International Journal of Law and Management

Credit risk management of Ghanaian listed banks

Michelle Ayog-Nying Apanga Kingsley Opoku Appiah Joseph Arthur

Received 17 April 2014
Revised 29 August 2014
25 September 2014
3 December 2014
Accepted 18 January 2015

Credit risk management of Ghanaian listed banks

Michelle Ayog-Nying Apanga, Kingsley Opoku Appiah and Joseph Arthur
Department of Accounting and Finance, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Abstract

Purpose – The study aims to assess credit risk management practices within financial institutions in Ghana. Specifically, the study compares credit risk management practices of listed banks in Ghana with Basel II (1999).

Design/methodology/approach – The analysis is based on data gathered from varied sources, namely, use of questionnaires, analysis of internal credit policies and procedure manuals and semi-structured interviews and discussions with credit risk managers of the selected banks in May 2007 and October 2014.

Findings – Overall, the credit risk management practices within listed banks in Ghana are in line with sound practices. The only dissimilarity, however, is the role of the board of directors in defining acceptable types of loans and maximum maturities for the various types of loans. The listed banks in Ghana are also exposed to credit risks associated with granting both corporate and small business commercial loans and the use of collaterals to mitigate their credit risk exposures.

Practical implications – Banks in Ghana should consider developing the skills of all their personnel and appropriately motivating those involved in the credit risk management processes to ensure that they carry out this process efficiently.

Originality/value – Research into credit risk management in the banking industry from the Ghanaian perspective remains scant. This study is, therefore, timely, and its findings are invaluable for the efficient management of credit risk in the banking industry. This study provides policy recommendations which will enhance shareholder value and, in this way, contribute to greater stability in the banking sector in developing countries, in particular.

Keywords Ghana, Basel II, Financial institutions, Banking regulations, Credit risk, International bank supervision

Paper type Research paper

1. Introduction

Financial institutions have different types of risk exposures including market risk, credit risk and operational risk (Eccles *et al.*, 2001), implying that engagement in risk management practices is inevitable. One of the most important forms of these practices pertains to the management of credit risk, particularly for banks and other firms in the financial services industry. The increasing variety in the types of counterparties (from individuals to sovereign governments) and the ever-expanding variety in the forms of obligations (from auto loans to complex derivatives transactions) suggest that credit risk management plays a crucial role in the overall risk management activities carried out by firms in the financial services industry (Fatemi and Fooladi, 2006). The Basel II (1999) Committee agrees, emphasising that

International Journal of Law and Management
Vol. 58 No. 2, 2016
pp. 162-178

1754-243X
DOI 10.1108/IJLMA-04-2014-0033

loans are the largest and most obvious sources of credit risks for most banks. Credit risk is defined as the likelihood that a bank's borrower will fail to honour its obligations in line with agreed terms and conditions.

Research on credit risk in developed economies is well documented in corporate finance literature (Altman and Saunders, 1998; Fatemi and Fooladi, 2006). Theoretical and empirical studies consider quality, uncertainty and the market mechanism (Akerlof, 1970); credit rationing (Stiglitz and Weiss, 1981), default risk in mobile home credit (Lawrence *et al.*, 1992), forecasting models (Sommerville and Taffler, 1995) and credit risk measurement (Altman and Saunders, 1998). Others explore incorporating sustainability criteria into credit risk management (Weber *et al.*, 2010), aggregate risk (Acharya *et al.*, 2013), accounting-based versus market-based models (Trujillo-Ponce *et al.*, 2014) and dynamic risk management (Rampini *et al.*, 2014). Contemporary scholars focus on credit risk and diverse measures including corporate financial management decisions (Bolton *et al.*, 2011), corporate-treasury yield spread (Huang, and Huang, 2012), data quality (Moges *et al.*, 2013), monetary policy (Jiménez *et al.*, 2014) and liquidity risk (Imbierowicz, and Rauch, 2014).

Although the issue of credit risk is becoming more important in policy debates, there is still relatively little research, especially in developing countries. Prior studies considered the use of index insurance (Miranda, and Gonzalez-Vega, 2011), potential barriers to implementation of the Basel II (Masood and Fry, 2012), barriers to household risk management (Cole *et al.*, 2013), risk management in the Ghanaian insurance industry (Akotey and Abor, 2013). Others focus on the impact of risk and performance of banks (Odonkor *et al.*, 2011) and non-bank financial institutions (Sakyi *et al.*, 2014). Put simply, research on credit risk management in developing economies, however, is in its infancy. Specifically, evidence on credit risk management issues in Sub-Saharan Africa and Ghana in particular, remains scant despite the notion that recent problems in the banking system pose a significant threat to the health of both developed and developing economies. This study attempts to fill this gap by assessing listed banks in Ghana's credit risk management practices.

Specifically, the study compares credit risk management practices of listed banks in Ghana with Basel II (1999). The case for Sub-Saharan Africa and Ghana in particular is twofold. First, Green (2008) argues that since the late 1950s when Ghana became the first Sub-Saharan African country to gain independence, it has been regarded across the world as a "torchbearer for African aspirations". This notwithstanding, in early 2000, Ghana, because of real estate losses (Sheng, 1996), experienced a number of liquidations including Meridian BIAO Bank, Bank for Housing and Construction, National Savings and Credit Bank, Ghana Co-operative Bank and Bank for Credit and Commerce (Amidu, 2007; Appiah, 2011). These high-profile failures, in turn, raise questions on the credit risk management practices of banks in Ghana. However, 14 years after the demise of these high-profile banks, research on credit risk management of banks in Ghana remains scant. This study attempts to fill this gap.

