 0% risk weight then the banks required no capital for this type of assets like government securities etc but if the assets having 20% risk weight then the banks must require capital 1.6% of the value of asset and the assets having 50% risk weight then the banks must require capital 4% of the value of this type of assets and if the assets having 100% risk weight then the banks must require capital 8% of this type of assets. So, the Basel Accord 1 measures the risk by this equation '*Bank for International Settlement'* (BIS).

2.2 Core Components of the Basel Accord 1

(1) Core Capital (Tier I Capital)

(i) Paid Up Capital

(ii) Disclosed Reserves (General and Legal Reserves)

(2) Supplementary Capital (Tier II Capital)

i. General Loan-loss Provisions
ii. Undisclosed Reserves (other provisions against Probable losses)
iii. Asset Revaluation Reserves
iv. Subordinated Term Debt (5+ years maturity)
v. Hybrid (debt/equity) instruments

(3) Shortfalls of Basel 1

- Limited differentiation of credit risk. Basel one addresses four categories of risk based weightings basically (0%, (0%, 20%, 50% and100%), based on 8% minimum capital requirement. Given the growing complexity of risk in the financial system, it was not adequate to address adequately risk in the financial sector.
- Static measure of default risk _The capital ratio (8%) is too basic and it is not an outcome of too much scientific analysis but rather of a political discourse. Also, the risk weights are set by intuition in the best case; or even according to the pressure of politically powerful groups in the worst case
- Simplified calculation of potential future counterparty risk. The current capital requirements
  Ignore the different level of risks associated with different currencies and macroeconomic risk. The accord assumes that all players in the industry face the same risk which is no real in in the world.
- No recognition of term-structure of credit risk _The capital charges are set at the same level regardless of the maturity of a credit exposure.
  This with other shortcomings necessitated the need for its improvement and as a result came about Basel 11, nevertheless, Basel will always as the first international mechanism weighing the importance of risk in relation to capital, will remain a milestone in the finance and banking history.

2.3 BASEL II (2004)

Basel-II consists of three pillars:

1. Minimum capital requirements for credit risk, market risk and operational risk—expanding the 1988 Accord (Pillar I)
2. Supervisory review of an institution's capital adequacy and internal assessment process (Pillar II)
3. Effective use of market discipline as a lever to strengthen disclosure and encourage safe and sound banking practices (Pillar III)

The first pillar is similar to Basel I accord, this pillar contain the capital requirement and Tier 1 and Tier 2 capital definitions remain the same, as well as the minimum ratios of 4% and 8%. The major change is the definition of risk weighted assets. The denominator of the ratio now involves credit risk, market risk and operational risk measurement. The market risk measures have been amended to Basel I in 1996 and do not change in Basel II. The credit risk measures, on the other hand, were modified significantly to allow for better risk sensitivity and the operational risk measure is a completely new concept (Verri, 2012).

$$CADt = \frac{\text{Tier1 capital + Tier2 capital}}{\text{Credit risk + market risk + operational risk}} \geq 8\%$$

Credit risk is an investor's risk of loss arising from a borrower who does not make payments as promised. Such an event is called a default.

According to Basel (1999a) credit risk is defined as ‘‘the potential that a bank borrower or counterparty will fail to meet its obligation in accordance with agreed terms’’ and monetary authority of Singapore (2006) defined credit risk as ‘‘risk arising from the uncertainty of an obligor’s ability to perform its contractual obligation’’ where the term obligor refers to any party that has either direct or indirect obligation under the contract.

Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.

Market risk is the risk that the value of a portfolio, either an investment portfolio or a trading portfolio, will decrease due to the change in value of the market risk factors (BIS).

2.4 ASSET QUALITY (NON-PERFORMING LOANS)

The definition of non-performing loan varies among countries; however, there are common definitions;

According to the IMF’s Compilation Guide on Financial Soundness Indicators, NPLs is defined as: “A loan is nonperforming when payments of interest and/or principal are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons such as a debtor filing for bankruptcy to doubt that payments will be made in full" (IMF, 2005).

International accounting and banking standards refer to loans being impaired rather than nonperforming. IAS 39 (paragraphs 58-70) says that objective evidence is required for a loan to be impaired and that the carrying amount of assets should be reduced for impairment losses. The Basel Committee on Banking Supervision, Sound Practices 7 and 11, refer also to loan impairment occurring when it is probable that all amounts due on a loan will not be collected. The amount of impairment should be deducted from carrying amount of the asset and should be reflected in the income so it does not continue to accrue interest.

