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**Credit Risk Management in Banks of a  
Developing Economy: The Case of Cameroon**

**By**

**Marcus Achu Junior Chi**

**2007**

A Management project presented in part  
consideration for the degree of MBA Financial  
Studies.

# Dedication

To dad

*(May his soul rest in peace)*

## Abstract

*Credit is the largest element of risk in the books of most banks and failure in the management of credit risk weakens individual banks and in some cases the banking system as a whole, thereby contributing to many episodes of financial instability and distress (see Jackson & Perraudin, 1999).*

*"Credit Risk Management in Banks of a Developing Economy: the Case of Cameroon" seeks to find out the techniques used in managing credit risk by four banks in a developing economy (Cameroon) found in Central Africa.*

*To attain this objective, a review is made of the techniques employed generally in managing credit risk by banks as well as credit risk management problems specifically faced by banks in developing economies. This serves as a theoretical and conceptual framework for the study.*

*Following this review, an analysis of the Cameroonian banking industry is carried out with focus on the key players in the industry, the banks constituting the basis of the study and a synopsis of their lending strategies.*

*To establish a balanced argument between theory and practice, qualitative interviews are adopted as a principal means of collecting primary data. Findings indicate that; (i) banks in the Cameroonian banking industry use a number of qualitative (and in some cases both qualitative and quantitative) techniques in managing credit risk, (ii) there is a correlation between the rate of implementation of credit risk management principles and techniques and the rate of default on the overall loan portfolio, and (iii) Information technology plays a significant role in the lending processes of the selected banks.*

*The conclusions necessitate a number of corrective measures to be undertaken by the banks concerned in the study such as; (i) embarking on a more rigorous implementation of credit risk management principles, (ii) diversifying their loan portfolios, (iii) embarking on continuous updating of their IT infrastructures and, (iv) managing credit risk in conjunction with other operational aspects.*

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## Abbreviations

ARM	Account Relationship Manager
BEAC	Bank for Central African States
BIS	Bank for International Settlements
BICEC	Banque Internationale pour le Crédit et l'épargne
BOD	Board of Directors
CBC	Commercial Bank of Cameroon
CLC	Credit Lyonnais du Cameroun
COBAC	Banking Commission for Central African States
EBC	ECOBANK of Cameroon
SCBC	Standard Chartered Bank of Cameroon
SGBC	Société Générale de Banque au Cameroun
SME	Small and Medium Scale Enterprises

# ***CHAPTER ONE:***

# ***Introduction***

## 1.1 Background and Rationale

Banks have been at the heart of economic activity for eight centuries and still play a pivotal role in any sound economy (Fabozzi et al, 2002). Firstly, because they reallocate money or credit from savers who have a temporary surplus of it, to borrowers who can make better use of it (Mishkin, 2006) and secondly, because they are the pivot of the clearing system thereby enabling firms and individuals to fulfil transactions by collaborating to clear payments (Bain & Howells, 2002).

The former role (that of lending), significantly exposes banks to credit risk which is the possibility that promised cash flows on bank assets may not be paid in full or in a timely fashion (Saunders & Cornett, 2006). In either case (be it that of outright default or delay in payment), the present value of the asset declines thereby undermining the solvency of the bank (Heffernan, 2005). Given the crucial role banks play in most economies especially in terms of intermediating funds from savers to borrowers, the logical assertion is that managing credit risk effectively needs to always be part of the basics of banking business (Caprio & Klingebiel, 1996). However, worries still remain as to why the rate of default by borrowers, especially in developing economies continues to be on the rise (Honohan, 1993).

It comes then as no surprise that a school of thought holds that the rise in the rate of default by borrowers (especially in developing economies) may be directly linked to the underdeveloped nature of financial markets<sup>1</sup> in these economies making the mobilisation of capital truly a complicated issue (Davidson, 2002). In fact, financial markets in developing economies (in contrast to financial markets in developed economies) are principally characterised by an inability to process and aggregate information which consequently impedes a successful flow of capital toward its most productive use thereby leading to allocational inefficiency (Nadeem, 2002; Duisenberg, 2001).

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<sup>1</sup> A financial market is a market in which funds are transferred from people who have an excess of available funds to people who have a shortage.

However, there are numerous risks involved in bank lending in developing economies and perhaps this explains why there are increasing concerns over how these have to be effectively managed (Nizam,1998). The major risks tend to be those associated with fundamental credit (default) risk (aggravated by lack of borrower financial information), inflation and interest rate risk (due to thin long-term debt market), lack of liquidity for investments (due to thin secondary debt markets) and concerns over political stability (Vinod, 1991; Willem & Hodgson, 1994). This study focuses on credit or default risk and how it is managed in banks of a given developing economy.

It is however worth mentioning before proceeding that, credit risk management is not only an issue of great concern in banks of developing economies (Casu et al, 2006). In fact, the effect of credit risk is illustrated by banking problems in both developing and developed economies in the 1980s and early 1990s. Equally, the increase in bank failures in both developed and developing countries has on numerous occasions illustrated the frailty of financial systems, their links to events in the real sector and their sensitivity to the macroeconomic framework as a whole (Willem & Hodgson, 1994).

In the late 1980s for example, Japanese banks seduced by the country's apparent economic invincibility, lent masses of money to high risk firms many of which later went bust. Some banks of course followed them in to bankruptcy. In the 1990s bank credit in most Asian countries grew rapidly by between 12%-18% per annum in real terms (Honohan, 1993) and it comes as no surprise that in Indonesia the proportion of loan that is non-performing<sup>2</sup> could be as high as 75% while in Korea non-performing loans amounted to over 150 trillion won in the 1990s. Equally, between 1987 and 1992, US bank failures were running at an average of nearly 200 failures per year. A study by the Regulator of National Banks that failed in the US during the aforementioned period revealed that the key feature was poor loan quality and poor management systems for controlling loan quality.

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<sup>2</sup> A non-performing loan is a loan that has become delinquent or a loan that can not be (easily) recovered as per specific regulatory standards and legal requirements of different countries.

The aforementioned countries are just few of many that have suffered from problems in the banking sector mainly due to poor loan quality. Caprio & Klingebiel (1996) identify 75 countries (developed and developing) that have suffered from severe bank crises and distress leading to insolvency due to uncoordinated lending amongst other salient micro and macroeconomic factors. *See Appendix 1 for a comprehensive list of these countries.*

The big question here is: why do banks persistently face problems in effectively managing their overall loan portfolio? What credit risk management techniques do banks employ to ensure that the probability of default by borrowers is minimized? How effective are these techniques and do they differ from country to country or from one bank to the other? Is the issue of credit risk management simply considered an operational risk issue or does it constitute an integral part of bank management?

This study seeks to find answers to the aforementioned questions by evaluating the impact of credit risk management in banks of a developing economy. The developing economy that forms the basis of this study is Cameroon, a country found in Central Africa with a population of 17 million inhabitants. The choice of Cameroon is justified by the fact that;

- Cameroon is one of the Countries in Central Africa currently experiencing an increase in its non-performing loan portfolio (Fomenky, 2006). In fact, a report by the Banking Commission for Central African States (COBAC) indicates that as at February 2007, 8.21% of all loans given out by banks in Cameroon were non-performing compared to the less than 8% after the banking reforms in the late 1990s and early 2000s.
- One of the simplest explanations of problems faced by banks in Cameroon is ineffective credit risk management leading to non performing loans (Ayaba, 2006). Weaknesses in credit risk management in these banks could easily be traced to poor lending decisions either based on over-optimistic assessment of credit worthiness of borrowers or reliance on unsound lending procedures, strategies and/or practices. Especially, there



is undue concentration of lending in readily available or very risky sectors leading to very high default rates.

- Credit risk management seems to be practised to a meaningful extent by some banks in Cameroon while some banks do not take its application seriously into consideration (Mambo, 2003). This lack of rigorous credit risk management in some Cameroonian banks often accounts for a continuous deterioration in the present value of loans in the banks in question often leading to a drop in margins and liquidity (Tazah, 2005).
- Cameroon is the Headquarters of the Bank of Central African States (BEAC) and remains an attractive country for banking business and activities in Central Africa. As at 2004, it had 10 out of the 32 banks in the Central African Sub Region with Central African Republic having 3, Congo 6, Equatorial Guinea 3 and Chad 3 (UBC Annual Report, 2004).

In order to throw more light on the research problem, data on the lending techniques, strategies and procedures used by four out of 10 banks in Cameroon (two domestic banks and two multinational banks) in determining the probability of default is presented. The domestic banks include; Commercial Bank of Cameroon (CBC) and Union Bank of Cameroon (UBC). ECOBANK of Cameroon and Standard Chartered Bank of Cameroon are the two multinational Banks that shall equally constitute the basis of analysis.

## **1.2 Objectives of the study**

The main objective of this study is;

- *To determine how banks in a developing economy (Cameroon) manage credit risk.*

Minor objectives include;

- To assess the impact of credit risk management on the overall loan portfolio of these banks

- To assess the impact of credit risk management on the solvency of these banks
- To compare and contrast the credit risk management techniques used by multinational banks in Cameroon with those used by domestic banks
- To assess the impact of Information Technology on credit risk management in each of these banks
- To recommend based on findings, ways of improving on the techniques used by the selected banks in managing credit risk.

### **1.3 Assumption**

Ineffective credit risk management leads to non-performing loans which consequently put a bank's solvency at stake.

### **1.4 An outline of the study**

This report comprises of 6 interlinked chapters, each dealing with a specific aspect of the study. Each chapter builds on the previous chapter to present a coherent and comprehensive argument. The following section gives an abridgement of the ensuing chapters:

#### **Chapter One: Introduction**

This chapter outlines the overall framework of the study. It introduces credit risk and explains why its effective management is of essence especially in developing economies. It also explains why Cameroon is a suitable case for the study, states the objective (s) of the study and clearly outlines the underlying hypothesis for the study. It equally presents an overview of the overall structure of the study. The purpose of this chapter is to place the study into perspective by drawing on topical issues that motivated it;

#### **Chapter Two: Credit Risk Management: a Review**

This chapter is consecrated to a review of relevant literature on credit risk and how it can be managed. It outlines the meaning of credit risk and the qualitative and quantitative methods generally used in predicting default probability. This serves as a conceptual and theoretical framework for the study;

### **Chapter Three: A Review of the Cameroonian Banking Industry**

This chapter presents an overview of the banking industry in Cameroon and proceeds to explain why only four out of the ten banks in Cameroon are suitable for this study. It equally presents a summary of the lending strategies and policies of each of the chosen banks;

### **Chapter Four: Methodology**

This Chapter presents an outline of the methods used in collecting and analyzing data. It equally highlights the objective of the methodology and builds on this to justify and point out the strengths of the data collection methods. The limitations of the methods are examined thereof with the difficulties encountered in evaluating and applying them;

### **Chapter Five: Presentation and Analysis of Data**

This chapter presents an analysis of collected data. It critically analyses the various lending procedures of each of the four banks and exhibits the correlation between credit risk management techniques as outlined in the credit policy of each of these banks and the rate of default by borrowers. It equally compares and contrasts the credit risk management techniques used by these banks and examines the role played by information technology in the credit risk management process;

### **Chapter Six: Conclusions and Recommendations**

Chapter six (the last chapter), is consecrated to conclusions based on findings and recommendations. An outline of the issues behind credit risk management is presented and possible reasons for ineffective credit risk management are

examined. Recommendations are made based on these conclusions and areas worth researching into in the future are identified;

## **Bibliography**

The bibliography acknowledges the work of all other authors consulted, used or quoted in the study.

## **1.5 Chapter summary**

This chapter placed the study in to context by giving a broad overview of the study area. It equally highlighted the motivations behind the study, the objectives of the study, the assumptions underlying the study and the study's overall structure.

The next chapter (chapter two), concentrates on the concepts and theories on credit risk and the various qualitative and quantitative methods that are used in measuring and managing it.

***Chapter 2:***  
***Credit Risk***  
***Management: a***  
***Review***

## 2.1 Chapter Preview

Banks are traditionally exposed to a number of risks notably; interest rate risk<sup>3</sup>, market risk<sup>4</sup>, liquidity risk<sup>5</sup> and credit risk (Saunders & Cornett, 2006). In this chapter, focus shall be on relevant literature on credit risk and its management. The chapter begins with a definition of credit risk and proceeds to reviewing the various techniques (methods) employed in its management by banks. A review of the problems specifically faced by banks in developing economies in managing credit risk forms the concluding part of the chapter. This chapter serves as a conceptual and theoretical framework for this study.

## 2.2 What is Credit Risk?

Credit risk is the risk of changes in value associated with unexpected changes in credit quality (Duffie & Singleton, 2003) or risk that an asset or a loan becomes irrevocable in the case of outright default or the risk of delay in the service of the loan (Heffernan, 2005). Simply defined, credit risk is the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms (Jackson, 1999). The aforementioned definitions highlight two major components of credit risk;

- i) the risk that a borrower or counterparty will default
- ii) the risk that a borrower or counterparty may not repay promised cash flows in full or in a timely fashion

These components of credit risk (undoubtedly) place an accent on the fact that credit risk remains one of the major risks faced by banks and continues to be the leading source of problems to banks worldwide (Mishkin, 2006; Saunders & Cornett, 2006; Duffie & Singleton, 2003; Jackson, 1999). This of course explains why there is great need for banks to be able to identify, measure, monitor and control it. In fact, the effective management of credit risk is essential to the long-

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<sup>3</sup> Interest rate risk is risk that arises from interest rate mismatch in both the volume and maturity of interest rate sensitive assets and liabilities

<sup>4</sup> Market risk is the uncertainty resulting from changes in market prices. It can be measured over periods as short as one day

<sup>5</sup> Liquidity risk is the risk that a bank is holding insufficient liquid assets on its balance sheet and thus is unable to meet requirements without impairment to its financial or reputation capital

term success of any banking organisation (Basel Committee on Banking supervision, 1999).