Second, the introduction of the universal banking license in 2003 resulted in an influx of seven foreign banks, implying a remarkable growth in the number of banks operating in Ghana. Consequently, the Bank of Ghana, in its efforts to ensure that banks in Ghana comply with the more demanding provisions of the Basel II (1999), initiated the promulgation of The Banking Act, 2004 (Act 673), which was passed by the Parliament in October 2004 to replace the Banking Law 1989 (PNDCL 225). Further, the Bank of Ghana announced that all banks in Ghana are encouraged to adopt the full provisions of Basel II with slight modifications by 31 December 2009 (Gottschalt, and Griffith-Jones, 2006; Odonkor *et al.*, 2011). This notwithstanding, 10 years after the endorsement of The Banking Act, 2004 (Act 673) prepared in line with the recommendations of Basel II, credit risk has received little attention in the Ghanaian context (Odonkor *et al.*, 2011). This study adds to the existing literature on credit risk management of banks from the perspective of Ghana, as a sub-Saharan African country, by answering the following questions:

RQ1. What are the credit risk management practices of the listed banks in Ghana?

RQ2. Are these credit risk management practices in line with the recommendations of Basel II (1999)?

The rest of the paper is structured as follows. Section 2 reviews the literature. Section 3 describes the method. Section 4 presents the analysis and discussion, and Section 5 concludes.

2. Literature review

2.1 Overview of the banking industry in Ghana

Ghana's financial system is mainly a banking system with particular emphasis on deposit money banks (DMBs) and rural and community banks. DMBs have their main focus on mainstream banking in the formal sector within the urban setting. Rural and community banks provide banking services to the rural dwellers. The contemporary financial system of the country is a product of the Economic Recovery Programme, subsequent Financial Sector Adjustment Programme (FINSAP) and Financial Sector Strategy Plan (FINSSP) instituted in the early 1980s as a means of reviving the failing economy of the country (Aryeetey and Gockel, 1991). The focus of the programmes was to liberalise the financial sector so as to improve bank efficiency and boost public confidence in the industry (Quartey, 2005). The objectives of FINSAP were, among others, to:

- reduce financial repression through the liberalisation of interest rates and elimination of administrative credit allocations;
- restructure the banking system and improve bank solvency levels; and
- strengthen the regulatory environment including bank supervision, auditing and accounting practices (Ncube and Senbet, 1997; Camen *et al.*, 1997; Quartey, 1997, 2005).

To provide legal backing for the programme, the Banking Law, 1989 (PNDC Law 225) was enacted to govern the banking operations in Ghana. The most significant provision, the pegging of the capital adequacy ratio of bank equity to bank assets at 6 per cent, was in line with Basel I. Fast forward a decade and half, this law was replaced in 2004 by The Banking Act, 2004 (Act 673), which raised the capital adequacy ratio to 10 per cent. This ratio has been maintained in the most recent law, Banking (Amendment) Act, 2007 (Act 738). The amendment to the 2004 law (in 2007) was to allow for international (off-shore) banking.

A successor programme to FINSAP is the Financial Sector Strategic Plan (FINSSP) largely implemented at the turn of the millennium with almost similar objectives as those of the predecessor, but the latter sought to consolidate gains made under FINSAP and further deepen the sector with improved financial service delivery (Bawumia, 2010). Results from both FINSAP and FINSSP have impacted positively in a significant manner on the financial system over the years under implementation. The banking system has seen a significant increase in the number of banks, from 10 banks in 1988 with 405 branches to 27 banks in 2013 with 892 branches. Total banking system assets have grown from 0.31 per cent of gross domestic product (GDP) in 1993 to 38.7 per cent by 2013, reflecting a more vibrant banking sector (Bank of Ghana, 2013). Table I presents the expansion in the bank networks in the country, as well as the expansion of bank assets relative to the country's nominal GDP.

Analysts of Ghana's banking sector point towards concentration of assets and branches among a few banks as the reason for the large spread between bank lending and bank borrowing rates. For example, in 2012, the total branch networks of the 26 banks were 859; yet, Ghana Commercial Bank alone accounted for 18.4 per cent of this total. Real bank lending rates, on the other hand, turned positive, registering 9.1 per cent in 1989 to 22 per cent in 2000 and 9.1 per cent between 2001 and 2008 (Bawumia, 2010). The analysts presuppose that such a phenomenal concentration of assets and branches leads to an inadvertent lack of competition among Ghanaian banks. In their paper, "Explaining the market power of Ghanaian Banks", Aboagye *et al.* (2008) discuss this matter in detail.