According to the NPL Statistics Division – United Nations, " a loan is considered NPL if interest and/or the principal are overdue more than 90 days; or unpaid interest from more than 90 days was added to the principal, or the payments are overdue less than 90 days, but it is reasonable to suspect the possibility that the loan will be fully paid."

All above definitions stresses on the expiration of contractual agreement between a lender and a borrower and solvency.

3.0 Methodology

3.1 Research Approach

This study is based on analysis of the impact of Basel accord on asset quality of banks in Ghana, the study make use of consolidated performance of non-performing loans by the bank of Ghana through a period from which it was adopted (2004) to the year (2015): looking at the impact of guiding principles to managing asset quality in Banks in Ghana, using quantitative analysis in ascertaining the impact of the Basel accord on asset quality. The researcher makes use of exploratory approach in finding out how banks manage non-performing assets with Basel committee guidelines in general. The study seeks to address the questions of the up and downs in asset quality and the adaptation of Basel guidelines on asset quality.

3.2 Data Sources and Collection

Primary data: the primary data collected is made up of structured questionnaires and interviews. The interviews were not structured, while the structured questions were used to gather unbiased opinion of the respondents, the interviews were used for clarification of some unclear issues with regard to the questionnaires distributed for answering. This process of collecting data made it easy for the respondents to give data out for analysis.

Secondary data: the researchers made use of secondary data comprising of published financial reports from bank of Ghana (financial stability reports), books, articles, internet, newspapers, financial journals and other sources. This category of data was both in quantitative and qualitative form, and was readily available from the Bank of Ghana site and other publishing journals.

3.3 Population, Sample and Sampling Technique

According to Cooper and Schindler (2006), population refers to the total collection of the elements about which the researcher wishes to make inferences. Population can also be referred to as the totality of phenomena under investigation. The targeted population of the study comprises of all registered banks operating under the

supervision of Bank of Ghana that existed before the year 2014, made of 27 banks. This are the banks that existed by the period of implementation of Basel accord. The researchers used census survey for the study.

3.4 Data Analysis

The data collected will be refined, cleaned and grouped into meaningful categories to help the analyses. The analysis of the data generated from the financial stability reports will be graphically represented using bar chart and explanatory notes to determine trends of the various components listed under sample structure with the aid of the Statistical Package for Social Sciences (SPSS). This is intended to show the nature and to extend of risks or healthy nature of universal banks operation.