Some people may argue that the above assertion has little premise given that on its own, it does not explain how a bank stands to be affected if it does not effectively manage the risk involved in its lending. To solve this inevitable puzzle, mention should be made of the fact that credit quality problems, in the worst case, can cause a bank to become insolvent or can result to a significant drain on its capital thereby affecting its growth prospects and ability to compete with other domestic and international banks (Casu et al, 2006). Simply speaking thus, credit risk reduces the value of a bank's assets thereby undermining its solvency (Caouette, 1998). Because of its impact on the value of a bank's assets and solvency, managing credit risk effectively needs to be taken *very* seriously in bank management. The example below is used to illustrate how ineffective credit risk management can affect a bank's solvency:

It is assumed that MAJC Bank plc is a newly opened bank with just fixed assets and cash on the asset side of its balance sheet. It is further assumed that no deposits/savings have yet been received by MAJC Bank plc thereby leaving us with only owners' equity to contend with on the liability side. The balance sheet of MAJC Bank plc at the start of business will be as illustrated below in table 1:

**Table 1: Balance sheet of MAJC Bank plc as at xx/xx/xxxx**

<b>Assets</b>	<b>Amount (in millions of pounds)</b>	<b>Liabilities</b>	<b>Amount (in millions of pounds)</b>
Fixed Assets	5	Owners' Equity	10
<b>Current Assets</b>			
Cash	5		
	<b>10</b>		<b>10</b>

*The balance sheet above illustrates that at the start of business, MAJC Bank plc had £10 million pounds in owners' equity which was used in acquiring some fixed assets worth £5 million and the remaining £5 million held in cash. If later MAJC Bank plc receives £200 million pounds in deposits and gives out 10% of this as loans, its balance sheet will now look as illustrated below:*

**Table 2: Balance sheet of MAJC Bank plc as at xx/xx/xxxx**

<b>Assets</b>	<b>Amount (in millions of pounds)</b>	<b>Liabilities</b>	<b>Amount (in millions of pounds)</b>
Fixed Assets	5	Owners' Equity	10
<b>Current Assets</b>			
Cash	25	Deposits	200
Loans	180		
	<b>210</b>		<b>210</b>

Once again, the balance sheet above shows the situation of MAJC Bank plc after it engaged in receiving deposits and in lending. As could be noticed, loans worth £180 million were given out from the £200 million that came in as deposits while the cash reserve increased by £20 million, now giving a total of £25 million. The balance sheet size has equally increased from £10million to £210 million.

If it is assumed that MAJC Bank plc engaged in risky lending to a given sector that suddenly was seriously affected by a severe economic recession leading to £20 million in non-performing loans (which had to be written off as a consequence), the situation of MAJC Bank plc shall now look as follows;

**Table 3 Balance sheet of MAJC Bank plc as at xx/xx/xxxx**

<b>Assets</b>	<b>Amount (in millions of pounds)</b>	<b>Liabilities</b>	<b>Amount (in millions of pounds)</b>
Fixed Assets	5	Owners' Equity	-10
<b>Current Assets</b>			
Cash	25	Deposits	200
Loans	160		
	<b>190</b>		<b>190</b>

The balance sheet above clearly shows that the value of the assets of MAJC Bank plc has dropped below the value of its liabilities (because of the £20 million in non-performing loans) and its net worth is now -£10 million (because this loss had to be compensated for by owners' equity). Also worthy of note is the decrease in the size of the balance sheet (from £210 million to £190 million). Because the bank has a negative net worth, it is insolvent. What this simply means is that MAJC Bank plc does not have sufficient assets to pay off all holders of its liabilities.



The case of MAJC Bank plc above may look too stylised and theoretical, but it clearly illustrates how ineffective credit risk management can reduce the present value of a bank's assets, consequently leading it to insolvency.

Given the above analysis, it is important now to establish a solid foundation for a clear understanding of the various credit risk management concepts that shall be examined later in this chapter. To attain this salient objective, a review is made below of two major concepts underlying the credit granting process. These concepts are;

- i) The asymmetric information<sup>6</sup> problem of adverse selection
- ii) The asymmetric information problem of Moral hazard

### **2.3 Adverse Selection**

Adverse selection is an asymmetric information problem which arises because bad credit risks (those most likely to default on their loans) are the ones who usually line up for loans. This implies that those who are most likely to produce an adverse outcome are the ones most likely to be selected during the credit granting process (Mishkin, 2007). *The question at this point is: what do bankers need to do in order to minimize the problem of adverse selection during the credit granting process?* To answer this question, the various methods used by banks to curb the problem of adverse selection shall be examined later in this chapter. Note however that, adverse selection occurs before the credit granting transaction is engaged.

### **2.4 Moral Hazard**

Moral hazard as opposed to adverse selection exists because borrowers may have incentives to engage in activities that are undesirable from the lender's point of view once a loan is granted (Casu et al, 2006; Mishkin 2007). In such a situation, it is most likely that the lender will be subjected to the hazard of

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<sup>6</sup> Asymmetric information is a situation that arises when one party's insufficient knowledge about the other party involved in a transaction makes it impossible to make accurate decisions when conducting the transaction.

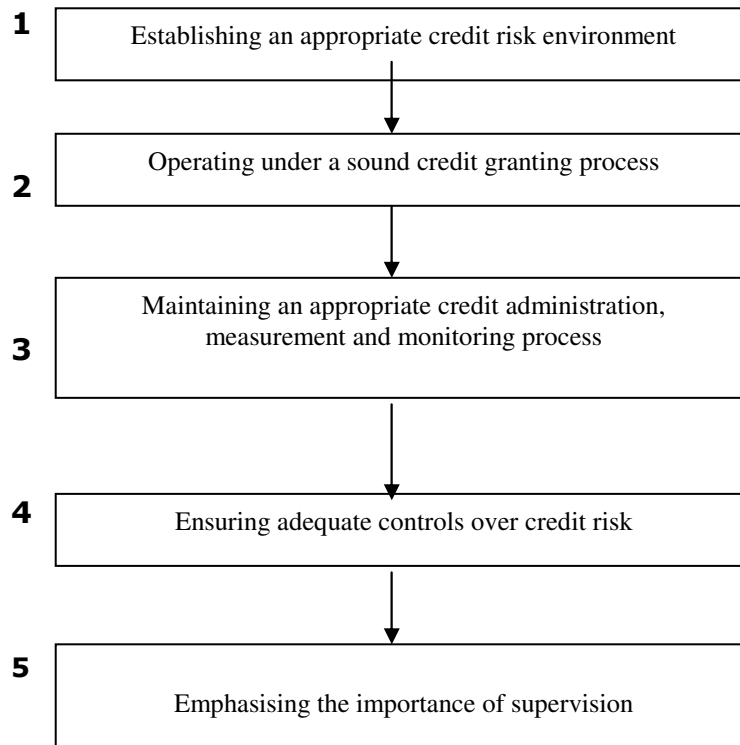
default. Rationally, once borrowers have obtained a loan, they are most likely to engage in more risky investments thereby making it less likely that they will repay their loan normally. *Another question at this stage therefore is: what should bankers do in order to minimize the problem of moral hazard?* Again, these shall be examined later in this chapter.

With an understanding of how ineffective credit risk management can affect a bank's solvency and a review of the key concepts influencing the credit granting process as a whole, the big question then is: how can credit risk be managed? How have banks been able to traditionally minimise the rate of default by loan applicants and existing borrowers in order to improve on their productivity (or profitability) and to stay in business?

Before providing answers to these questions, the principles of credit risk management shall first be explained in the section that follows. These shall serve as a basis for an understanding of the various credit risk management techniques to be examined later in this chapter.

## **2.5 Principles of Credit Risk Management**

Following the discussion above, it goes that banks must make successful loans that are paid in full (and so subject to little credit risk) if they are to earn high profits (Crouhy, 2000). The Bank for International Settlements (1999) identifies a number of sound principles which if followed, could significantly help banks in making successful loans and hence improve on their profitability. These principles are summarised under five principal headings schematically illustrated below in figure 1:

**Figure 1: Credit Risk Management Principles**

The figure above is a simple illustration of the principles (steps) involved in sound lending practices. Each of the principles and an explanation of what it entails will be looked at.

### **1 Establishing an Appropriate Credit Risk Environment**

The first principle in successful credit risk management is establishing an appropriate credit risk environment (Kimber, 2003). This simply requires the Board of Directors (BOD) of a bank to have responsibility of periodically (and at least annually) reviewing the credit risk strategy and significant credit risk policies of the bank (Reto, 2003). Of course, the strategy should reflect the bank's tolerance for risk and the level of profitability the bank expects to achieve for incurring various credit risks.

Secondly, establishing an appropriate credit risk environment equally requires senior management to have responsibility for implementing the credit risk strategy approved by the BOD and for developing policies and strategies for identifying, measuring, monitoring and controlling credit risk (Mays, 1998). In

fact, such policies and procedures should address credit risk in all of the bank's activities and at both the individual credit and portfolio levels.

The third arm of ensuring an appropriate credit risk environment is that banks should ensure that the risks of products and activities new to them are subject to adequate risk management procedures and controls before being introduced (Shimko, 1999).

## **2 Operating Under a Sound Credit Granting Process**

Operating under a sound credit granting process requires that a bank must operate within sound, well defined credit – granting criteria. This implies that, selected criteria should be a clear indication of the bank's target market and must illustrate a thorough understanding of the borrower or counterparty as well as the purpose and structure of the credit and its source of repayments (Cossin & Pirotte 2000).

Secondly, operating under a sound credit granting process also means that banks should establish overall credit limits at the level of individual borrowers and counterparties that aggregate in comparable and meaningful manner, different types of exposures (Lyn, 2002).

Thirdly, a sound credit granting process will obviously require banks to have a clearly established process in place for approving new credits as well as the amendment, renewal and re-financing of existing credits (Saunders & Allen, 2002).

Finally, all extensions of credit must be made at arms - length basis. In particular, credit to related companies and individuals must be authorised on an exception basis, monitored with particular care and other appropriate steps taken to control and mitigate the risk of non –arm's length lending (Mohan, 2000).

### **3 Maintaining an Appropriate Credit Administration, Measurement and Monitoring Process**

Maintaining an appropriate credit administration, measurement and monitoring process should constitute an integral part of credit risk management (Fight, 1998). To attain this salient objective, banks must;

- have in place a system for the administration of their various credit risk bearing portfolios.
- have in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves.
- be encouraged to utilize an internal risk rating system in managing credit risk. The rating system should of course be consistent with the nature, size and complexity of the bank's activity.
- have information systems and analytical techniques that enable management to measure the credit risk inherent in all on and off-balance sheet activities. This system should be able to provide adequate information on the composition of the credit portfolio, including identification of any concentrations of risk.
- put in place a system for monitoring the overall composition and quality of the credit portfolio.
- take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios. Banks should equally be able to assess their credit risk exposures under stressful conditions.

#### **4 Ensuring Adequate Controls Over Credit Risk**

One of the fundamental principles of credit risk management is that of ensuring adequate controls over credit risk (Kimber, 2003). To attain this objective, a bank must;

- establish a system of independent, ongoing assessment of its credit risk management processes and the results of such reviews should be communicated directly to the BOD and senior management (Shimko, 1999).
- ensure that the credit granting function is being properly managed and that credit exposures are within levels consistent with prudential standards and internal limits (Caouette, 1998). Banks should therefore, establish and enforce internal controls and other practices to ensure that exceptions to policies, procedures and limits are reported in a timely manner to the appropriate level of management for action.
- have a system in place for early remedial action on deteriorating credits, managing problem credits and similar workout situations.

#### **5 Emphasizing the Importance of Supervision**

Supervision plays an integral part in ensuring that sound lending practices are implemented by banks (Servingny, 2004). Banks therefore need to have supervisors who need to;

- ensure that they have an effective system in place to identify, measure, monitor and control credit risk (Altman, 2005). In fact, this needs to be part of an overall approach to risk management.
- conduct an independent evaluation of a bank's strategies, policies, procedures and practices related to the granting of credit and the ongoing management of the portfolio (Jochen et al, 2005).

- consider setting prudential limits to restrict banks' exposures to single borrowers or group of connected counterparties.

With a basic understanding of the principles involved in credit risk management, the various models that can be used in ascertaining the probability of default by borrowers in order to manage the risk involved in lending is next examined. It is worthwhile to mention that, predicting the probability of default constitutes an integral part of the loan screening process which arises because of the asymmetric information problem of adverse selection.

## **2.6 Models of Credit Risk Management**

Failures in credit risk management can significantly weaken individual banks and the banking system as a whole (Vinod, 1991; Jackson & Perraudin, 1999). This implies that the goal of credit risk management is (undoubtedly) to maximise a bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable parameters (Bank for International Settlements, 1999).

The above assertions imply that, a greater understanding of the nature of credit risk, leading to improved measurement and management, would help to strengthen, not only the financial systems of individual countries but the international financial system as a whole (Crouhy, 2000). The question at this point in time is; how can the probability that a loan applicant or existing borrower will default or become delinquent be predicted or ascertained with a reasonable degree of certainty? More so, in cases where clear procedures of ascertaining this probability even exist, a big worry will inevitably reside in determining how effective they are in terms of their impact on individual borrowers and the overall loan portfolio.

To establish an appropriate framework for an easy interpretation and understanding of the various credit risk management models that will be reviewed in this chapter, it is of essence that we remember as progress is made that there are a number of separate ways in which the probability of default can be assessed in loan management. This could be by informal judgement based on

company visits and accounting information (Tudela and Young, 2000) , by formal quantitative analysis of accounting information and other disclosures (Saunders & Cornett, 2006) or by formal quantitative analysis of market based indicators (Mishkin, 2007).

For the purpose of this analysis and for an easy illustration and understanding of how some major concepts in credit risk management correlate with the findings in chapter five, a look at the various credit risk management models from two perspectives is worthwhile. These perspectives are;

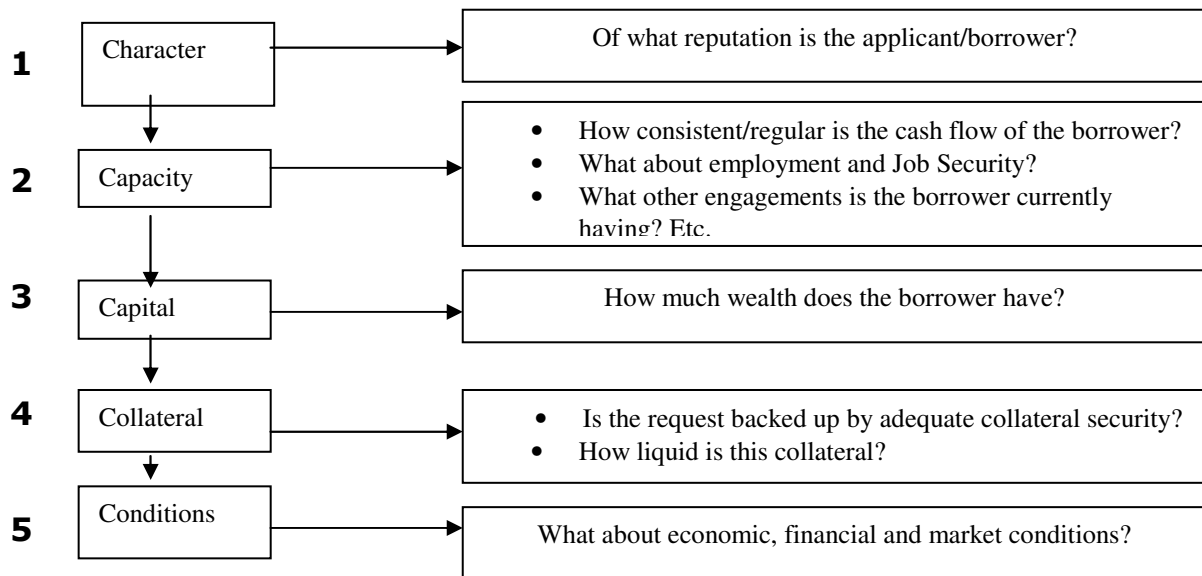
- The qualitative techniques used in predicting the probability of default
- The quantitative techniques used in predicting the probability of default

### **2.6.1 Qualitative Techniques**

Traditionally, banks use a number of qualitative techniques to determine whether or not a loan applicant or existing borrower shall default or become delinquent. Perhaps one of the most commonly used qualitative techniques by banks is that of looking at past default rates for borrowers with characteristics similar to those of the obligor in question (Jackson & Perraudin, 1999).