2.2 Summary of Basel II

One of the main drivers in shaping a bank's approach to credit risk management has been Basel II. Basel II imposes disciplinary capital charges for procedural errors, limits violations and other operational risks. It also creates new pressures to ensure that effective credit risk management controls are in place. The Bank for International Settlements (BIS), through the Basel Committee on Banking Supervision (1999) (BCBS), issued a consultative paper on principles for the management of credit risk, in which it seeks to encourage banking supervisors globally to promote sound practices for managing credit risk. The document

Year	No of banks	Total assets to GDP	Total branches
2006	24	GH¢5,183.3/18,705.1 = 45.11%	450
2007	24	GH¢7,795.7/23,154.4 = 33.67 %	595
2008	25	GH¢10,692.2/30,178.6 = 35.43%	640
2009	26	GH¢14,043.3/36,867.0 = 38.09%	706
2010	26	GH¢17,397.6/46,042.0 = 37.79%	776
2011	27	GH¢22,059.1/59,816.0 = 36.88%	795
2012	26	GH¢28,761.4/74,959.0 = 38.37%	859
2013	27	GH¢36,169.9/93,461.0 = 38.70%	892

Note: All figures on total assets and nominal GDP are in millions of Ghana Cedi
Source: Authors' computations from Bank of Ghana (Central Bank) data

Table I
Expansion of bank networks and assets

contains 17 principles for the assessment of a bank's credit risk management. Credit risk management practices differ from one bank to the other, as these practices are dependent on the nature and complexity of the individual bank's credit activities. Sound practices address four key areas:

(1) establishing an appropriate credit risk environment;
(2) operating under a sound credit-granting process;
(3) maintaining an appropriate credit administration, measurement and monitoring process; and
(4) ensuring adequate controls over credit risk.

In addition to the above, comprehensive credit risk management should also be applied in conjunction with sound practices related to the assessment of asset quality, the adequacy of provisions and reserves and the disclosure of credit risk. We turn next to the discussion.

Principle 1 proposes that the board should establish and review an appropriate credit risk strategy and policies for the bank. The strategy should mirror the bank's tolerance for risk and reward for incurring different credit risks. Principle 2 states that the executive management should implement the credit risk strategy. For this reason, the executive management should develop policies and procedures for identifying, measuring, monitoring and controlling credit risk at both the individual credit and portfolio levels. Principle 3 obliges banks to identify and manage credit risk inherent in all products and activities. Banks should also ensure that the risks of new products and activities are subject to adequate control procedures prior to implementation. These adequate control procedures should be approved in advance by the board or its appropriate oversight committee.

Operating under a sound credit-granting process is discussed under Principle 4. These sound credit-granting processes include, but are not limited to, a thorough understanding of the borrower and/or counterparty, as well as the purpose of the credit, and sources of repayment. Principle 5 requires the establishment of overall credit limits at the level of individual borrowers and counterparties, and groups of connected counterparties that aggregate in a comparable and meaningful manner different types of exposures, both in the banking and trading books and on and off the statement of financial position. Principle 6 obliges banks to clearly establish procedures for approving new loans as well as the extension of existing loans. Principle 7 states that all extensions of credit must be made on an arm's-length basis. Specifically, loans to related parties must be monitored with appropriate due diligence and procedures to control the risks of connected lending.

Principle 8 stipulates that banks should put in place measures to maintain an appropriate credit administration, measurement and monitoring process for their numerous loan risk-bearing portfolios. Banks must also monitor the condition of individual loans, including determining the adequacy of provisions and reserves (see Principle 9). Principle 10 suggests that banks should employ internal risk-rating methods in managing loan risk. This rating method should be in line with the nature, size and complexity of the operations of the bank. Principle 11 recommends that management of banks should use information systems and analytical tools to measure the credit risk inherent in all on- and off-statements of financial position activities. The management information system, in turn, is expected to report suitable data on the composition of the credit portfolio, inclusive of identification of all concentrations of risk. Banks must also implement systems for monitoring the overall composition and quality of the credit portfolio (see Principle 12). Banks should consider probable future changes in economic conditions when assessing individual loans and their credit portfolios, and it should assess their credit risk exposures under financial distressed conditions (see Principle 13).

Ensuring adequate controls over credit risk is the remit of Principles 14-16. Principle 14 considers the establishment of an independent credit system review. The results of these reviews should be communicated directly to the board and senior management. According to Principle 15, banks must ensure that the credit-granting function is being properly managed and that credit exposure is within levels consistent with prudential standards and internal limits. Banks should implement appropriate controls to ensure that exceptions to policies, procedures and limits are reported in a timely manner to the suitable level of management. According to Principle 16, banks must have a system in place for managing problem loans and various other workout situations.

Finally Principle 17 addresses the role of supervisors. Supervisors should ensure their banks have used an effective system to monitor and control credit risk as part of an overall approach to risk management. Supervisors should also conduct an independent evaluation of a bank's strategies and procedures related to the granting of loans and the day-to-day management of the portfolio. Supervisors should restrict bank exposures to individual borrowers or groups of connected counterparties by setting prudential limits.

In sum, the above principles on credit risk management can be classified into three main thematic areas, namely, policy and strategy, organisational structure and operations/systems (Kannan, 2004). Thus, banks are required to have sound credit risk policies and strategies that govern their loan granting and credit risk management functions; well-structured organizational structures that clearly outline the individual roles of the directors, the executive management and other staff in the effective development and implementations of these policies and strategies. Finally, banks are supposed to reduce the incidence of loan losses by maintaining systems that would enhance efficient credit administration, credit risk measurement and monitoring processes.

3. Method

The study examines credit risk management practices from four listed banks in Ghana as at 2007, implying that we use multiple case studies as a strategy to achieve our objective. As Yin (2003) remarks, a case study that involves an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence is relevant here. For anonymity, these banks are hereby referred to as Case 1, Case 2, Case 3 and Case 4. Case 1 is the biggest universal bank in the country with respect to branch networks. The number of branches of the bank has grown from 136 in 2007 to 158 branches in 2012 and with more than 2,100 employees. In terms of operational performance and asset size, the bank ranks among the top three as justified by the following statistics. In 2012, the bank posted the highest return on equity (48 per cent) in the banking industry, while its share of the industry's operating assets (11.0 per cent) was only inferior to that of Ecobank Ghana Ltd. (12.4 per cent). Similarly, the bank was second only to Barclays Bank Ghana in 2007 in terms of operating assets. Turning to Case 2, this bank is the smallest of all the listed banks in Ghana as at 2007. The size of the bank and the audacity of its management have motivated other similar sized or even smaller banks to list as well. Since 2007, the bank has almost doubled its presence in the country through branch networks from 10 branches in 2007 to 19 branches in 2012. This bank's operating assets have been very stable relative to the industry as indicated by the 11th position since 2007.