4.0 Results and Discussion

4.1 Data Analysis

Figure 2: TREND OF NON-PERFORMING LOANS IN GHANA

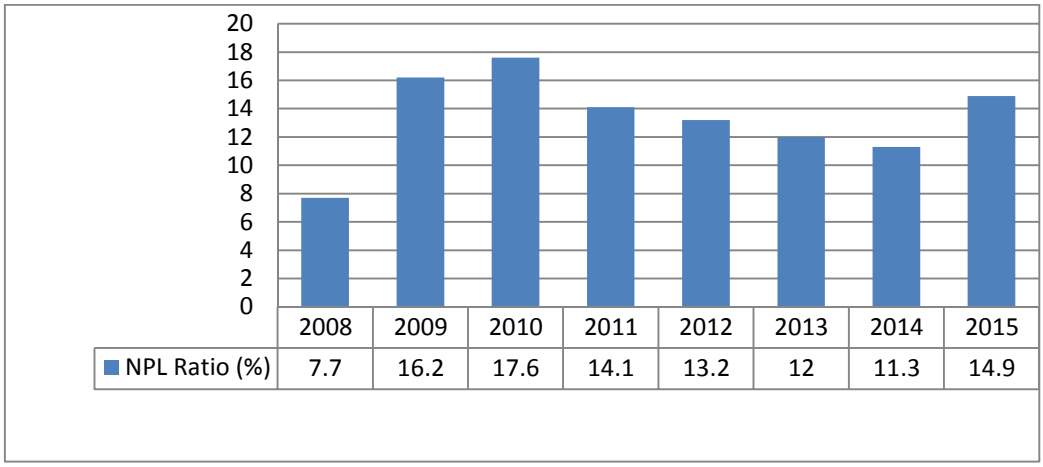


Figure 2

This analysis seeks to establish a pattern of the non-performing loans in from the period 2008 to 2015, the period under consideration. Figure 1.2 gives a graphical representation of using bar chats. From 2008 to 2010 non-performing loan ratio increased by 110.4% and 8.6% respectively. The world average rate for non-performing ratio was 6.4% and 7.3% respectively, showing that the commercial banks in the country were performing badly with respect to world rating. In the year 2011 to the year 2014 asset quality improved across the years, non-performing loan ratio decreased by 19.9%, 6.4%, 9.1%, and 5.8%. The country ratios still performed badly against the world nonperforming ratio of 6.7%, 6.8%, and 7.4% between 2011 and 2014. In the year 2014, non-performing ratio;

4.2 Credit risk environment

Table 2: Whether the Bank has a Sound Credit Risk Management System -

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	17	100.0	100.0	100.0

The table above shows the response rate of banks that have got sound credit risk management system. 100% of the respondents agreed the bank had sound financial system. The respondents explained that the follow the Basel accord principles in respect to the financial system. This shows that banks have sound credit environment.

4.3 Rate of Agreement on Establishment of Proper Credit Risk Environment

Table 3: Establishment of proper credit risk environment -

RESPONSE	MEAN	STANDARD DEVIATION
The board of directors approves the credit risk strategy and significant credit risk policies of the bank	4.47	.624
The banks credit risk strategy reflect the bank's tolerance for risk	4.00	.707
The senior management in our bank strictly implements the credit risk strategy approved by the board of directors	3.94	.748
The senior management in our bank strictly implements the credit risk strategy approved by the board of directors	4.12	.485
The credit risk policies and procedures developed address credit risk in all the bank's activities and at both the individual credit and portfolio levels.	4.00	.612
Our bank identifies and manages credit risk inherent in all products and activities.	4.18	.636
The bank subjects new credit products and activities to adequate risk management procedures and controls before being introduced or undertaken	4.06	.659

Table 3 illustrates the respondents' rate of agreement on establishment of proper credit risk environment. According to the table majority of the bank's board of directors approves the credit risk strategy and significant credit risk policies of the bank, indicating a mean of 4.47. Commercial banks also identify and manage credit risk inherent in all products and activities also representing a mean of 4.18. The senior management in our bank strictly implements the credit risk strategy approved by the board of directors also indicating a mean of 4.12. The bank subjects new credit products and activities to adequate risk management procedures and controls before being introduced or undertaken showing a response mean of 4.06. Banks credit risk strategy reflect the bank's tolerance for risk and the credit risk policies and procedures developed by banks to address both individual and portfolio levels all recorded a mean of 4.00. Senior management's strict implementation of credit strategies approved by board of directors records a mean of 3.94.

4.4 The extent to which banks have established appropriate credit risk environment

Table 4: Appropriate Credit Risk Environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very great extent	2	11.8	11.8	11.8
	Great Extent	10	58.8	58.8	70.6
	Moderate Extent	5	29.4	29.4	100.0
	Total	17	100.0	100.0	

The table 4, shows the extent to which banks have established appropriate credit risk environment. Majority of the banks responded that banks had established to a great extent credit risk environment representing 58.8%. 29.4% represents moderate extent to which banks have established sound credit environment and 11.8% representing very great extent to which banks that banks have established sound credit environment. This response rate indicates strongly banks have established strongly the guiding principles of Basel accords and appropriate credit environment.

4.5 How lack of appropriate credit risk environment affect non-performing assets

The research work found out that lack of appropriate credit leads to banks not able valuate it borrowers and also non-performing assets will increase if there is no appropriate sound credit risk environment.