Banks equally rely on borrower and market specific factors in determining whether or not a borrower will default. Borrower specific factors may include factors such as reputation, leverage, volatility of earnings, covenants and collateral while market specific factors may include factors such as the business cycle and interest rate levels (Saunders & Cornett, 2006). A summary of this qualitative appraisal of borrowers is made in a simplified framework which will be referred to in this study as the Five Cs of Credit Management. The figure below schematically illustrates this:



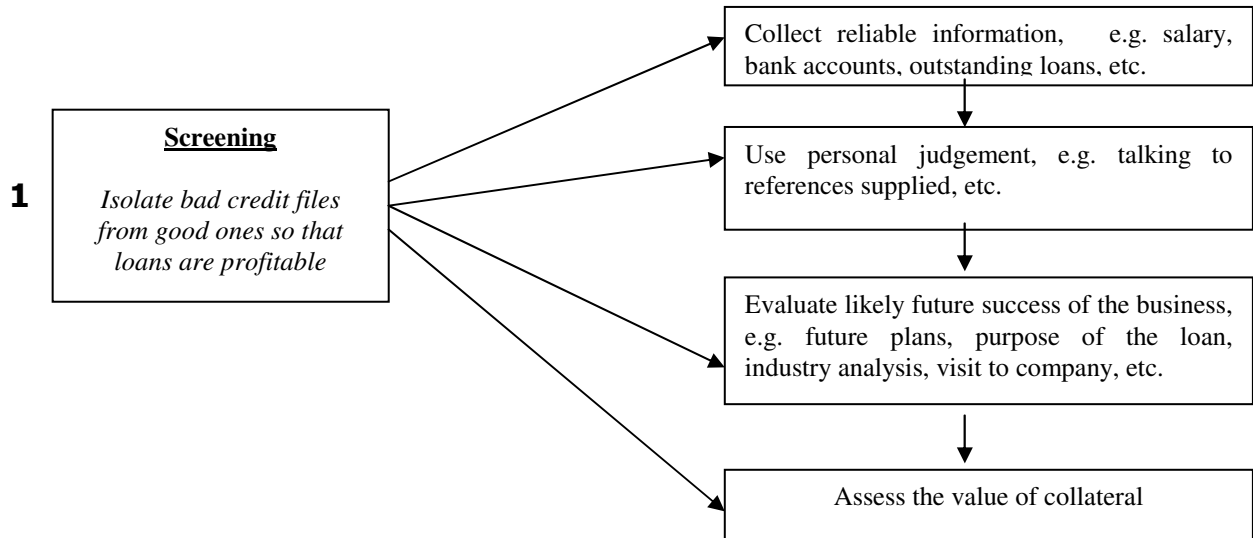
**Figure 2: The Five Cs of Credit Management**

The figure above is a schematic presentation of the Five Cs of credit risk management. The five Cs of credit risk management help banks greatly in making credit granting decisions. It could be said that they constitute a major starting point in the credit granting process.

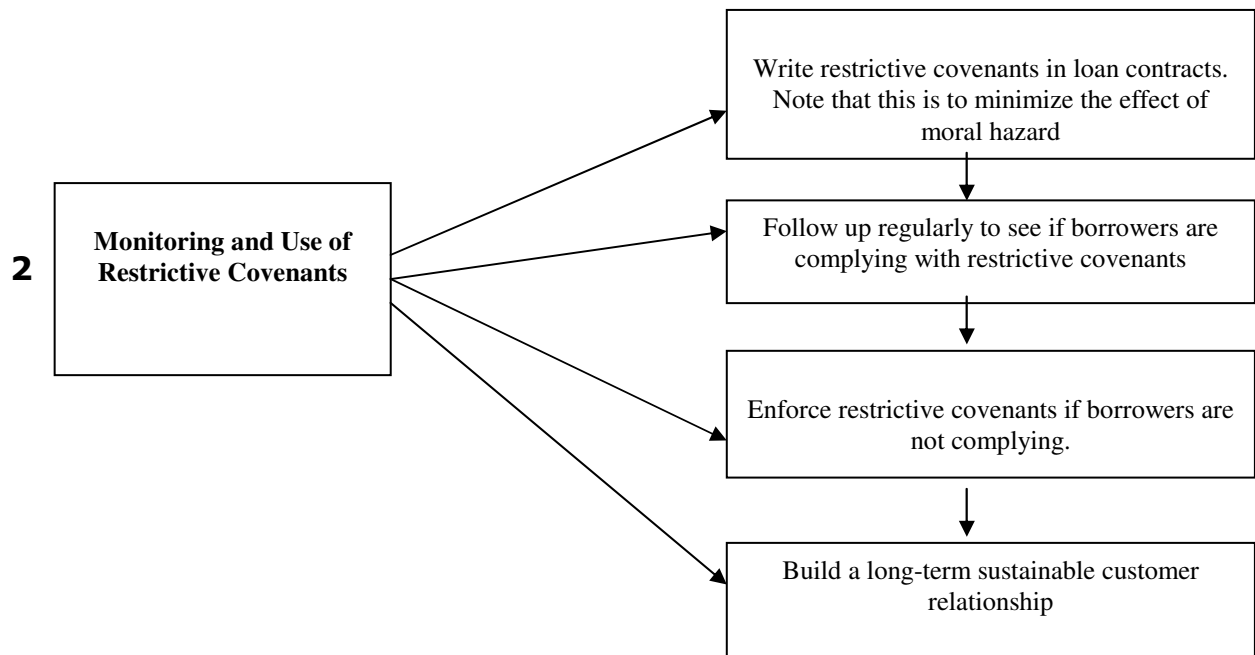
To further explain the qualitative approach to credit risk management, another simplified framework which clearly explains the principles involved in qualitative credit risk management is presented below.

### **2.6.1.1 The Qualitative Credit Risk Management Process**

The qualitative credit risk management process involves two key processes both influenced by the asymmetric information problem of adverse selection and moral hazard as reviewed earlier in this chapter. These processes are screening (due to the asymmetric information problem of adverse selection) and monitoring (due to the asymmetric information problem of moral hazard). These two processes are the pivot of the qualitative credit risk management approach. Below is a schematic examination of these two processes and the strategies banks employ in each of them to minimize the rate of default by borrowers on their overall loan portfolios.

**Figure 3: Qualitative Credit Risk Management Process**a) Before a Loan is contracted

The figure above illustrates some basic stages involved in the loan screening process. As can be seen there is need for reliable information to be collected at the initial stage. Lending officers then have to use their judgement to decide whether the loan should be given or not based on the reliability of the information given/collected. In the case of a business loan, the future success of the business needs to be equally determined. An important step is finally to assess the quality of the security pledged for the loan.

b) After a Loan is granted

*The figure above illustrates what needs to be done when a loan is granted. The steps involved are strictly steps meant to curb the effect of moral hazard which constitutes the basis for monitoring and the implementation of restrictive covenants. The initial step once a loan is granted (which equally marks the beginning of the monitoring phase), is the writing of restrictive covenants in the loan contracts. Measures must then be taken to ensure that restrictive covenants are respected by borrowers. In the case where there is divergence from the restrictive covenants, there should immediately be enforcement. Key to all of these steps is the endeavour to continuously build a sustainable (long -term) relationship with borrowers (customers).*

Now, with a fair understanding of how qualitative methods could be used in managing credit risk, let us proceed by looking at various quantitative techniques used in predicting the probability of default by borrowers.

## **2.6.2 The Quantitative Credit Risk Management Techniques**

Several statistical methods are used to predict the probability of default by borrowers (Mester, 1997; Mays, 1998; Shimko, 1999; Saunders & Allen, 2002).

In fact, quantifying the risk of default in various borrowers using various statistical methods can significantly reduce the risk involved in lending (Tudela & Young, 2003). One of the most popular statistical methods used in predicting the probability of default is credit scoring (Mester, 1997; Lyn, 2002). In order to have a fair understanding of the various statistical (quantitative) models that will be discussed later in this chapter, it is important first of all to present a general idea of what credit scoring is all about.

### **2.6.2.1 What is Credit Scoring?**

Credit scoring is a statistical method used to predict the probability that a loan applicant or existing borrower will default or become delinquent (Mester, 1997). It is thus a method of evaluating the credit risk of loan applications based on historical data and statistical techniques (*which shall be examined later in this chapter*). The major role of credit scoring is to isolate the effect of various applicant characteristics on delinquencies and defaults (Ong, 1999). This simply produces a score that a bank can use to rank its loan applicants or borrowers in terms of risk. The table below is an illustration of a Credit Scoring System Characteristics and Weights.

**Table 4: Sample Credit Scoring System Characteristics and Weights**

		POINTS			POINTS
<b>1</b>	<b>Own or rent principal residence</b>		<b>6</b>	<b>Major credit card/Dept. Store</b>	
<b>a</b>	Owns/buying	40	<b>a</b>	Major CC(s) and Dept Store(s)	40
<b>b</b>	Rents	8	<b>b</b>	Major CC(s) only	40
<b>c</b>	No answer	8	<b>c</b>	Dept. Stores only	30
<b>d</b>	Other	25	<b>d</b>	None	10
<b>2</b>	<b>Time at present Address</b>		<b>7</b>	<b>Finance Company reference</b>	
<b>a</b>	under 6 months	12	<b>a</b>	one	15
<b>b</b>	6 months - 2 years	15	<b>b</b>	two or more	10
<b>c</b>	2years -6.5 years	22	<b>c</b>	None	5
<b>d</b>	over 6.5years	35	<b>d</b>	No answer	10
<b>e</b>	No answer	12	<b>8</b>	<b>Income</b>	
<b>3</b>	<b>Time with present employer</b>		<b>a</b>	\$0 - 15000	5
<b>a</b>	under 1.5 years	12	<b>b</b>	\$15000 - 25000	15
<b>b</b>	1.5 - 3years	15	<b>c</b>	\$25000 - 40000	30
<b>c</b>	3years - 5.5 years	25	<b>d</b>	over \$40000	50
<b>d</b>	Over 5.5 years	48	<b>9</b>	<b>Monthly Payments</b>	
<b>e</b>	Retired	48	<b>a</b>	\$10 -200	35
<b>f</b>	Unemployed with public assistance	25	<b>b</b>	\$200 -500	25
<b>g</b>	Homemaker	25	<b>c</b>	over 500	10
<b>h</b>	Unemployed - no public assistance	12	<b>d</b>	No payments	45
<b>i</b>	No answer	12	<b>e</b>	No answer	10
<b>4</b>	<b>Applicant's age</b>		<b>10</b>	<b>Derogatory Ratings</b>	
<b>a</b>	under 45	4	<b>a</b>	No investigations	0
<b>b</b>	45 years or older	20	<b>b</b>	No record	0
<b>c</b>	No answer	4	<b>c</b>	two or more derogatory	-20
<b>5</b>	<b>Banking Reference</b>		<b>d</b>	One derogatory	0
<b>a</b>	Checking and savings	60	<b>e</b>	All positive ratings	15
<b>b</b>	Checking	40			
<b>c</b>	Savings	40			
<b>d</b>	Loan and checking and/or savings	30			
<b>e</b>	loan only	10			
<b>f</b>	None given	10			
<b>g</b>	No answer	10			

The table above is a clear and simple illustration of a Credit Scoring System highlighting its main characteristics and weights. Note that regression analysis<sup>7</sup> relating loan performance to the stated variables is used to pick out which combination of factors best predicts delinquency or default and how much weight should be given to each of the factors. In most scoring systems, a higher score indicates lower risks and lenders set a cut-off score based on the amount of risk they are willing to take.

<sup>7</sup> Regression analysis examines the relation of a dependent variable (response variable) to specified independent variables (explanatory variables).

### **2.6.2.2 Origin of Credit Scoring**

Credit scoring was introduced in the 1950s and is widely used for consumer lending, especially credit cards. However, it is becoming commonly used in mortgage lending as well. It is worth noting that, so far it has not been widely used in business lending but this too is changing. It is argued that the reason for this lies in the fact that business loans typically differ substantially across borrowers making it harder to develop an accurate method of scoring (Saunders & Cornett, 2006). However, the advent of new methodologies, enhanced computer power and increased data availability have helped to make such scoring possible and many banks are beginning to use scoring to evaluate business loans (Mester,1997; Duffie & Singleton, 2003) .

### **2.6.2.3 Benefits of Credit Scoring**

Mester (1997) identifies a number of benefits that accrue from credit scoring:

- It reduces the time needed in the loan approval process. A study by the Business Banking Board found that the traditional loan approval process averages about 12 hours per small business loan with lenders taking averagely two weeks to process a loan. Credit scoring can reduce this time to well under 1 hour. This is valuable time and cost savings for the bank and plays an integral role in customer relationship management as well.
- It increases efficiency by allowing loan officers to concentrate on the less clear-cut cases, even if a bank does not want to depend solely on it for making its credit decisions.
- It is one part of an automated loan system which enables banks to offer loans (even) over the phone or via direct mail thereby minimising the cost of setting extensive and costly branch networks.
- It improves objectivity in the loan approval process. This objectivity helps lenders ensure they are applying the same underwriting criteria to all

borrowers regardless of race, gender, or other factors prohibited by law from being used in credit decisions.

Having reviewed some basics about credit scoring, various credit scoring models shall next be examined. These of course, shall serve as a yardstick to an understanding of how the probability of default can be ascertained quantitatively.

## **2.7 Quantitative Models of Measuring and Managing Credit Risk**

Several statistical models are used to develop credit scoring systems. These shall be examined under three main headings;

- The traditional Credit scoring models
- Newer models of credit risk measurement and pricing
- Recent developments in credit risk modelling

### **2.7.1 The Traditional Credit Scoring Models**

The traditional credit scoring models are standard statistical techniques for estimating the probability of default based on historical data on loan performance and characteristics of the borrower. Saunders and Cornett (2006) identify four of these models:

- Linear Probability Model
- Logit Models
- Probit Models
- Discriminant Analysis

#### **2.7.1.1 Linear Probability Models**

Simply defined, Linear Probability Models are econometric models in which the dependent variable is a probability between zero and one. Linear Probability Models assume that there is a linear relationship between the probability of default and the explanatory factors. As the name goes, the probability of an event occurring,  $P$ , is assumed to be a linear function of a set of explanatory factors (Dougherty, 2002).