Case 3 is one of the traditional foreign banks with a global presence. This bank has been very efficient in its banking operations within the Ghanaian economy. Much emphasis has not been placed on growth through the branch networks. This confirms the marginal growth in the number of branches over the past six years (16 per cent), from 19 in 2007 to 22 branches in 2012. In terms of profitability and asset base, the bank's returns on equity stood at 43.8 per cent, second to Case 1, while its operating asset (8.7 per cent) was inferior to both the Ecobank Ghana Ltd. and Case 1. Finally, Case 4 is the only bank in this study that has not witnessed any growth in its number of branch presence. The number of branches of the bank has remained at 36 since 2007. In spite of this stagnation, the bank's performance has been mixed. The bank's share of return on equity ranked 5th in 2009 and 14th in 2011, although the bank ranked 11th in 2012.

An interview guide is designed on the thematic areas of the study to gather data from the main actors (credit risk managers and officers) of the four listed banks. Semi-structured interviews are conducted with the credit risk manager at the head office of each bank in May 2007. These managers are responsible for credit risk administration of their respective banks. The interviewees are requested to describe their credit risk management practices. The method offers adequate time with the interviewees to enquire further into issues and, thus, gain insightful information. Finally, due to the research ontology (qualitative), as well as the methodology (personal interview using an open questionnaire), no attempt is made to quantify the data. Accordingly, content analysis is used as the main tool of analysis. In addition to the semi-structured interviews, the researchers also administer closed-ended questionnaires to two credit officers from each bank in October 2014 (Appendix 1). Anonymity is given to our respondents to provide an assurance to them that the data collected would be treated with absolute confidentiality. These credit risk managers and officers have at least a university degree and 10 years of experience in the credit risk departments of their respective banks. The questionnaires are pre-tested with 25 credit officers of rural and community banks within the Ashanti region. To obtain an independent view on credit risk management practices, we examine internal documents such as credit risk manuals, application forms and management reports and presentation documents. Overall, we methodically analyse responses based on the thematic issues of the study (Yin, 2003) and present our analysis in the form of a descriptive analysis, in the next section.

4. Analysis and discussions

Concerning *RQ1*, our case study banks' main sources of credit risk exposure include corporate and small business commercial loans, interbank transactions, trade financing and foreign exchange transactions. They also encounter minimal credit risk exposures from the use of financial futures, forward contracts and swaps. These exposures are minimal, as trading in these instruments is not on a large scale. The banks, however, are not exposed to credit risk from retail mortgages. This is because loans given for building purposes have relatively short maturities to be considered as retail mortgages.

The main types of credit risk the banks encounter are outlined as follows. Counterparty default risk is the probability of borrowers defaulting in the repayment of both principal and interest. Equity risk arises from their equity holdings. Securitisation risk is the result of the banks entering into arrangements to secure themselves against certain exposures. Concentration risk is widespread, especially in banks' deposits. Thus, if few numbers of depositors accounting for a large proportion of listed banks' deposits decide to withdraw at a go, it could result in liquidity problems for the banks. Concentration risk is also inherent in their operations through lending to a large number of connected customers from a particular industry or customers with similar characteristics. Finally, although banks are faced with some degree of residual risk, it is rather minimal.

The banks make use of collateralised debt obligations and guarantees to mitigate their credit risk exposures. They make use of collaterals the most because collaterals are the safest compared to guarantees. They are not fully protected from guarantees because even if the guarantors pay their obligations, the banks will still suffer some amount of losses if the borrowers are unable to pay their part. An interesting discovery made by this paper is that collaterals are not riskless; therefore, the banks ensure that the collateral demanded is able to cover at least the principal lent to the borrower to fully protect it. They, however, do not make use of credit derivatives. The banks are considering that option. The Bank of Ghana is also in the process of training individuals to handle them, as they can be extremely risky if not handled well.

Turning to *RQ2*, the banks, in accordance with standard practices, have credit risk management policies and procedure manuals that outline the banks' willingness to grant credits based on the types of credits (i.e. corporate loans and retail loans), economic sector, currency and maturity. Although they have no provisions in their manuals for the geographical location and anticipated profitability of the borrowers, the banks are responsible for ensuring without any reasonable doubt that borrowers are able to repay the loan (i.e. considering their cash flows over a three-year period). The geographical location is also not included because banks do not provide credits to customers in locations in which they are currently not operating, as it will be difficult to monitor such credits.

The banks' manuals also have provisions for considering the cyclical aspects of the economy and the resulting shifts in the composition and quality of their overall credit portfolios. For example, most credits towards late Christmas are mostly not granted, as there is the high probability of them being misused. The policies and procedure manuals also spell out guidelines for risk identification, reporting and risk controland mitigation techniques, documentation, legal issues and management of problem loans. The banks, however, use more of subjective credit risk measurement techniques in the generation of their risk grading. These subjective measures include character (reputation), capital (leverage), capacity (volatility of earnings) and collateral (security). Put differently, listed banks in

Ghana use subjective measures to generate the risk profile of a prospective client rather than accounting-based systems that are now being largely used internationally. The policies also clearly spell out the credit appetites of the banks (i.e. credit exposure limits and credit granting criteria) and the acceptable levels of risk-reward trade-off for their credit-granting activities.