Table 5: CREDIT MANAGEMENT INFLUENCE

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Monitoring conditions of individual credit and adequacy	17	3.71	.187	.772
Rating system consistency with nature, size and complexity of activities	17	4.12	.146	.600
Bank management of credit risk inherent in on and off-balance sheet activities	17	4.06	.160	.659
Management information on credit composition	17	4.12	.169	.697
consideration of economic activities	17	3.47	.212	.874

Table 5 illustrates the extent to which credit risk management affects non-performing assets. With a scale of 1 to 5, where, 5 to a very great extent, 4 is to a great extent, 3 is to a moderate extent, 2 is to a little extent while 1 is to no extent. The rating system is consistent with the nature, size and complexity of our bank's activities and the banks information system and analytical techniques that allows management to measure credit risk inherent in all on-and off-balance sheet activities represents a mean of 4.12. The consistency of credit rating system with the nature, size and complexity of banks activities represents a mean of 4.06. The banks system for monitoring the conditions of individual credit, including determining of the adequacy of provisions and reserves represents a mean of 3.71. The bank's consideration of changes in economic conditions when assessing individual and credit portfolio of the bank represents a mean of 3.47.

4.6 How appropriate credit administration, measurement, monitoring process affect the non-performing assets.

Findings from the study suggest that, a bank with appropriate credit administration, measurement, and monitoring will help reduce non-performing assets and also increase profitability of the bank.

Response relating to credit risk operating system

Table 6: Risk Analysis

RISK ANALYSIS	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
operate within well-defined process	17	4.47	.174	.717
Established credit limits	17	4.06	.160	.659
Process for approving and refinancing	17	3.82	.196	.809
All extensions at arm's length	17	3.88	.169	.697

Table 6 illustrates the level to which credit risk operation is processed. With a mean of 4.47, representing banks that operate within well-defined credit granting process. Established overall credit limits both at individual and counterparty levels shows a mean of 4.06. All extensions of credit made on arm's-length basis shows a mean of 3.88 and the banks clearly established process for approving new and refinancing of existing credits illustrate a mean of 3.82.

Figure 3: Overall level to which sound granting process affect non-performing assets.

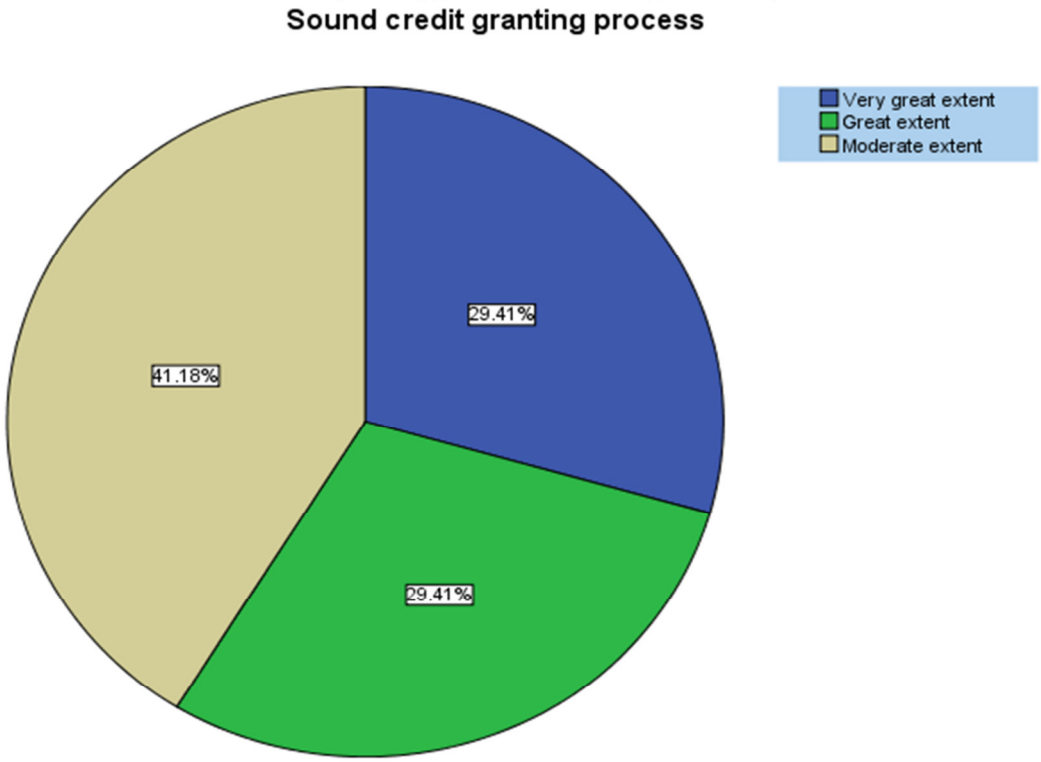


Figure 3 illustrates the overall credit risk granting process. With a rating of 1 to 5, (Very 1 great extent, 2 Great extent, 3Moderate extent, 4 little extent, and 5 No extent). 29.41% of the pie chat figure represents respondents that agree to a very great extent and great extent that credit granting process has an effect on non-performing assets and 41.18 % agree to a moderate extent that credit granting process has an impact on non-

performing assets. The response rate shows that sound credit granting process can greatly impact non-performing assets.