The linear probability model has however, fallen into disfavour because it can yield predicted probabilities outside the 0-1 interval (Caudill, 2004). Given this weakness, the model is statistically unsound since the probabilities obtained may not be probabilities at all. There is therefore a difficulty of interpreting probabilities greater than 1 or less than zero making the model less reliable (Aldrich & Forrest, 1985).

However, there are some parameters of interest that can be estimated in the linear probability model. If for instance the model contains a dummy variable<sup>8</sup>, this can be estimated easily unlike in the case of the Logit and Probit models (see *below*). However, given the emergence of superior statistical techniques in determining default probability, there is little justification for employing Linear Probability Models today.

### **2.7.1.2 Logit Models**

The Logit Model is a particular type of binary regression model which can equally be used to determine the probability of default. This model overcomes the weakness of the Linear Probability Model simply by using a transformation (logistic function) that restricts the probability to the zero-one interval (Saunders & Cornett, 2006). The underlying assumption governing the Logit model is that the probability of default is logistically distributed unlike in the Linear Probability Model where a linear relation in variables is assumed. The Logit model is therefore comparatively and relatively more reliable.

### **2.7.1.3 Probit Models**

Another alternative to the Linear Probability and Logit Models is the Probit Model. The Probit Model assumes that the probability of default has a (cumulative) normal distribution (Saunders & Allen, 2002). A Probit Model can simply be defined as an econometric model in which the dependent variable  $y_i$  can only be one or zero, and the continuous independent variables  $x_i$  are estimated in:

$$\Pr (y_i=1) =F (x_i'b)$$

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<sup>8</sup> A dummy variable is a numerical variable used in regression analysis to represent subgroups of a sample.



Here  $b$  is a parameter to be estimated, and  $F$  is the normal cumulative distribution function. Note that The Logit model is the same but with a different Cumulative distribution function for  $F$ .

### 2.7.1.4 Discriminant Analysis

Discriminant analysis is also used in determining the likelihood of a loan applicant or a borrower defaulting. It is however important to note that it differs from the aforementioned three models in the sense that instead of estimating a borrower's probability of default, it divides borrowers into high and low default-risk classes (Altman, 2005). A widely used Discriminant model is the Altman's Linear Discriminant Model. Mathematically, this can be expressed as;

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

Where;       $X_1$  = working Capital/total assets  
                   $X_2$  = Retained earnings/total assets  
 .....       $X_3$  = Earnings before interest and taxes/Total assets  
                   $X_4$  = Market value equity/book value long term debt  
                   $X_5$  = Sales / total assets

*Note: Z has a critical value of 1.8*

Despite its applicability, the Altman's Linear Discriminant Model has a number of shortcomings. In the first instance, it only considers two extreme cases (default/no default). Secondly, assigned weights are stationary over time. This is not realistic. Thirdly, it completely ignores hard to quantify factors including business cycle effects. Finally, there is no availability of a database of defaulted loans to benchmark the model.

### 2.7.2 Newer Models of Credit Risk Management

Newer models of credit risk measurement and pricing are becoming increasingly of importance in determining the probability of default (Saunders & Cornett, 2006; Mishkin, 2006; Mester, 1997). These methods have the potential to be

more useful in developing models for commercial loans which tend to be more heterogeneous than consumer or mortgage loans (Mester, 1999). The newer models of credit risk measurement that will be examined in this paper include;

- Term Structure Based Models
- Mortality Rate Models
- Risk Adjusted Return on Capital (RAROC)

### **2.7.2.1 Term Structure Based Models**

The Term Structure Based Model is one of the newest models of credit risk management. This model simply stipulates that, given the risk premium, the probability of default can be inferred (Deventer, 2003). Simply speaking, the model states that expected return equals risk free rate after accounting for probability of default. It is important to note that term Structure Based Models may be generalised to loans with any maturity or to adjust for varying default recovery rates. Ong MK (2002) states that, using the Term Structure Based Model, a loan can be assessed using the inferred probabilities from comparable quality bonds. This is an integral part of the credit screening process.

### **2.7.2.2 Mortality Rate Models**

Another new model of determining default probability and hence managing credit risk effectively is the Mortality Rate Model. This is very similar to the process employed by insurance companies to price policies. Simply speaking, the probability of default is estimated from past data on defaults using Marginal Mortality Rates (MMR). The MMR can be calculated as illustrated below.

$$\text{MMR}_1 = \frac{(\text{Value Grade B default in year 1})}{(\text{Value Grade B Outstanding year 1})}$$

$$\text{MMR}_2 = \frac{(\text{Value Grade B default in year 2})}{(\text{Value Grade B Outstanding year 2})}$$

### **2.7.2.3 Risk Adjusted Return on Capital (RAROC)**

The Risk Adjusted Return on Capital (RAROC) is one of the more widely used models in credit risk measurement. Broadly speaking, RAROC is a risk based profitability measurement framework for analyzing risk-adjusted financial performance and for providing a consistent view of profitability across businesses (Warren & Mamhikoff, 2003).

In terms of credit risk measurement, this model incorporates duration approach<sup>9</sup> to estimate worst case loss in the value of a loan. Despite its applicability, Dermine (1998) identifies five pitfalls in the application of RAROC in loan management. These pitfalls include; the use of a single hurdle rate, the timing of loan provisions, the duration of funding, the time horizon for equity allocation and the under-identified benefits of portfolio diversification. In fact, Dermine argues that without explicit recognition of these issues by senior bank management, the application of RAROC to risk-adjusted performance measurement can produce misleading information.

### **2.7.3 Recent Development in Credit Risk Modelling**

The most recent credit risk models are today referred to as Value at Risk (VaR) models. These models generally estimate for a portfolio of credit exposures, the loss over a particular time horizon which will be exceeded on not more than 0.5% of occasions (Ong, 2002). This can therefore be considered the Value at Risk (VaR) estimated with 99.5% of confidence.

Mester (1997) and Saunders & Cornett (2006) identify two of these models;

- Merton (Options) based models
- Ratings Based Models

#### **2.7.3.1 Merton (Options) Based Model**

The Merton (Options) Based model illustrates how the probability of default of an individual company can be inferred from its market valuation under specific

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<sup>9</sup> Duration Approach considers the weighted average time to maturity using the relative present values of the cash flows as weights.

assumptions on how assets and liabilities evolve. In particular, a company is considered to be in default when the value of its assets falls below the book value of its liabilities. Merton (1974) showed how Option Pricing Theory<sup>10</sup> can be used to determine the underlying value of a company's assets from the value and volatility of its equity and the book value of its liabilities (Tudela & Young, 2003). It therefore holds by Merton that, by observing the value of a company's equity it is possible to calculate the value of its assets. This approach can then be used to calculate the probability of default.

### **2.7.3.2 Ratings Based Models**

Ratings Based Models equally constitute some of the recent development in credit risk management models. Rating Based Models (like CreditMetrics), rely on estimates of the probability of a borrower's change in credit quality (including default) within a given time horizon, usually 1 year. Note that these estimates are usually calculated using the borrower's current credit rating and historical data on credit rating migrations.

Given this, a matrix can be constructed showing, for example, the probability of a borrower moving from one rating (i.e. A) to another rating (i.e. BBB) during a year. Note that Ratings Based Models are often referred to as "Marked to Market" models as they estimate the distribution of portfolio value at some future date allowing for credit quality declines, even if they are short of full default (Saunders & Allen, 2002).

*It is important to note at this stage that, both Merton Based and Ratings Based Models convert estimates of losses on individual credits to estimates of loss on whole portfolios. This is done by estimating correlations in changes in credit quality across borrowers.*

Having looked at the principles of credit risk management and the various techniques that banks both in developed and developing economies can use in

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<sup>10</sup> The Option Pricing Theory (OPT) is a financial theory used by financial engineers to value options and other derivative instruments.

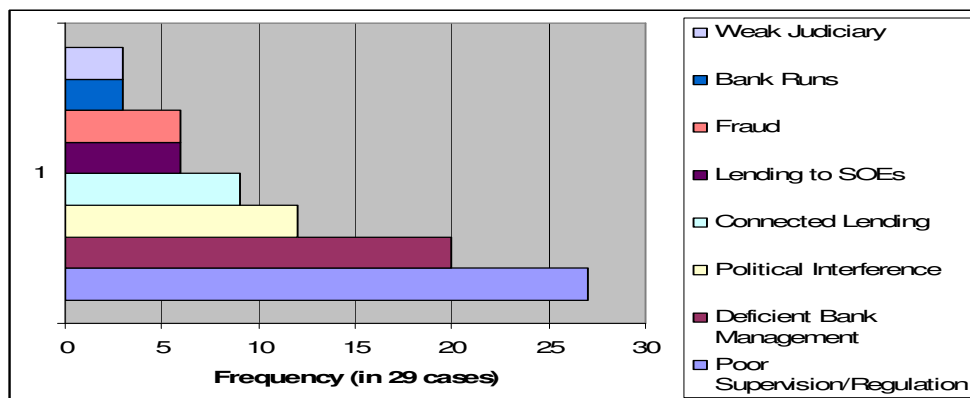
measuring and managing credit risk, next is a review of credit risk management problems specifically faced by banks in developing economies.

## 2.8 Credit Risk Management Problems in Developing Economies

In developing economies notably in some countries in Africa and East Asia, reliance on bank credit is central for investment and remains key and quite integral in economic growth (Janice, 2006). Despite this heavy reliance on bank credit by individuals and companies in developing economies, a number of problems still impede the smooth implementation of the basic principles and techniques of credit risk management in these economies (Alison, 1997; Suman & Valeriano, 1997; World Bank, 1997; Litan et al, 2003; Mila & Petersen, 2004). Countries like Kenya, Nigeria, Uganda, Zambia, and many others (in Africa) have suffered from failures of privately owned banks due to uncoordinated lending practices (Brownbridge, 2007). The situation is even worse in some Asian and Latin American countries like India, China, Venezuela, Brazil (Honohan, 1993).

Caprio and Klingebiel (1996) identify a number of microeconomic factors responsible for bank insolvencies in developing economies and uncoordinated lending (especially connected lending and lending to small scale enterprises) appeared in 15 out of the 29 cases of their survey as one of the major causes of bank insolvency. This is illustrated in the figure below:

**Figure 4: Major Microeconomic Causes of Bank Insolvencies**



*Figure 4 above highlights the major causes of bank insolvencies in developing economies and as can be seen poor supervision/regulation constitutes a major cause. Connected lending (or concentration on specific sectors or individuals) and lending to SOEs come fourth and fifth as major causes. Note the connection between some of the reasons. There is for instance a direct link between uncoordinated lending and poor supervision.*

Given the above, the question to be asked at this stage is: why has it always proven difficult for commercial banks in developing economies to build up sound commercially viable loan portfolios? Several reasons account for this:

**i) Failure to diversify loans among many sectors and borrowers**

Diversifying loans among many sectors and borrowers has always proved difficult in developing economies (Cunningham, 1999). This is usually the case because in most developing economies although there may exist a large number of companies to which banks can lend, these companies may ultimately be connected to the same shareholders who transfer money from one part of the sector to another as need arises. It is noteworthy to mention that concentrations on a given sector or sectors for a bank's lending practices are probably the single most important cause of major credit problems (BIS, 1999). Concentrations continue to be a major issue in credit risk management in developing economies

**ii) Weak Screening, Failures of Due Diligence and Inadequate Monitoring**

Screening constitutes (or should constitute) an integral part of the lending process. In developing economies, banks face acute problems in successfully screening borrowers for two reasons: Firstly information concerning the viability or creditworthiness of borrowers may not be available and in cases where they even exist, they may be sketchy or misleading. Thus, there is an inherent possibility of granting loans to bad credit risks due to lack of (accurate) information on borrowers.

Secondly, carrying out a thorough credit assessment (or basic due diligence) is often a major challenge to banks in these economies. Competitive pressures and the growth of loan syndication techniques usually create time constraints that interfere with basic due diligence. This, following our understanding of basic credit risk management principles, can eventually have an adverse effect on the overall loan portfolio.

There is equally a problem at the level of monitoring and implementation of restrictive covenants after the loan is granted. Borrowers may tend to engage in riskier ventures once they are in possession of a loan. This often goes unnoticed by bankers and even in cases where they are noticed, enforcing restrictive covenants becomes difficult for various subjective reasons.

Other credit risk management problems in developing economies include;

- Existence of few creditworthy borrowers due to weak private domestic sectors (Brownbridge, 2007).
- High government intervention in the management of banks leading to uncoordinated lending practices (Cihak & Podpiera, 2005).
- Absence of ways of testing and validating new lending techniques (Netlibrary & the World Bank, 2003)
- Absence of an effective credit review process (Borio & Lowe, 2002). Indeed many banks in developing economies have no credit review function.
- Failure to monitor borrowers or collateral values (Mila & Petersen, 2004).
- Failure by banks to take sufficient account of business cycle effects (Alison, 1997).

It is however worthwhile to mention that despite the aforementioned problems, a lot of policy reforms have been going on especially in sub-Saharan Africa and some Asian countries (like China) to liberalise financial sectors in order to encourage sound bank lending practices (Brownbridge, 2007).

## **2.9 Chapter Summary**

Chapter Two opened with a definition of credit risk. It then went ahead to explain how ineffective credit risk management could undermine the value of a bank's asset thereby leading to insolvency. Key principles of credit risk management were thereof examined. These included; (i) establishing an appropriate credit risk environment; (ii) operating under a sound credit granting process; (iii) maintaining an appropriate credit administration, measurement and monitoring process; (iv) ensuring adequate controls over credit risk and (v) emphasising the importance of supervision.

Various models of credit risk management were then discussed under two main headings; qualitative and quantitative techniques of credit risk management. The main steps discussed in the qualitative credit risk management process included; (i) rigorous screening (before a loan is granted) in order to minimize the effect of the asymmetric problem of adverse selection and, (ii) rigorous monitoring (after the loan is granted) in order to minimize the effect of the asymmetric information problem of moral hazard.

Quantitative credit risk models were thereafter discussed starting with an explanation of what credit scoring is all about including a look at its origin and benefits. The various credit scoring models were then discussed. These included; (i) Linear Probability Models; (ii) Logit Models; (iii) Probit Models; (iv) Discriminant analysis; (v) Term structure Based Models; (vi) Mortality Rate Models; Risk Adjusted Return on Capital (RAROC); (vii) Merton (Options) Based Models and, (viii) Ratings Based Models.

The Chapter is concluded by a brief review of some problems of credit risk management in developing economies.



The next chapter (chapter three) presents an overview of the Cameroonian Banking industry highlighting the key players of the industry and justifying why only four out of the 10 existing banks in Cameroon were chosen for the study. It also briefly outlines the lending strategies of each of the chosen banks.