The boards of directors of the banks are mainly responsible for approving and reviewing the credit strategies developed by their respective executive management. Specifically, the boards set out the criteria and limits for the granting of credit. The boards also ensure that the executive management is fully capable of managing the lending activities of the banks by employing individuals with the right qualifications to do the job and firing those who cause serious losses to the banks. The boards define the duties and responsibilities of loan officers and the credit committees and also ensure that the credit risk policies and strategies of the banks are effectively communicated throughout the banking organizations. The only difference, however, with the standard practice is that the boards of directors do not engage in defining acceptable types of loans and maximum maturities for the various types of loans granted by the banks. This is mainly because the boards do not have the expert knowledge in specialized fields like risk management to develop the appropriate policies to govern the banks' lending activities.

Risk management departments and executive management, therefore, develop these strategies and forward them to their respective boards for review and approval. This, however, is not rare, as banks are required to adapt principles to suit their size, nature and complex business activities. Thus, executive management is responsible for not only developing credit risk strategies and policies but also for defining acceptable types of loans and maximum maturities for the various types of loans the bank grants. Senior management is also responsible for implementing the strategies and policies reviewed and approved by the board. Senior management sees to it that the loan approval and review responsibilities of the bank are clearly and properly defined and assigned. They also ensure that the credit-granting activities of the banks are in line with established strategies and credit standards. The senior management make provisions for the periodic independent assessment of the banks' credit-granting functions through internal audits by personnel who are responsible for credit origination and approval or external auditors and mandatory supervisors from the Bank of Ghana.

The credit administration function of the banks' credit risk management processes ensures that the loan documentation processes are clearly followed. These include keeping the credit file up to date, obtaining current financial information, sending out renewal notices and preparing various documents such as loan agreements. The credit administration function has been assigned to a separate department, as the banks are big, with branch presence in almost all regional capitals in Ghana. The banks also have procedures and information systems in place to effectively monitor the conditions of individual credits across the banks' various portfolios. These procedures define the criteria for identifying and reporting potential problems with credits and other transactions to ensure that they are subject to more frequent monitoring, as well as possible corrective action, classification and/or provisioning. The banks also ensure that specific individuals are responsible for monitoring credit quality, including ensuring that relevant information is passed to those responsible for assigning internal risk ratings to the credits.

The banks also have credit risk measurement methodologies that enable them to quantify the risks involved in exposures to individual borrowers or counterparties (they use experts and subjective analyses). They also have information systems that are able to generate the information needed by management to assess quickly and accurately the level of credit risks arising from their various activities and determine whether the banks' performance is meeting the credit risk strategy. Their credit risk measurement techniques take into account the specific nature of the credit (loan purpose, etc.) and its contractual duration (maturity) and financial conditions. The banks have in place credit control systems to manage their credit exposures. They have systems in place that allow for an independent review of their credit-granting activities to ensure that the procedures they are using can effectively manage their credit risk exposures. Internal and external auditors and the Bank of Ghana mainly conduct these reviews. As well, each bank has a full-fledged unit (i.e. the loan recovery unit) that is tasked with the mandate of managing problem loans and executing workout strategies to either ensure full loan recovery or minimise loan losses from problem loans.

5. Conclusions and policy implications

This study examines credit risk management in the Ghanaian banking industry. Overall, the banks' practices are in line with the required principles except in the case of the role of the boards of directors in the development of credit risk policies and strategies. Interestingly, the risk management department and senior management rather develop strategies that govern their lending activities for review and approval of the board. This is mainly because each board does not have the expert knowledge in specialized fields like risk management. This dissimilarity is, however, not bad, as banks are required to adapt principles to suit the size, nature and complexity of their lending activities. The banks are largely exposed to credit risk from the granting of corporate and small business commercial loan. This is in line with the notion that loans account for the highest credit risk exposures encountered by banks. Such exposures lead the banks to make huge provisions for non-performing loans. To mitigate such exposures, the banks normally use collaterals and guarantees. The banks, however, prefer collateral securities because they are safer as compared to guarantees. There are more developed mitigating techniques that can be used. The banks do not use credit derivatives, although this mitigating technique is growing very fast in the developed world. The banks' reluctance to use this technique is mainly because of the underdeveloped nature of the financial system of the country. It is expected that credit derivatives may be used more essentially because of the increasing nature of product complexity.

It was further discovered that the banks' credit risk management practices are in line with sound practices. The banks have a credit policy and procedure manual that guides their lending activities. They also have well-structured risk management departments with highly qualified personnel who develop and implement credit strategies and policies that have been approved and recommended by the boards of directors. They have systems in place to effectively monitor and maintain the credit quality. The banks also have loan recovery units responsible for managing problem loans and executing workout strategies to either ensure full loan recovery or minimise loan losses from problem loans. The credit risk management practices are in line with benchmarks such as Basel II.