Figure 4

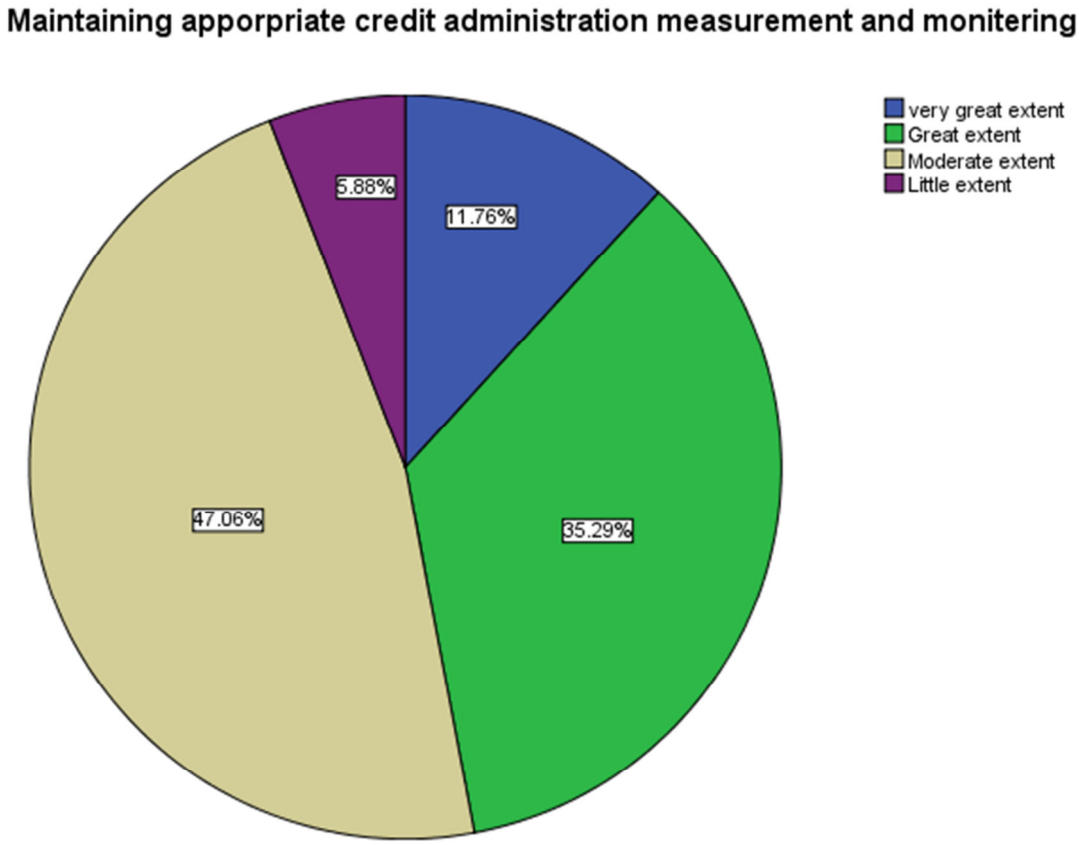


Figure 4 shows the level to which banks maintain appropriate credit administration, measurement and monitoring process. 11.76% of the pie chat represents the banks that agree that credit administration measurement and monitoring affect non-performing assets to a very great extent. 35.29% of the banks agree that it affects non-performing assets to a great extent. 47.06% agree that appropriate credit administration, measurement and monitoring process affects non-performing assets moderately. 5.88% agree that it affects non-performing assets are affected appropriate credit administration, measurement and monitoring. The response rate indicates that there is a relationship between non-performing assets and credit administration measurement and monitoring process.