***Chapter Three:  
An Overview of the  
Cameroonian Banking  
Industry***

### 3.1 Chapter Preview

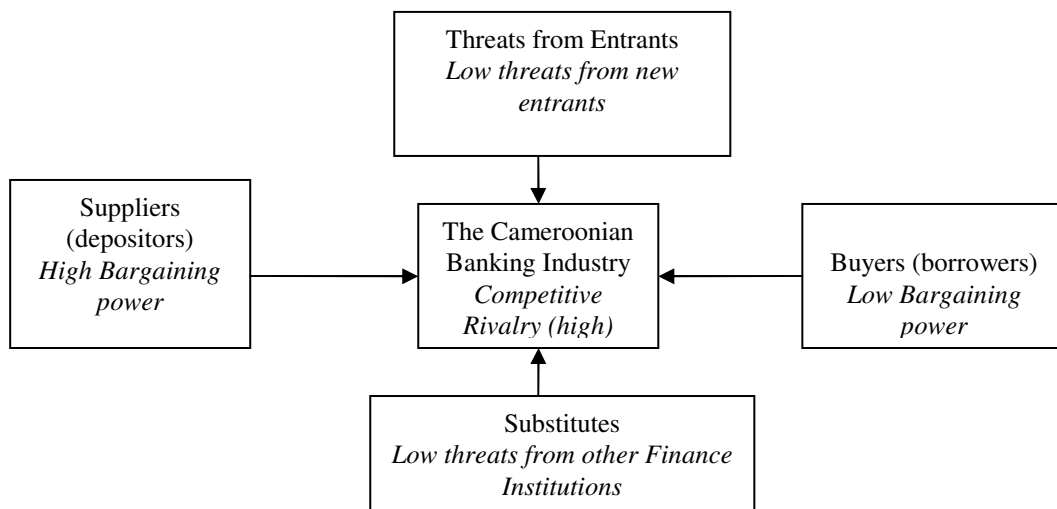
Cameroon is one of the six countries found in Central Africa sharing borders with Nigeria in the West, Chad in the North, Central African Republic in the East, Congo Republic, Gabon, Equatorial Guinea in the South and the Atlantic Ocean in the West. The country covers a surface area of 475 000 square kilometres with a population of approximately seventeen million inhabitants.

This chapter presents an overview of banking in Cameroon focusing on an analysis of the industry using Michael Porter's<sup>11</sup> Five Forces as an analytical framework. It equally presents background information on the four selected banks for this study and a synopsis of their lending strategies. This chapter serves as a prelude to chapter five (Presentation and Analysis of Data).

### 3.2 An Analysis of the Cameroonian Banking Industry

In order to present a clear picture of the Cameroonian Banking Industry, an analysis of the industry shall first be carried out using Michael Porter's five forces of industry competition as an analytical framework. This framework is essentially a structured means of examining the competitive environment so as to provide a clear understanding of the various forces at work (Dobson et al, 2004). Figure 5 below is an illustration of the various forces acting in the Cameroonian banking industry.

**Figure 5: An Analysis of the Cameroonian Banking Industry**



<sup>11</sup> Michael Porter is a Harvard Business School Professor and eminent author in the school of business strategy

Figure 5 above is a schematic presentation of the various forces at work in the Cameroonian banking industry. Using this framework, a clear picture of this industry is given below.

### **Threats from New Entrants**

Setting up a banking institution in Cameroon is difficult for several reasons. Firstly, the few players (ten) in the industry are already benefiting from significant economies of scale which make things extremely difficult for new entrants. Established banks already have large established networks which obviously give them an absolute cost advantage over new entrants especially at the level of technological know how, trained employees, access to inputs, etc. Therefore, for any new banking institution to successfully commence operations in Cameroon, a minimum efficient size is required which most certainly has enormous cost implications (The Herald, 2007).

Secondly, the Cameroonian banking industry is heavily regulated by the Banking Commission for Central African States (COBAC) which is an arm of the Bank of Central African States (BEAC). COBAC imposes a minimum capital requirement of over £1 million (over Franc CFA 1 billion) and equally puts in place measures to ensure that banks respect prudential norms<sup>12</sup> (COBAC Report, 2007). These make things more difficult for new entrants who are obliged to comply.

Another key issue impeding easy entrance into the banking industry in Cameroon is the inability of new entrants to successfully penetrate the market (Egbe, 2005). The question here is: What new products do these new entrants need to bring to the market that will enable them to successfully differentiate themselves from the existing established players?

Summarily speaking thus, entry barriers are high in the Cameroonian banking industry thereby minimizing the threats from new entrants to existing banks.

### **Competitive rivalry**

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<sup>12</sup> Prudential norms are rules that require banks to operate within a defined regulatory framework in order to prevent mismanagement which in most circumstances put depositors' savings at risk.

The competition in the banking industry in Cameroon is significantly high since most of the banks (especially the domestic banks) tend to focus on similar products and financial services (Ayaba, 2006). There is therefore little differentiation especially at the level of banking products. There is also relatively slow growth in the industry often leading to a 'market share game' with individual banks fiercely struggling to dominate the market (Fomenky 2006). Another issue is that government's intervention and certain regulations imposed by COBAC make exit from the industry very difficult. Existing players are therefore obliged to engage in fierce competition in order to reduce excess capacity which may be a major problem to profitability.

### **Threats from Substitutes**

The threats from substitutes to banks in the Cameroonian banking industry are relatively low for a variety of reasons. Substitutes in this case will mainly be insurance companies, micro finance institutions and other lending houses offering a number of banking products and services. It is important to note that Cameroon has a booming micro finance sector having over 350 micro finance institutions (Cameroon Tribune, 2005). However, these institutions do not really pose a threat to banking institutions because COBAC (which equally regulates the micro finance industry) clearly defines the kind of activities microfinance institutions can engage in.

These institutions for instance, are not supposed to engage in money transmission, issuing of Letters of Credit, providing of bank guarantees, heavy lending, and in many other activities typically carried out by banking institutions. The irony however is that, banks (especially the domestic ones) by rigorously embarking on retail banking, instead pose a major threat to micro finance institutions.

The absence of developed financial markets in Cameroon also accounts for these low threats from substitutes to the established ten banks in the Cameroonian banking industry. Typically, financial markets in Cameroon are characterised by a number of weaknesses such as; the inability to provide market participants with

a variety of instruments of differing maturities, the inability of multiple investors to share a project's risk thereby allowing for high risk, high return investments to be undertaken, the inability to pool resources and diversify ownership and the inability to process and aggregate information effectively. Given these weaknesses in the Cameroonian financial system, the established banks do not really feel threatened by existing substitutes (Tepong, 2007).

### **Bargaining Power of buyers**

Note that in the case of a bank, buyers will refer to borrowers while sellers will refer to depositors/savers. As earlier mentioned in this study, bank credit constitutes a major source of investments in developing economies and Cameroon is no exception to this assertion. The Cameroonian banking industry is characterised by a large number of individuals, existing and potential investors who have a very high propensity for loans (Egbe, 2005). However, the bargaining power of borrowers in this industry is low because borrowers have to follow a number of procedures to be able to benefit from a bank credit. Clearly, at the end of the day, it is the bank's decision to grant or not to grant a loan. This aspect limits the bargaining power of borrowers on the negotiating table.

### **Bargaining power of suppliers**

Typically, the idea of banking is not a very popular one with Cameroonians given their low purchasing power (Fomenky, 2006). This implies that the banking culture in Cameroon is relatively underdeveloped. The extreme degree of poverty in the country also greatly limits the ability of Cameroonians (even those who could be interested in having bank accounts), to have accounts (Ayaba, 2006). What this means is that, most Cameroonian banks will rely on a few very rich individuals or business units for their liquidity. These individuals or business units can readily switch from one bank to the other in the case where they are not particularly happy with the services rendered by a particular bank. Some can switch simply for subjective reasons like wanting to open an account where a friend is a shareholder or where the chances of easily becoming a shareholder are high (Egbe, 2005).

The above assertions imply that, depositors in Cameroonian banks to an extent have a high bargaining power given that they can influence the rate of credit interest<sup>13</sup> banks pay on their deposits, especially on term deposits<sup>14</sup> since banks need these deposits to be able to successfully engage in lending. Given this aspect, building customer loyalty is of paramount importance in most Cameroonian banks in order to limit the ability of depositors switching from one bank to the other (Etta, 2004).

Having analysed the Cameroonian banking industry, a brief review of the key players in the industry is made in the next section.

### **3.3 A Review of the Key players in the Cameroonian Banking Industry**

There are ten established banking institutions that currently make up the Cameroonian banking industry. These institutions could be classified under two main headings; domestic banks and multinational banks. The already established domestic banks include; Afriland First Bank, Amity Bank of Cameroon, Commercial Bank of Cameroon (CBC) and Union Bank of Cameroon (UBC). The multinational Banks include; CLC (*Crédit Lyonnais Cameroun*), SGBC (*société Générale de Banque au Cameroun*), BICEC (Banque Internationale du Cameroun pour l'Épargne et le Crédit), Standard Chartered Bank of Cameroon, ECOBANK of Cameroon and Citibank Cameroon. It is worth noting that multinational banks control close to 80% of the total market share while the domestic banks share the remaining less than 30% (Fon, 2007).

Table 5 below presents a summary of the banks in Cameroon in terms of their number of branches, their share capital and the percentage of shares owned by various individuals and units with a focus on principal shareholders. The ranking as can be noticed is based on the amount of share capital in each of the ten banks.

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<sup>13</sup> A credit interest is interest paid on savings.

<sup>14</sup> A term Deposit is a deposit blocked for a period of time usually one year at a given interest rate in a bank. This can be rolled over at the end of the period.

**Table 5: Presentation of Banks in Cameroon in terms of number of Branches & Share Capital**

	Banks	Number of Branches	Capital (in millions of pounds)	Percentage of Ownership
<b>1</b>	<b>SCBC</b>	<b>3</b>	<b>7</b>	<b>Standard Chartered Holding: 99.99%</b> <b>Others: 0.01%</b>
<b>2</b>	<b>CBC</b>	<b>6</b>	<b>7</b>	<b>DEG: 15%</b> <b>Others: 85%</b>
<b>3</b>	SGBC	16	6.25	SGBC France: 58.05% Others: 41.95
<b>4</b>	CLC	12	6	State of Cameroon: 35% Others: 65%
<b>5</b>	<b>UBC</b>	<b>5</b>	<b>5</b>	<b>CAMCCUL: 39.41%</b> <b>Others: 60.59</b>
<b>6</b>	AFRILAND	12	4.5	SBF & CO. : 36.62% Others: 63.38%
<b>7</b>	Amity Bank	8	4	Sielienuou Christophe: 50.01% Others: 49.99%
<b>8</b>	CITIBANK	2	3.163	CITIBANK N.A New York: 100%
<b>9</b>	BICEC	27	3	State of Cameroon: 52.5% Others: 47.5%
<b>10</b>	<b>ECOBANK</b>	<b>2</b>	<b>2.5</b>	<b>ECOBANK Transnational Inc.: 79.6%</b> <b>Others: 20.4%</b>

**SOURCE: COBAC Report 2004**

The table above shows the number of banks in the Cameroonian banking industry, their number of branches and share capital as at December 2004. CBC and SCBC as clearly shown in the table, have the highest amount in share capital (£7 million each) while ECOBANK has the lowest with £2.5 million.

Given this general understanding, it is worth noting that this study is based on two domestic banks (UBC and CBC) and two multinational banks (ECOBANK and Standard Chartered Bank) as highlighted in the table. These four banks were chosen for the following reasons:

- They expose characteristics that can help in answering the research questions and in attaining the objectives of the research.



- They have been doing banking business in Cameroon for at least six years thereby providing a premise for comparative analysis.
- It would not have been possible to collect data from all the ten banks in Cameroon given the time frame of three months for the project and the research methodology employed by this author.

### **3.4 Background Information on the Selected Banks for the Study**

Having had an idea of the Cameroonian banking industry in terms of the major competitive forces affecting it and its key players, background information on each of the selected four banks and a synopsis of their lending strategies are presented below. These shall serve as a basis for the understanding of the methodology employed in this study.

#### **3.4.1 Union Bank of Cameroon (UBC)**

UBC is a commercial bank created by the Cameroon Cooperative Credit Union League<sup>15</sup> (CAMCCUL). It was accredited by COBAC and approved by the Ministry of Finance in Cameroon to carry out banking business in Cameroon on the 8<sup>th</sup> of September 1999 (UBC Annual Report, 2004). UBC however went operational only on the 3<sup>rd</sup> of January 2000. UBC currently has five branches in Cameroon and strategic business alliances with some international organisations and institutions like; Rabobank in the Netherlands, Citibank in London (United Kingdom), Citibank in New York (United States of America) and BHF Bank in Frankfurt (Germany). UBC provides numerous banking products and services including a multitude of on and off-balance sheet credit facilities (*which shall be examined later in this chapter*) to its customers.

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<sup>15</sup> The Cameroon Cooperative Credit Union League (CamCCUL) Ltd is a network of cooperative credit unions in Cameroon. It is the umbrella organization for 191 Credit Unions with a total of 196 922 (urban and rural) members.

### **3.4.2 Commercial Bank of Cameroon (CBC)**

CBC is one of the leading domestic banks in Cameroon. It was created in 1997 with the objective to assist companies and individuals in their financial operations and in the financing of their activities and projects (CBC Annual Report, 2006). It is 100% Cameroonian owned and currently has six branches in Cameroon. Like UBC, CBC is accredited by COBAC and eligible to carry out banking business in Cameroon and within the Central African Region. However, unlike UBC, the CBC currently has no strategic alliance with any International Body or banking institution. It equally offers a wide range of banking products and services including many credit facilities to its customers.

### **3.4.3 ECOBANK of Cameroon (EBC)**

ECOBANK is a Pan African Bank having shareholders from over 14 different African countries and offices in 18 African countries of which Cameroon is one (ECOBANK Annual Report, 2006). EBC ( which adheres to the ECOBANK group's policy and business strategy and its own local business strategy), focuses on providing wholesale, retail, investment and transaction banking products and services to governments and governmental agencies, multinationals, financial institutions, local companies, SMEs, micro enterprises and high net worth individuals and consumers in Cameroon.

EBC was accredited by COBAC and approved by the Ministry of Finance to carry out banking business in Cameroon in July 2000 (ECOBANK Annual Report, 2005). It went operational in the same year and currently has two branches in Cameroon. For its business transactions out of Cameroon and Africa, ECOBANK Cameroon has strategic working relationships with BCF in Paris- France and Bankers Trust of New York in the USA. ECOBANK like UBC and CBC also offers a wide range of banking products and services including various credit facilities to its customers.

### **3.4.4. Standard Chartered Bank of Cameroon (SCBC)**

SCBC is an arm of the Standard Chartered Bank which has been doing Banking business for over 150 years and operates in many of the world's fastest-growing markets with an extensive global network of over 1,400 branches (including subsidiaries, associates and joint ventures) in over 50 countries in the Asia Pacific Region, South Asia, the Middle East, Africa, the United Kingdom and the Americas.