The only dissimilarity is the role of the banks' boards in defining acceptable types of loans and maximum maturities for the various types of loans the banks grant. This difference is, however, accounted for by the fact that developing such policies required individuals with the expert knowledge in risk management. Regrettably, a majority of the board members lack the expertise in risk management practices, and even the few with such expert knowledge are not entirely abreast with modern developments in the area of risk managements related to complex and hybrid products requiring techniques such as the credit derivatives. From this point, the banks, through their boards of directors, should consider sponsoring senior management and staff of their risk management departments for further training in new developments in risk management. This will give them the additional skills required to develop policies and strategies that would enhance the banks' lending activities. Specific training should be directed at enhancing the expertise levels of the senior management and staff of the risk management departments.

The banks should also consider intensifying research into the use of credit derivatives. This has become essential because of the increasing product complexity provided by new international universal banks entering the Ghanaian banking industry. These derivatives have the potential of efficiently isolating and transferring credit risks in a flexible and efficient manner than techniques already in use by the banks (i.e. collateral and guarantees). One key policy recommendation is that banks in Ghana should also consider graduating from the use of subjective analysis in the quantification of their credit risk exposures to the use of expert- and/or accounting-based systems in which key accounting variables are combined and weighted to produce either a credit risk score or a probability of the default measure. If the credit risk score, or probability, attains a value above a critical benchmark, a loan applicant is either rejected or subjected to increased scrutiny. These systems provide more objective credit grading for borrowers. Another policy recommendation is that the staff of this credit recovery unit should be remunerated based on the number of loans they are able to recover. This will discourage them from abandoning the recovery process, as it can be extremely tiresome and boring. Positively, this policy recommendation can lead to an increase in loan recovery rates as a result of the motivational upsurge in the staff.

Also banks are required to adapt the principles required by Basel II to suit the size, nature and complexity of their lending activities. We are of the view that the adaption of Basel II is a bold initiative, but not a panacea for good credit management practices. It is critical that the Bank of Ghana facilitates continuous education for its players within the banking industry, analysts and the general public on the effects of Basel II and its application. A review of operational credit policy manual of individual banks is also crucial to ensure that Basel II provides the necessary benefits. The research concludes that there is the need for further studies into the activities of the banks' loan recovery units to determine whether their problem loan management systems and workout strategies are in line with recommended practices.

References

Aboagye, Q.A., Akoena, S.K., Antwi-Asare, T.O. and Gockel, A.F. (2008), "Explaining the market power of Ghanaian Banks", *South African Journal of Economics*, Vol. 76 No. 4.

Acharya, V.V., Almeida, H. and Campello, M. (2013), "Aggregate risk and the choice between cash and lines of credit", *The Journal of Finance*, Vol. 68 No. 5, pp. 2059-2116.

Akerlof, G.A. (1970), "The market for lemons: quality uncertainty and the market mechanism", *Quarterly Journal of Economics*, Vol. 84 No. 3, pp. 488-500.

Akotey, J.O. and Abor, J. (2013), "Risk management in the Ghanaian insurance industry", *Qualitative Research in Financial Markets*, Vol. 5 No. 1, pp. 26-42.

Altman, E.I. and Saunders, A. (1998), "Credit risk measurement: developments over the last 20 years", *Journal of Banking and Finance*, Vol. 21 Nos 11/12, pp. 1721-1742.

Amidu, M. (2007), "Determinants of capital structure of banks in Ghana: an empirical approach", *Baltic Journal of Management*, Vol. 2 No. 1, pp. 67-79.

Appiah, K.O. (2011), "Corporate failure prediction: some empirical evidence from listed firms in Ghana", *China-USA Business Review*, Vol. 10 No. 1, pp. 32-41.

Aryeetey, E. and Gockel, F. (1991), "Mobilising domestic resources for capital formation in Ghana", AERC Research Paper No 3, AERC, Nairobi.

Bank of Ghana (2013), "Annual reports", Bank of Ghana website.

Banking (Amendment) Act, 2007, (Act 738), Ghana, available at: www.parliament.gh/publications/37/134 (accessed 26 January 2016).

Bank Supervision Department of the Bank of Japan (1998), "Utilization of financial institutions: self-assessment in enhancing credit risk management", available at: www.boj.or.jp/en/type/ronbun/ron/research/ron9802a.htm (accessed 14 March 2007).

Basel Committee on Banking Supervision (1999), "Principles for the management of credit risk – consultative paper", available at: www.bis.org/publ/bcbs54.htm (accessed 14 March 2007).

Bawumia, M. (2010), *Monetary Policy and Financial Sector Reform in Africa: Ghana's Experience*, Combert Impressions Ghana, Accra, Ghana.

Bolton, P., Chen, H. and Wang, N. (2011), "A unified theory of Tobin's q, corporate investment, financing, and risk management", *The Journal of Finance*, Vol. 66 No. 5, pp. 1545-1578.

Camen, U., Ncube, M. and Senbet, L.W. (1997), 'The role of financial markets in the operation of monetary policy in africa, collaborative project paper", *African Economic Research Consortium, Nairobi, Kenya*.

Cole, S., Giné, X., Tobacman, J., Townsend, R., Topalova, P. and Vickery, J. (2013), "Barriers to household risk management: evidence from India", *American Economic Journal: Applied Economics*, Vol. 5 No. 1, p. 104.

Eccles, R., Herz, R., Keegan, M. and Phillips, D. (2001), "The risk of risk", *Balance Sheet*, Vol. 9 No. 3, pp. 28-33.

Fatemi, A. and Fooladi, I. (2006), "Credit risk management: a survey of practices", *Managerial Finance*, Vol. 32 No. 3, pp. 227-233.