5.0 Summary, Conclusion and Recommendation

5.1 Summary of Findings

The study findings show that most banks have a sound credit risk management system, that, the bank subjects new credit products and activities to adequate risk management procedures and controls before being introduced or undertaken. The senior management of the banks develops policies and procedures for identifying, measuring, monitoring and controlling credit risk. Bank identifies and manages credit risk inherent in all products and activities. The credit risk policies and procedures developed address credit risk in all the banks activities and at both the individual credit and portfolio levels. The banks credit risk strategy reflects the banks tolerance of risk. The senior management in the bank strictly implements the credit risk strategy approved by the board of directors and the board of directors approves the credit risk strategy and significant credit risk policies of the bank. The study further established that most banks have established an appropriate credit risk environment, lack of appropriate credit risk environment leads to lack of evaluation of the borrowers, failure to account for risk associated with loan defaults and lack of use of credit reference Bureaus hence increasing the chances of loan defaults hence increase in the non-performing loans. The study revealed that most banks in Ghana operate under a sound credit granting process. The poor credit granting process leads to increase in loan default hence reducing the revenue of most of the banks. The study found that all extensions of credit must be made on an arm's length basis, the bank has established overall credit limits both at individual borrowers and counterparties level and bank has a clearly established process for approving new and refinancing of existing credits and that the bank must operate within sound, well defined credit granting criteria represented by mean of 3.92 and a sound credit

granting process affects non-performing loans.

The study established that majority of the respondents agreed to a great extent that a sound credit granting process affects non-performing loans represented by 37.8%, 29.7% agreed to a moderate extent, 18.9% agreed to a very great extent while 13.5% agreed to a little extent. The above information shows that bank maintains an appropriate credit administration measurement, monitoring process. The study revealed the challenges experienced in maintaining appropriate credit administration, measurement, monitoring process in the banks include lack of clients to disclose full information regarding their purpose of the loans and some clients take unsecured loans and then default.

The study established majority of the respondents agreed to a great extent that bank take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios. The management information system should provide adequate information on the composition of the credit portfolio. Banks have information systems and analytical techniques that enable management to measure the credit risk inherent in all on and off balance sheet activities. Bank has a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves. The rating system is consistent with the nature, size and complexity of our banks activities and that the bank must operate within sound, well defined credit granting criteria. The study further revealed that an appropriate credit administration measurement and monitoring process leads to evaluation of the borrowers before lending the loans, incorporation of a certain rate to incorporate risk defaults and incorporating different rates on different clients depending on their risks of default, this would lead to decrease in the number of non-performing loans. The study further revealed that credit risk management practices adopted by the bank influence the level of non-performing loans to a great extent.

5.2 Conclusions

The study revealed that banks have established and implemented sound credit policies to using Basel guidelines. The study found out that banks do regularly review these policies to as time go by.

The study discovered that the guiding principles were implemented by banks fully as the response to the questionnaires suggest that, on the overall granting process of credit risk policies in combatting non-performing assets using Basel II guiding principles a response rate of 29.41% for very great extent and 29.41 for to a great extent and 41.18% for moderate extent proves that banks have established Basel accord principles to great extent in combating non-performing assets.

From the study, banks had challenges in implementing Basel principles for combatting non-performing assets, banks had the problem of knowledge gap in the management of Basel principles, and credit officers did not understand the principles very well. The study also brought to light the challenge of dysfunctional corporate system in implementing Basel principles.

The research showed that Basel accord guiding principles will help minimise default rate among assets quality and improve non-performing loans in banks. The research also revealed that the guiding principles will ensure going concern and improvement in shareholder value. Default rate and its consequential losses will also improve.

5.3 Recommendations

The sole responsibility of good credit policy is in the hands of board of directors. The board should shape risk management strategy to fit both individual and portfolio credit granted and formulate well-defined policies and procedures to meet required standards of the guiding principles of Basel accords. Banks should train the board of directors by sending them to Basel committee training to upgrade their skills.

Banks should make use of credit reference houses to ascertain the trustworthiness of a customer before giving out loans. Banks should enter agreements credit reference companies to provide them with timely data on borrowers.

The supervisory department and the risk management of Bank of Ghana should educate banks on the Basel accord very well to make implementation and formulation of policies to combat non-performing assets. The supervisory department should organize annual training for credit officers and board of directors of banks semi-annually to educate on policies on non-performing assets.

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