SCBC commenced operations in 1986 with the take-over of Boston Bank of Cameroon. It currently has three branches in Cameroon and concentrates mainly on consumer, corporate and institutional banking business. Apart from focusing on wholesale banking, SCBC equally supports the agricultural sector which currently is a key source of growth and exports for Cameroon. In 2004 SCBC was recognised as the most profitable bank in French Speaking Sub-Saharan Africa by Ecofinance Magazine. Today it is regarded as one of the best trade banks in Cameroon especially in developing and marketing products and services. Like the other banking institutions, SCBC offers a variety of products and services including a wide range of credit facilities to its customers.

With this background knowledge of the selected banks, a rundown of their lending strategies is presented below.

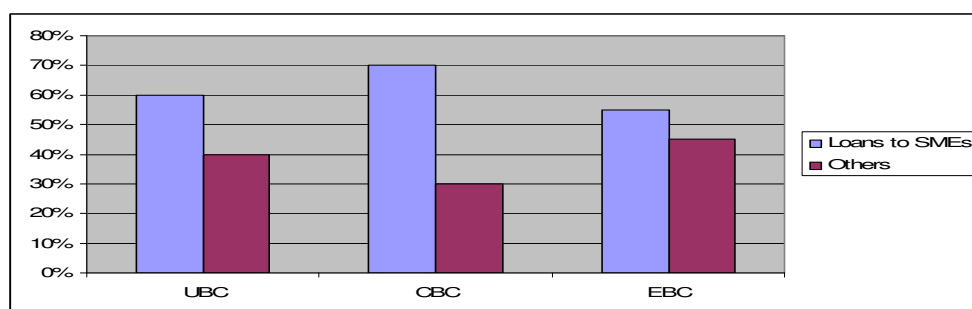
## **3.5 The Lending Strategies of the Selected Banks**

Each of the four banks for this study relies on a lending strategy in order to meet up with the financing needs of its customers and consequently make profits. In the section that follows, the lending strategies of the selected banks are examined with special focus on the target market of the banks. Note that this is essential for an understanding of the various credit risk management techniques adopted by these banks as shall be explained in chapter five. Table 6 below presents a summary of the lending strategies of the selected four banks.

**Table 6: Summary of the Lending Strategies of the Selected Banks**

<b>BANKS</b>	<b>Lending Strategy</b>
UBC	Focuses mainly on Small and Medium Scale Enterprises (SMEs) with loans to these business units constituting 60% of its entire loan portfolio
CBC	Focuses largely on SMEs with loans to SMEs constituting over 70% of its entire Loan portfolio
EBC	Focuses on SMEs as well with loans to SMEs constituting about 55% of its entire loan portfolio
SCBC	Focuses mainly on multinational companies with loans to these business units constituting over 90% of its entire loan portfolio.

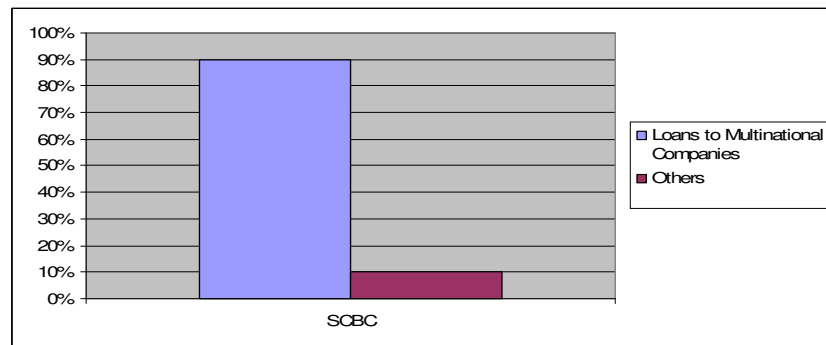
Table 6 above gives a summary of the lending strategies of UBC, CBC, EBC and SCBC. As illustrated, UBC, CBC and EBC focus on Small and Medium Scale Enterprises (SMEs) for their lending with loans to SMEs constituting 60%, 70% and 55% of their respective loan portfolios. Other loans (especially personal loans and loans to large companies), constitute the remaining 40% of the entire loan portfolio for UBC, 30% for CBC and 45% for EBC. This is illustrated in the chart below.

**Figure 6: Loan Portfolio Composition for UBC, CBC & EBC**

The chart above is a clear picture of the overall loan portfolio composition of UBC, CBC and EBC. These banks rely principally on SMEs in their lending for five principal reasons:

- i) SMEs constitute over 80% of all the business units in Cameroon but remain largely untargeted by other commercial banks in the country (SME Needs Assessment Report, 2005).
- ii) SMEs have a very high propensity for bank loans thereby constituting one of the major sources of revenue for the banks in question (Tepong, 2007). EBC for instance, receives over 600 applications for loans from SMEs annually and gets to reject only about 3% (EBC Annual Report, 2005).
- iii) SMEs are not interest rate sensitive like big companies. Given this aspect, interest rates on their loans are usually much higher than interest rates on loans to bigger companies which always tend to negotiate for favourable interest rates on bank credits (Egbe, 2005).
- iv) SME lending allows for higher bank margins due to higher risk premiums given the very high risk involved in engaging in it (Mambo, 2003).
- v) It is much easier to establish a niche market with SMEs in Cameroon than with large companies. This niche market inevitably creates further knowledge and understanding of SMEs over time which help the banks in question to better deal with them (Tazah, 2005).

Unlike UBC, CBC and EBC, SCBC has an entirely different focus in terms of its lending. It concentrates mainly on multinational companies as indicated in table 6 above. In fact loans to multinational companies in Cameroon constitute over 90% of its entire loan portfolio. Conversely, loans to domestic companies (including SMEs) constitute a very small portion (10%) of its overall loan portfolio. This situation is illustrated in the chart below.

**Figure 7: SCBC's Loan Portfolio Composition**

The chart above clearly shows SCBC's focus on multinational companies. In fact, SCBC considers lending to domestic companies (especially lending to SMEs) as extremely risky business for two main reasons:

- i) Domestic business units from past experience are generally known to heavily default on their loans (Etta, 2004).
- ii) Collecting reliable information from domestic companies and other local business units which can facilitate successful lending decisions is often very difficult (Mambo, 2003).

### 3.6 Chapter Summary

Chapter Three commenced with an analysis of the Cameroonian Banking Industry using Michael Porter's Five Forces of industry analysis as an analytical framework. These include; threats from new entrants, competitive rivalry, threats from substitutes, bargaining power of buyers (borrowers in this case) and bargaining power of sellers (depositors in this case). This analysis revealed that entry barriers, threats from substitutes and the bargaining power of borrowers are low in this industry while the bargaining power of depositors and competitive rivalry are high.

The chapter also presented the key players of the Cameroonian banking industry and reasons why only four out of the ten banking institutions in Cameroon were chosen for

the study. Thereafter, some background information on each of the selected banks was presented with focus on their creation and lending strategies.

In the Chapter that follows (chapter four), the various methods used in collecting data for this study and the key limitations to the employed methodology shall be presented.

# ***Chapter Four: Methodology***



## 4.1 Chapter Preview

This chapter explains the methods used in collecting data. It is worth mentioning that the analysis (in chapter five) and conclusions (in chapter six) of the study are based on both existing literature (as reviewed in chapter two) and field research work.

Primary and secondary data were collected and used to present a balanced argument that compared and contrasted theoretical and conceptual considerations with what actually goes on in practice. The use of qualitative interviews was adopted as a means of collecting primary data while secondary data was based on books and articles written by different experts on the research topic.

Note should be taken that, the major criteria used in collecting data were relevance, reliability, validity, cost and time constraints. Validity here simply refers to the comparison of what interviewees said and what actually went on. Reliability on the other hand looks at the consistency and reproducibility of the result based on the instruments used (Cassell & Symon, 2004). In the next sections, a detailed explanation of the data collection methodology is presented.

## 4.2 Data Collection Methodology

Initially, this author intended to collect data on credit risk management techniques and its impact on the overall loan portfolio from five out of the ten established banks in the Cameroonian Banking industry. However, due to the very 'tight lipped' nature of one of the banks (Amity Bank of Cameroon) making the collection of primary data on its credit/loan policy, lending strategy and procedures (which constitutes an integral part of this study) impossible, the study was limited to four of these banks (CBC, UBC, ECOBANK and Standard Chartered Bank of Cameroon). For the aforementioned four banks (and for the study as a whole), this author relied on both primary and secondary data.

It is important to reiterate at this point that, the practicality of the methods employed to collect and analyse data were guided by the objectives of the study

which inevitably required blending of evidence from primary data results with the evaluation of secondary data evidence to yield a unified indication of the prominent issues underlying the study.

In the section that follows, the secondary data collection process is examined followed by a discussion on the methods used in collecting primary data:

### **4.3 Secondary Data**

In order to have a clear idea of how to handle the primary data collection process in terms of the salient issues to be considered which are of relevance to this study, this author first of all relied on relevant literature on the research topic by other authors and scholars (all of whom have been listed in the bibliography of this report). The theoretical and conceptual framework presented in chapter two is therefore based on works of these authors. Books, journal articles (published and unpublished), magazines, conference reports, web pages and company reports on credit risk management were consulted.

#### **4.3.1 Merits of Secondary Data Analysis**

Secondary data collection did not pose a major problem for various reasons:

- Collecting secondary data was very cost effective: In fact, there were numerous books and journals on credit risk management making it easy to gather relevant information on the research topic thereby minimizing the need for allocating additional resources to this phase of the research.
- The existing literature on credit risk provided ample guidance on issues of effective credit risk management which forms the pivot of this study. Without this, it would have been practically impossible to venture in to the study in the first place.
- Relevant information could quickly be gathered: Given the limited time frame of three months for the management project, this time saving was integral and instrumental.

- No particular expertise was required to successfully collect relevant data. In fact, getting the right books or journal articles and the right topics to peruse through was all it took.

### **4.3.2 Limitations of Secondary Data Analysis**

Despite the advantages accruing from secondary data collection, some difficulties were encountered in the process:

- There was no parameter that could be used to check the credibility, reliability and accuracy of gathered information (especially information from unpublished sources).
- Some of the data were completely out of date or were presented in unusable formats. This at times was a major impediment, given that to sort out relevant data, volumes upon volumes of books and journal articles had to be read.
- Lack of published materials on credit risk management problems in developing economies was also one of the major problems encountered in the secondary data collection process. Most of the academic references on banking in developing economies focused more on banking reforms and took a general perspective on banking problems in these economies than on credit risk and its management. This meant that, one had to go through a wide range of books and journals to be able to sort out relevant material. This of course, was time consuming.

*Despite the aforesaid limitations, it is of essence to mention that secondary data collected gave a framework within which this study was conducted.*

## **4.4 Primary Data**

While secondary data played a major role in bringing the study to perspective, primary data was used in order to provide specific answers to specific issues covered in the study. The reason for this was simply to establish a balanced

argument and to show the correlation between the theoretical perspective of credit risk management and what goes on in practice. Given the nature of the research, the use of qualitative interviews was adopted. The interviews were aimed at;

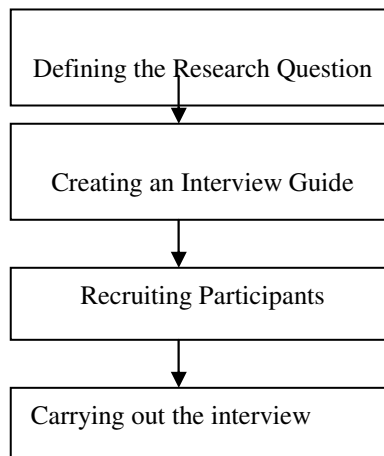
- Finding out the techniques used by each of the four selected banks in determining the probability of default.
- Assessing the impact of credit risk management on the overall loan portfolio of each of the selected banks.
- Assessing the impact of credit risk management on the solvency of these banks.
- Assessing the impact of Information technology in the lending process.

#### **4.4.1 Qualitative Interviews**

Seale et al (2005) define a qualitative interview as an interview whose purpose is to gather descriptions of the life/world of the interviewees with respect to the interpretations of the described phenomena. In fact, qualitative interviews are considered one of the major methods of collecting primary data in qualitative research (Bulmer & Warwick, 1983; Huberman & Miles, 2002; Cassell & Symon, 2004; Colin, 2002).

In order to provide a fair understanding of how data was collected using qualitative interviews as a primary data collection tool, an explanation shall be given below on how the process was constructed and carried out.

Four main steps make up the qualitative interview process; (i) defining the research question, (ii) creating an interview guide, (iii) recruiting participants and, (iv) carrying out the interview (Cassell & Symon, 2004; Silverman, 2004; Shank, 2005). These four distinctive phases are schematically described below:

**Figure 8: The Qualitative Interview Process**

*Figure 8 above illustrates the steps involved in carrying out a qualitative interview. In the section that follows, an explanation is given on how each of the above steps was carried out.*

#### **4.4.1.1 Defining the Research Question**

A major starting point for a successful qualitative interview is defining the research question (Shank, 2005) and this has to be done in a manner that would not expose the author's presuppositions or any biases (Creswall & Creswell, 1998). In this light, the research question was defined and endeavours were made to ensure that it was free of any biases.

#### **4.4.1.2 Creating an Interview Guide**

Another crucial step in the qualitative interview process is establishing an interview guide (Silverman, 2004). Given that a semi-structured interview<sup>16</sup> with open questions had to be embarked on, the topics to be covered during the interview were listed in a guide. These topics equally suggested probes which could be used to follow up responses and elicit greater detail from participants.

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<sup>16</sup> Semi-structured interviews are interviews conducted with a fairly open framework which allow for focused, conversational, two-way communication. They can be used both to give and receive information. Unlike the questionnaire framework, where detailed questions are formulated ahead of time, semi structured interviewing starts with more general questions or topics. Relevant topics are initially identified and the possible relationship between these topics and the issues such as availability, expense, effectiveness become the basis for more specific questions which do not need to be prepared in advance.

One of the things taken seriously in to consideration in conceiving the guide was structuring it in a way as to avoid imposing a particular structure on the interviewee (participant) or focusing on abstractions and general issues.

It is important to note at this point that, the topics for the interview guide were based on the research literature, this author's personal knowledge and experience of the research area, and informal preliminary work such as discussions with people having personal experience of the research area. *Appendix 2 is a sample of the Interview Guide used.*

#### **4.4.1.3 Recruiting Participants**

Having established a guide, the next step is recruiting participants or interviewees (Cassell & Symon, 2004). In each of the four selected banks, at least three persons had to be interviewed giving a minimum of 12 persons in total for the four banks. Focus was entirely on those involved in the lending process such as heads of credit divisions, Credit analysts, account relationship managers and other senior bank staff directly involved in lending. In each of the banks, at least three persons were successfully interviewed giving a 100% success rate as per the author's objective of interviewing at least three persons per bank. *Appendix 3 presents an outline of the positions of those interviewed in the various banks.*

#### **4.4.1.4 Carrying out the Interviews**

The last stage in the qualitative interview process is carrying out the interview (Bulmer & Warwick, 1983). All the interviews carried out by this author were face to face. After a brief description of the research project, each interviewee was asked about a number of issues around given topics all intended to generate responses that could help in the attainment of the research objectives. *Appendix 4 presents a list of participants and the duration of each of the interviews conducted.*

In order to get responses that were reflective of specific situations, use was made largely of interpersonal skills. In fact, one of the strategies embarked on which led to some encouraging and objective responses, was encouraging interviewees to actively participate in the interview simply by letting them see the research topic from their own perspective. Note that the goal of any qualitative research interview is to see the research topic from the perspective of the interviewee and to understand how and why they have arrived at this particular perspective (Cassell & Symon, 2004).