Green, E. (2008), *District Creation and Decentralisation in Uganda*, Crisis State Research Centre, Uganda.

Gottschalt, R. and Griffith-Jones, S. (2006), *Review of Basel II Implementation in Low Income Countries*, Institute of Development Studies, Brighton, UK.

Huang, J.Z. and Huang, M. (2012), "How much of the corporate-treasury yield spread is due to credit risk?", *Review of Asset Pricing Studies*, Vol. 2 No. 2, pp. 153-202.

Imbierowicz, B. and Rauch, C. (2014), "The relationship between liquidity risk and credit risk in banks", *Journal of Banking & Finance*, Vol. 40 No. 3, pp. 242-256.

Jiménez, G., Ongena, S., Peydró, J.L. and Saurina, J. (2014), "Hazardous times for monetary policy: what do twenty-three million bank loans say about the effects of monetary policy on credit risk-taking?", *Econometrica*, Vol. 82 No. 2, pp. 463-505.

Kannan, R. (2004), "RBI guidelines on credit risk and credit risk management", Personal Website of R. Kannan, available at: www.geocities.com/kstability/inbank/risk/credit-risk.html (accessed 18 March 2007).

Kone, H. (2006), "Problem loans management practices: Ecobank Ghana Limited as a case study", available at: www.memoireonline.com/01/07/323/m_problem-loans-management-practices-ecobank-ghana-case-study0.html (accessed 4 March 2007).

Lawrence, E.L., Smith, S. and Rhoades, M. (1992), "An analysis of default risk in mobile home credit", *Journal of Banking and Finance*, Vol. 16 No. 2, pp. 299-312.

Masood, O. and Fry, J. (2012), "Risk management and Basel-Accord-implementation in Pakistan", *Journal of Financial Regulation and Compliance*, Vol. 20 No. 3, pp. 293-306.

Minsky, H.P. (1982), "The financial-instability hypothesis: capitalist processes and the behaviour of the economy", in Kindleberger, C.P. and Laffargue, J. (Eds), *Financial Crises: Theory, History and Policy*, Cambridge University Press, Cambridge, MA, pp. 138-152.

Miranda, M.J., and Gonzalez-Vega, C. (2011), "Systemic risk, index insurance, and optimal management of agricultural loan portfolios in developing countries", *American Journal of Agricultural Economics*, Vol. 93 No. 2, pp. 399-406.

Moges, H.T., Dejaeger, K., Lemahieu, W. and Baesens, B. (2013), "A multidimensional analysis of data quality for credit risk management: new insights and challenges", *Information & Management*, Vol. 50 No. 1, pp. 43-58.

Ncube, M. and Senbet, L.W. (1997), "Perspectives on financial regulation and liberalization in Africa under incentive and asymmetric information", *Journal of African Economies*, Vol. 6 No. 1, pp. 29-89.

Odonkor, T.A., Osei, K.A., Abor, J. and Adjasi, C.K. (2011), "Bank risk and performance in Ghana", *International Journal of Financial Services Management*, Vol. 5 No. 2, pp. 107-120.

Quartey, P. (1997), *The Effect of Non-bank Financial Intermediaries on Monetary Policy in Ghana*, University of Ghana, Mimeo, Ghana.

Quartey, P. (2005), "Financial sector development, savings mobilisation and poverty reduction", WIDER Discussion Paper No 2005/71, UNU-WIDER, Helsinki.

Rampini, A.A., Sufi, A. and Viswanathan, S. (2014), "Dynamic risk management", *Journal of Financial Economics*, Vol. 111 No. 2, pp. 271-296.

Republic of Ghana (1989), Banking Law, 1989 (PNDC Law 225), Accra, Ghana.

Sakyi, P.A., Ofoeda, I., Kyereboah–Coleman, A. and Abor, J.Y. (2014), "Risk and performance of non–bank financial institutions", *International Journal of Financial Services Management*, Vol. 7 No. 1, pp. 19-35.

Sheng, A. (1996), *Bank Restructuring: Lessons from the 1980s*, The World Bank, Washington, DC.

Sommerville, R.A. and Taffler, R.J. (1995), "Banker judgment versus formal forecasting models: the case of country risk assessment", *Journal of Banking and Finance*, Vol. 19 No. 2, pp. 281-297.

Stiglitz, J. and Weiss, A. (1981), "Credit rationing in markets with imperfect information", *American Economic Review*, Vol. 71 No. 3, pp. 393-410.

The Banking Act, 2004, (Act 673), Ghana, available at: www.bog.gov.gh/index.php?option=com_content&view=article&id=184&Itemid=163 (accessed 26 January 2016).

Trujillo-Ponce, A., Samaniego-Medina, R. and Cardone-Riportella, C. (2014), "Examining what best explains corporate credit risk: accounting-based versus market-based models", *Journal of Business Economics and Management*, Vol. 15 No. 2, pp. 253-276.

Wang, G.W. and Cox, R.A. (2013), "Risk taking by US banks led to their failures", *International Journal of Financial Services Management*, Vol. 6 No. 1, pp. 39-59.

Weber, O., Scholz, R.W. and Michalik, G. (2010), "Incorporating sustainability criteria into credit risk management", *Business Strategy and the Environment*, Vol. 19 No. 1, pp. 39-50.

Further reading

Christl, J. and Pribil, K. (2004), "Credit approval process and Credit risk management. Oesterreichische national bank and Austrian financial market authority", available at: www.oenb.at/en/img/credit_approval_process_tcm16-23748.pdf (accessed 28 February 2007).