#### **4.4.1.5 Merits of Interviews**

The qualitative interviews carried out had a number of merits:

- Being in direct contact physically with participants is quite useful (Huberman & Miles, 2002). The non verbal communication from them in most cases provides extra information that can be added to their verbal responses (Hollway, 2000). In fact, just by listening and observing interviewees, it was possible for this author to ascertain if participants were comfortable with a particular question or not. This aspect greatly helped in the management of the interview process.
- A number of salient issues (relevant to the study but not mentioned in the interview guide) were brought up by participants. This too was very useful since it was indicative that they were actually approaching the research problem from their perspective.
- The interview made it possible to address almost all the topics on the guide in most cases within a short time. This made attainment of most of the objectives of this study feasible.

#### **4.4.1.6 Limitations of Interviews**

Despite the aforesaid advantages, embarking on qualitative interviews for primary data collection equally had some demerits:

- Interviews are costly and time consuming (Rubin & Rubin, 2004): Moving from one bank to the other located in different areas on several occasions was really an issue. This problem was further exacerbated by the fact that most of the participants would not respect given appointments. Either they were involved in meetings or just could not receive someone for one reason or the other. In fact this was a major impediment and adversely affected the time allocated for primary data collection.
- Some interviewees tended to be too subjective and too 'tight lipped' especially when it came to certain sensitive issues regarding their institutions. In extreme cases, situations of complete passiveness were encountered through out the interview process indicating that the interviewee was either not too sure of the purpose of the interview or was too scared to let go anything that s/he thought was sensitive in nature. Given the importance of objectivity in such a study, this aspect was worrisome.
- In some instances, interviewees rushed over responses to catch up with other business appointments. This made probing difficult since the interviewee's focus tended to be more on 'getting it done' than on providing reasoned out responses.

*However, despite the aforementioned shortcomings encountered during the interview process, responses received from interviewees greatly helped this author in attaining the objective (s) of this study.*

## **4.5 Chapter Summary**

Chapter four discussed the methodology employed in collecting data for the study. It examined two principal methods of data collection; (i) Secondary data collection based on works from other authors and sources and (ii) primary data collection based on fieldwork. The chapter equally highlighted the reason for the chosen methods and pointed out the merits and limitations of each.



In the next chapter (chapter five), a presentation and an analysis of data collected shall be made. This shall form the basis of the conclusions and recommendations in chapter six.

***CHAPTER Five:  
Presentation and  
Analysis of Data***

## **5.1 Chapter Preview**

This Chapter presents an analysis of data collected from four banks in Cameroon through interviews and rigorous perusal of company reports and loan policies as already mentioned in the previous four chapters. It is worth mentioning at this stage that this analysis is mainly guided by the assumption and objectives of this study as clearly defined in Chapter One?

The analysis focuses on three key concepts reviewed in chapter two which highlighted the various principles and techniques that banks need to employ in order to successfully manage credit risk and consequently be more profitable. These concepts are;

- i) The Principles of Credit Risk Management
- ii) The Qualitative Techniques of Credit Risk Management, and
- iii) The Quantitative Techniques of Credit Risk Management.

Each of these core concepts is considered separately as well as an analysis of how well they are being implemented by the selected banks. Note that this chapter equally evaluates the impact of credit risk management techniques on the overall loan portfolios of these banks including an assessment of the role of information technology in the lending process as a whole. It also forms the basis of the conclusions and recommendations in the next chapter.

## **5.2 Assessment of the Rate of Implementation of Credit Risk Management Principles by the Selected Banks**

The first approach adopted in presenting and analyzing data collected for this study is that of evaluating the extent to which each of the selected four banks implements the general principles of credit risk management as discussed in chapter two. Note that this author is of the opinion and belief that a rigorous implementation of the various credit risk management principles is a pathfinder towards successful credit risk management by banks.

The key issue to remember as one carries out this analysis, is to consider the extent to which each of these principles is respected in both domestic (or local) and multinational banks. The second aspect to consider is the extent to which the rate of implementation of these principles affects the choice of techniques used in managing credit risk by each of the selected banks.

The tables that follow (*i.e. tables 7 & 8 below*), present an assessment of the rate of implementation of the various credit risk management principles (as per defined parameters) across all the banks. Note that this analysis shall serve as a foundation to an understanding of the various credit risk management approaches adopted by the banks in question.

**Table 7: Assessment of the Rate of Implementation of Credit Risk Management Principles across selected Banks**

	<b>Principles</b>	<b>Parameters</b>	<b>UBC</b>	<b>CBC</b>	<b>EBC</b>	<b>SCBC</b>
<b>1</b>	<b>Establishing an Appropriate Credit Risk Environment</b>	i) BOD Periodically reviews Credit Risk Strategy?	yes	yes	yes	yes
		ii) Senior Management has responsibility of Implementing the credit risk strategy?	yes	yes	yes	yes
		iii) New Credit products are subject to adequate risk management procedures and controls	No	No	Yes	yes
<b>2</b>	<b>Operating under a sound credit granting process</b>	i) Clear Indication of target market?	Yes	yes	yes	yes
		ii) Established Credit limits?	Yes	Yes	yes	yes
		iii) Clear Loan Approving process?	Yes	Yes	Yes	Yes
		iv) Diversification of portfolio?	No	No	yes	yes
<b>3</b>	<b>Maintaining an Appropriate Credit Administration, Measurement and monitoring process</b>	i) Sound System for administering various credit risk bearing portfolios?	No	No	Yes	Yes
		ii) Have a system for monitoring individual credits?	Yes	Yes	Yes	Yes
		iii) Presence of Internal Risk Rating System?	No	No	No	Yes
		iv) Use statistical risk rating techniques?	No	No	No	yes
		v) System for monitoring overall loan portfolio?	Yes	Yes	Yes	Yes
		vi) Take into consideration potential future changes in economic conditions when assessing credit risk?	Yes	Yes	Yes	Yes
<b>4</b>	<b>Ensuring Adequate Controls Over Credit Risk</b>	i) Have system of independent, ongoing assessment of its credit risk management processes?	No	No	No	No
		ii) Credit levels are within prudential standards?	No	No	Yes	Yes
		iii) Automatic system for remedial action for deteriorating credits ?	No	No	Yes	Yes
<b>5</b>	<b>Emphasising the importance of Supervision</b>	i) Effective system to identify, measure , monitor and control credit risk?	No	No	Yes	Yes
		ii) Independent Evaluation of bank strategies, policies, procedures and practices related to the granting of credit?	No	No	No	No
		iii) Have prudential Limits to restrict bank's exposures to single or group of connected counterparties?	No	No	No	No

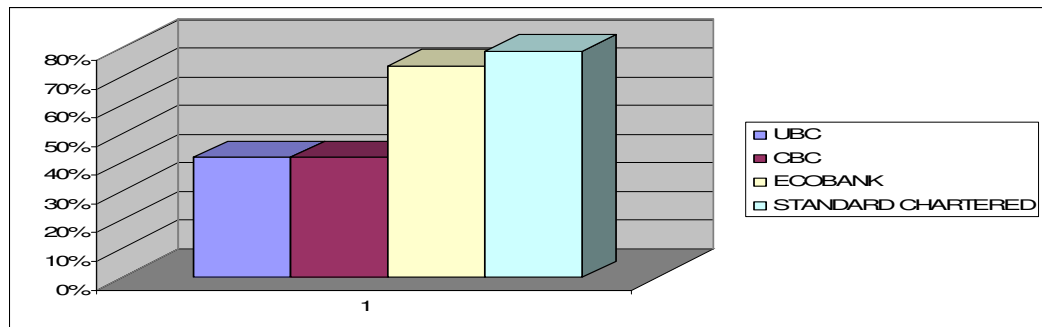
Table 7 above illustrates the extent to which the various credit risk management principles are implemented across the selected banks. Assuming that the overall rating is unweighted meaning that the parameters listed above are of equal importance in the credit risk management process, the rate of implementation of the various principles in the various banks can be summarised as presented in table 8 below.

**Table 8: Rate of Implementation of Credit Risk Management Principles by Each of the Selected Banks**

BANKS	Rate of Implementation of Credit risk Management Principles
UBC	42%
CBC	42%
EBC	74%
SCBC	79%

The table above illustrates that of the unweighted 19 parameters underlying the 5 credit risk management principles, 8 were implemented by domestic banks giving a 42% rate of implementation for each of the domestic banks (UBC and CBC). 14 of the 19 were implemented by ECOBANK giving a 74% rate of implementation while Standard Chartered bank implemented 15 out of the 19, giving a 79% rate of implementation. Figure 12 below highlights these ratings.

**Figure 9: Rate of implementation of Credit Risk Management Principles by Selected Banks**



The figure above clearly shows that, in terms of applying the principles of credit risk management as per the defined parameters, Standard Chartered Bank is at the lead followed by ECOBANK while the domestic banks both are at the tail scoring below 50% each. Note that this understanding will aid in the understanding of the relationship between credit risk management and the rate of default which shall be examined later in this chapter

The section that follows carries out an explicit analysis of how the various credit risk management principles are implemented in the four banks.

## **5.2.1 Assessment of the Rate of Implementation of Principle 1**

The first principle requires banks to establish an appropriate credit risk environment. Three main parameters govern this principle;

- i) The Board of Directors (BOD) should have responsibility of periodically reviewing the credit risk strategy of the bank based on the degree of risk the bank is ready to accept (Kimber, 2003);
- ii) Senior management must be given (and should have) the responsibility of implementing the credit risk strategy (Mays, 1998); and
- iii) New credit products and activities must be subject to adequate risk management procedures and controls before being introduced (Shimko, 1999).

A look at the table above indicates that in all the four banks, the BOD has a direct responsibility of periodically reviewing the credit risk strategy. Findings reveal that in all the banks, this is done at least once annually. The table equally indicates that senior management is given the responsibility to implement the credit risk strategy in all the banks.

There is however a difference between domestic and multinational banks in terms of their ability to ensure that the risks of new credit products and activities are subject to adequate risk management procedures and controls before being introduced. The domestic banks do not have a systematic or formal way of subjecting new products and activities to adequate risk management procedures and controls before they are being introduced. In fact, domestic banks will readily engage in risky lending if the prospects of improving on margins are high irrespective of whether or not they may eventually suffer from non-performing loans (Etta, 2004). The multinational banks on the other hand, have formal established systems for subjecting new products and activities to adequate risk management procedures and control before they are being introduced.

## 5.2.2 Assessment of the Rate of Implementation of Principle 2

Principle 2 advocates the need to operate under a sound credit granting process. This principle involves four underlying parameters;

- i) There must be clear indication of the bank's target market with bankers having a thorough understanding of borrowers (Didiers & Hugues, 2000).
- ii) There must be overall credit limits at the level of borrowers (Lyn, 2002).
- iii) There must be a clearly established process in place for approving new credits (Saunders & Allen, 2002).
- iv) There should be diversification of the loan portfolio (Mohan, 2000).

Findings indicate that, all the banks have clearly defined markets with clear targets. The domestic banks and ECOBANK focus on small and medium scale enterprises while Standard Chartered Bank focuses on multinational companies. Each of the banks equally has a loan policy (credit manual) which clearly defines the loan approving process and the responsibilities of each of the parties involved in the process. Another aspect common to all four selected banks is that there is an establishment of credit limits for borrowers.

However, the domestic banks come into disfavoured in terms of diversifying their loan portfolios. With domestic banks there is an over concentration on SMEs especially those in the agriculture sector. This concentration is justified by the reasons given in chapter three of this report.

The multinational banks on the other hand, focus on specific markets across sectors. Firstly to minimize the effect of suffering from a demise when a particular sector is affected say by an economic recession and secondly to



spread the risk associated with lending across unconnected borrowers so as to minimize the rate of default on their overall loan portfolios.

ECOBANK for instance focuses on SMEs, but this is done across different industries. This applies to standard Chartered as well which focuses on multinational companies operating in different industries.

### **5.2.3 Assessment of the Rate of implementation of Principle 3**

Principle 3 focuses on maintaining an appropriate credit administration, measurement and monitoring process (Fight, 1998). Findings in this direction indicate the following:

All the four banks have systems for monitoring individual credits and their overall loan portfolios. The table further indicates that all the banks take into account future changes in economic conditions when assessing credit risk. However, the domestic banks come again into disfavour in terms of having a sound system (i.e. a responsive and updated automated system) for administering various credit risk bearing portfolios.

In terms of having an internal risk rating system and employing statistical risk rating techniques in assessing default probability, three of the banks come in to disfavour; UBC, CBC and ECOBANK. Out of the four banks, only Standard Chartered Bank currently uses such systems.

### **5.2.4 Assessment of the Rate of Implementation of Principle 4**

Principle 4 requires banks to ensure adequate controls over credit risk in terms of establishing a system of independent ongoing assessment of its credit risk management processes, ensuring that exposures are within levels consistent with prudential standards and having a system in place for early remedial action on deteriorating credits (Kimber, 2003; Shimko, 1999; Caouette, 1998).

Findings in this direction indicated that all the four selected banks do not carry out independent, ongoing assessments of their credit risk management processes. In terms of maintaining credit levels within prudential standards (as per the requirements of COBAC) and in maintaining automatic systems for remedial actions for deteriorating credits, the domestic banks are lacking. Standard Chartered Bank and ECOBANK however, have systems in place for early remedial action on deteriorating credits and for managing problem credits. They also maintain credit limits within prudential standards.

### **5.2.5 Assessment of the Rate of Implementation of Principle 5**

Principle 5 which requires an emphasis on supervision is governed by three principal parameters;

- i) Ensuring that banks have an effective system in place for identifying, measuring, monitoring and controlling credit risk (Altman, 2005).
- ii) Conducting an independent evaluation of a bank's strategies, policies, practices and procedures related to the granting of credit (Jochen et al, 2005) and,
- iii) Setting prudential limits to restrict a bank's exposure to groups of connected counterparties (Servingny, 2004).

Findings indicate that the multinational banks have sound systems in place for identifying, measuring, monitoring and controlling credit risk. The domestic banks fall short of these. Parameters (ii) and (iii) as indicated in table 7 above are not meaningfully implemented in the four banks.

Above, an attempt has been made to explain the extent to which the various credit risk management principles are implemented in all the banks using the principles of credit risk management as a conceptual framework and as an analytical tool. With this understanding, the qualitative and quantitative

techniques used by these banks in predicting the probability of default shall be examined next.