Claus, I. and Grimes, A. (2003), "Asymmetric information, financial intermediation and the monetary transmission mechanism: a critical review", New Zealand Treasury Working Paper, available at: www.treasury.govt.nz/workingpapers/2003/twp03-19.pdf (accessed 12 March 2007).

Edelberg, W. (2004), "Testing for adverse selection and moral hazard in consumer loan markets", Working Paper, available at: www.federalreserve.gov/pubs/feds/2004/200409/200409pap.pdf (accessed 15 March 2007).

Emuwa, E. (2007), "Why banks must embrace risk management?", available at: www.businessdayonline.com (accessed 2 April 2007).

Fatemi, A. (2000), "Risk management practices of German firms", *Managerial Finance*, Vol. 26 No. 3, pp. 1-17.

Ghosh, P., Mookherjee, D. and Ray, D. (1999), "Credit rationing in developing countries: an overview of the theory", available at: www.econ.nyu.edu/user/debraj/Papers/Gmr.pdf (accessed 14 March 2007).

Jaffee, D. and Russell, T. (1976), "Imperfect information and credit rationing", *Quarterly Journal of Economics*, Vol. 90 No. 4, pp. 651-666.

Jensen, M. and Meckling, W. (1976), "Theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3 No. 4, pp. 305-360.

Merton, R.C. and Bodie, Z. (1995), "Financial infrastructure and public policy: a functional perspective", *Harvard Business School Working Paper Number* 95-064.

Redja, G.E. (1998), *Principles of Risk Management and Insurance*, Addison-Wesley, New York, NY.

Santomero, A.M. (1995), "Financial risk management: the whys and how's financial markets", *Institutions and Instruments*, Vol. 4 No. 5, pp. 1-14.

Schmit, J.T. and Roth, K. (1990), "Cost effectiveness of risk management practices", *Journal of Risk and Insurance*, Vol. 57 No. 3, pp. 455-470.

Smith, L.D. and Lawrence, E. (1995), "Forecasting losses on a liquidating long-term loan portfolio", *Journal of Banking and Finanace*, Vol. 19 No. 6, pp. 959-985.

Yin, R.K. (2003), "Case study research: design and methods", 3rd edition, *Applied Social Research Methods Series*, No. 5.

Appendix 1

Name of Bank: ______________________

Number of Years: ______________________

Highest Qualification: ______________________

Position: ____________________

1. What are the main sources of your credit risk exposures?

[A] Corporate and small business commercial loans

[B] Interbank transactions

[C] Trade financing

[D] Foreign exchange transactions

[E] Derivatives

2. What are the main types of credit risk you encounter?

[A] Counterparty Default Risk

[B] Equity Risk

[C] Securitisation Risk

[D] Concentration Risk

[E] Residual Risk

3. How do you mitigate these risks and their exposures?

[A] Collateralised Debt Obligation

[B] Guarantees

[C] Derivatives

4. Do you have credit risk management policies manuals in place?

[A] Yes

[B] No

5. What are some of the provisions in the above manual?

[A] Consideration of cyclical aspects of the economy

[B] Guidelines for the risk identification, reporting and control

[C] Provisions on mitigating techniques

[D] Guidelines on documentation, legal issues and management of problem loans.

[E] Provisions on credit appetites and acceptable levels of risk-reward trade-off for granting credit.

6. Who are responsible for reviewing and approving credit strategies developed by senior management?

[A] Senior Management

[B] Board of Directors

[C] Shareholders

[D] Outside experts

(*continued*)

7. What peculiar roles do the Board of Directors play?
[A] They set out the criteria and limits for the granting of credit.
[B] They assess the performance of senior management
[C] They define the duties and responsibilities of loan officers and the credit committees
[D] They ensure that the credit risk policies and strategies of the banks are effectively communicated throughout the banking organizations.

8. What are the roles of Senior Management?
[A] They are responsible for developing its credit risk strategies and policies
[B] They define acceptable types of loans and maximum maturities for the various types of loans the bank grants.
[C] They are responsible for implementing the strategies and policies reviewed and approved by the board.
[D] They see to it that the loan approval and review responsibilities of the bank are clearly and properly defined and assigned.
[E] They ensure that the credit granting activities of the banks are in line with established strategies and credit standards.
[F] They make provisions for the periodic independent assessment of the banks' credit granting functions through internal audits by personnel either than those responsible for credit origination and approval, external auditors and mandatory supervisors from the Bank of Ghana.

9. Do you have a separate unit in charge of credit administration?
[A] Yes
[B] No

10. What are the functions of the credit administration unit?
[A] Keep credit file up to date
[B] Obtain current financial information
[C] Send renewal notices
[D] Prepare various documents such as loan agreements

11. Do you have procedures and information systems in place to effectively monitor the conditions of individual credits across the banks' various portfolios?
[A] Yes
[B] No

12. What credit risk measurement methodologies do you use to quantify risk exposures?
[A] Experts
[B] Subjective Analyses
[C] Accounting-based method
[D] None

13. What factors are considered by credit risk management techniques?
[A] Loan purpose
[B] Loan maturity

(*continued*)

[C] Financial conditions

14. Do you have in place credit control systems to manage their credit exposures?

[A] Yes

[B] No

15. Are there systems in place that allow for an independent review of their credit granting activities to ensure that the procedures used can effectively manage credit risk exposures.

[A] Yes

[B] No

Corresponding author

Joseph Arthur can be contacted at: jarthur1989@gmail.com