### 5.3 Qualitative and Quantitative Credit Risk Management Techniques Employed by the Selected Banks

In Chapter two of this study, the various qualitative and quantitative approaches that banks use to measure and manage credit risk were reviewed. In the section that follows, the techniques used in measuring and managing credit risk by each of the selected four banks in this study will be presented. Note that the qualitative and quantitative techniques of credit risk management shall serve as conceptual frameworks for this analysis. The tables and figure below (i.e. tables 9 & 10 and figure 13) summarize findings in this direction:

**Table 9: Employment of qualitative and quantitative Credit Risk Management Techniques by the Selected Banks**

	Techniques	Parameters	UBC	CBC	EBC	SCBC
<b>1</b>	<b>Qualitative</b>	Screening (involving due Diligence)	Yes	Yes	Yes	Yes
		Monitoring (involving use of Restrictive Covenants)	Yes	Yes	Yes	Yes
<b>2</b>	<b>Quantitative</b>	Use of Statistical tools (Credit Scoring)	No	No	No	Yes

Table 9 above illustrates the qualitative and quantitative techniques adopted by each of the selected banks in managing credit risk. Assuming that the table is strictly based on whether these techniques are applied at all (and not on whether they are effectively applied) in each of these banks, table 10 below summarizes the rate of application of these techniques.

**Table 10: Rate of Employment of Qualitative and Quantitative Credit Risk Management Techniques**

	Banks	Rate of Employment of Techniques
1	UBC	67%
2	CBC	67%
3	EBC	67%
4	SCBC	100%

The table above illustrates that out of the three defined parameters in table 9 (i.e. Screening, monitoring and use of statistical techniques) required in the quantitative and qualitative credit risk management process, UBC, CBC and ECOBANK successfully employed 2 out of 3 giving a 67% rate of employment while Standard Chartered successfully implemented all 3, giving a 100% rate of employment. Figure 13 below further illustrates this situation. This understanding shall further help in the understanding of the impact of credit risk management on the overall loan portfolio to be examined later in this chapter.

**Figure 10: Rate of Employment of Credit Risk Management Techniques**

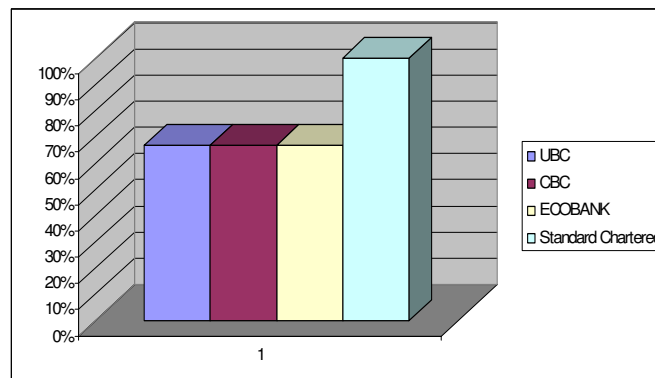


Figure 13 expresses the rate of employment of the various credit risk management techniques by the four banks. It still shows Standard Chartered Bank at the lead.

Given the breakdown above, a detailed analysis is carried out below on how each of the credit risk management techniques is carried out across the banks.

### **5.3.1 Qualitative Techniques**

To qualitatively manage credit risk, the selected banks embark on two main processes;

- i) Screening ( involving due diligence), and
- ii) Monitoring (involving use of restrictive covenants).

Each of these processes is analysed below:

#### **5.3.1.1 Screening**

Findings indicate that all four banks consider screening of borrowers as an integral part of their lending processes. Given that borrowers are more likely to have more information about their investment opportunities and activities than they do, these banks engage in rigorous information producing activities. This involves putting measures in place to ensure that bad credit risks are sorted out from the good ones so that lending can be profitable (Casu et al, 2006; Mishkin 2007). To ensure effective screening, the selected banks collect reliable information from prospective borrowers, use personal judgements or carry out due diligence and assess the value of pledged collateral securities.

Findings indicate that when loans are requested for by borrowers, the first thing the banks request them to do is to fill out forms that elicit a great deal of information about their personal finances such as salaries, bank accounts and other assets like cars, insurance, etc. Information on other variables such as outstanding loans, bank accounts and the number of years the prospective borrowers have worked is equally collected.

In the case of business loans, information on the company's profits and losses and its assets and liabilities is collected and an evaluation of the likely future prospects of the business is equally carried out. This information is then used to evaluate how good a credit risk borrowers are by making a comparison with past obligors with similar characteristics (Bain & Howells, 2005).

Note that given the focus of domestic banks on SMEs, information gathering especially on the financials and business prospects of these SMEs is not always easy. Firstly because, most SMEs do not have formal ways of keeping accounting records and secondly, because even in cases where these records exist, they would have been prepared in the most unconventional manner making interpretation difficult or impossible. In extreme cases, accounting records are even fine-tuned to influence the decision of loan officers (Fomenky 2006). Given that information collected from SMEs is most likely to be sketchy or misleading, there is an inherent risk involved in lending to SMEs which greatly exposes domestic banks to high default risk (Ayaba, 2006). However, lending officers of the banks for this study attest that the bank margin generated from lending to SMEs, compensates for the risk involved to a meaningful extent.

Since deciding on how good a risk is can not be entirely systematic, loan officers in these banks equally use their personal judgements in the screening process. In the case of personal loans for instance, this judgement can be in the form of calling employers of prospective borrowers or talking to some of the personal references supplied. In the case of business loans, due diligence is carried out by embarking on company visits, interviewing employees, scrutinizing financials, etc. Finally, providing collateral securities constitutes an integral part of the screening processes of all four banks. Special endeavours are made in assessing the value of the collaterals and loans are given out based on the strength (s) of the collaterals or rejected based on their weakness (es). It is worthy of note that SMEs equally have serious limitations in terms of providing collateral securities for requested loans. This further makes lending to them much riskier.

Figure 11 below schematically illustrates the steps involved in the screening process adopted by the four banks

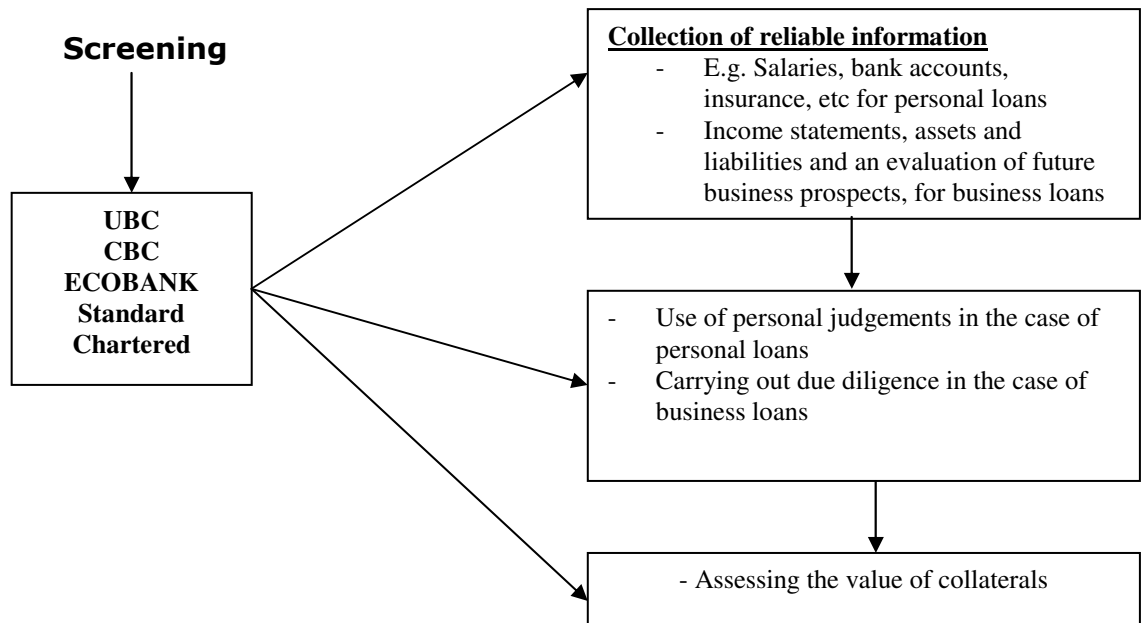
**Figure 11: The Screening Process Adopted by the Selected Banks**

Figure 11, above is an illustration of the main steps involved in the screening processes adopted by UBC, CBC, ECOBANK and Standard Chartered Bank Cameroon.

### 5.3.1.2 Monitoring

Table 9 above illustrates that all the banks involved in this study embark on some aspect of monitoring once loans are granted. In CBC, UBC and ECOBANK, Account Relationship Managers (ARMs) are expected to keep in touch with borrowers once a loan is granted. These ARMs have the responsibility of ensuring that payments are made when due or of finding out why payments were not made or delayed. They are equally responsible for building sustainable relationships with borrowers. Note that ARMs in these banks are assigned a number of accounts over which they have responsibilities.

In Standard Chartered Bank, there is a Credit Control Department (CCD) with the responsibility of monitoring credits and enforcing covenants where there is a breach. This department basically ensures that loans are granted following the guidelines of the company's loan policy and prudential lending standards and that

those on loans repay their loans when due. Figure 12 below schematically describes the monitoring process adopted by these banks:

**Figure 12: The Monitoring Process Adopted by the Selected Banks**

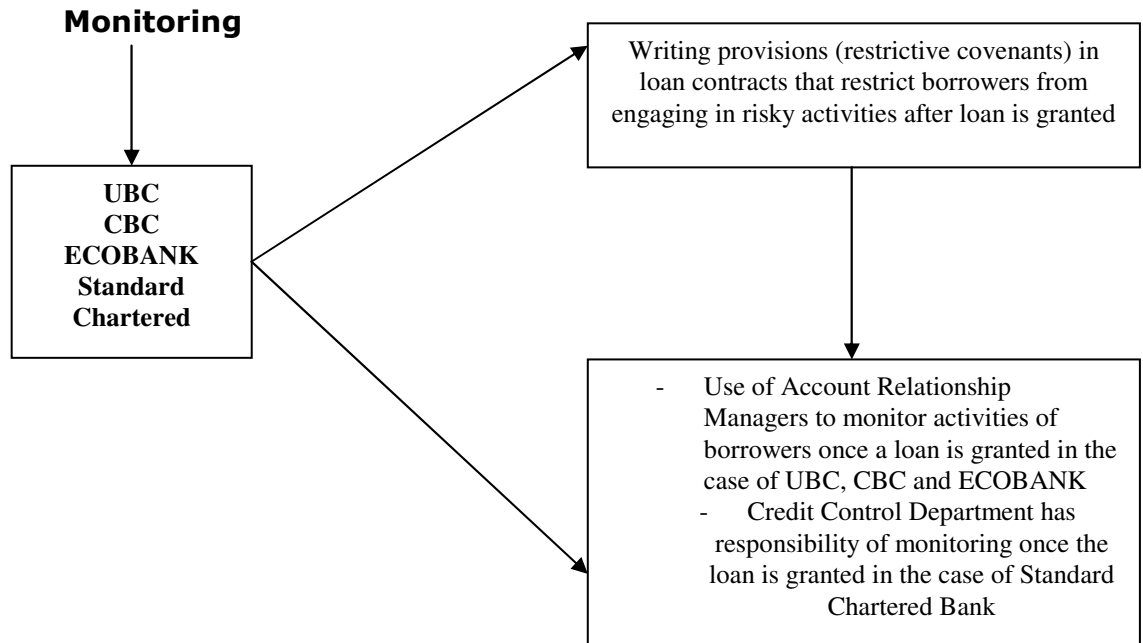


Figure 12 above illustrates the steps involved in the monitoring processes adopted by the four banks.

### 5.3.2 Quantitative Techniques

Findings indicate as illustrated in table 9 that of the four banks used in this study, only Standard Chartered Bank of Cameroon uses statistical methods in determining the probability of default. The other banks rely entirely on qualitative techniques of managing credit risk while Standard Chartered employs both qualitative and quantitative approaches.

Given an understanding of (i) the rate of implementation of the principles of credit risk management and (ii) the rate of employment of the credit risk management techniques by each of the banks, the section that follows shows the impact of these on the overall loan portfolios of the selected banks.



## 5.4 The Impact of Credit Risk Management on the Overall Loan Portfolios of the Selected Banks

The table below illustrates the impact of credit risk management on the overall loan portfolio by showing the relationship between the rate of implementation of the principles of credit risk management, the rate of employment of the qualitative and quantitative techniques of credit risk management and the rate of non-performing loans of the overall loan portfolios of the given banks.

**Table 11: Assessment of the Impact of Credit Risk Management on the Overall Loan Portfolio**

Banks	Rate of Implementation of Credit Risk Management Principles	Rate of Employment of Credit Risk Management Techniques	Rate of non performing Loans-- of the Overall Loan Portfolio (COBAC Report, 2007)
UBC	42%	67%	Greater than 20%
CBC	42%	67%	Greater than 20%
EBC	74%	67%	Less than 20%
SCBC	79%	100%	Less than 15 %

*The table above illustrates the relationship between the rate of implementation of credit risk principles, the rate of employment of credit risk management techniques and the rate of non-performing loans given the overall loan portfolios of the selected banks. Given the sensitive nature of this study, the precise rate for non-performing loans could not be mentioned.*

Findings indicate that, domestic banks with lower rates of implementation of both credit risk management principles and techniques experience a much higher rate of default on their overall loan portfolios than do multinational banks which carry out a rigorous implementation of both credit risk management principles and techniques. Findings equally suggest that Standard Chartered bank of Cameroon with the highest rate of implementation of both credit risk management principles and techniques has the lowest rate of default on its overall loan portfolio. This is indicative of an inverse relationship between credit risk management principles and techniques and the rate of default.

With this understanding, the role of Information Technology (IT) in the lending processes of these banks is examined next.

## **5.5 The Role of Information Technology in the Lending Process**

Findings indicate that information technology plays a significant role in the lending process of each of the banks. Each bank has a banking software that helps in collecting and storing clients' loan information, automatically processing loans in terms of establishing repayment schedules based on the period of the loan and the rate of interest, automatically collecting loan instalments, producing a list of delinquent cases for remedial actions and preparing updated loan reports at the touch of a button. It is worth noting that the banking softwares used by these banks are assessed and approved by COBAC and must be customized to take into accounts all COBAC requirements.

It is also worth noting that, while information technology plays an integral part in the lending process in each of the banks for this study, domestic banks do not possess sophisticated banking softwares which go largely beyond what is required by COBAC. The Multinational banks on the other hand, invest enormously in information technology (and business process reengineering) with a continuous effort towards converting every manual lending process to an automatic (or automated) process.

## **5.6 Chapter Summary**

Chapter 5 presented and analyzed data collected from four commercial banks in Cameroon using mainly three concepts examined in Chapter Two; (i) the Principles of Credit Risk Management with 19 underlying indicators , (ii) the qualitative methods of managing credit risk with highlights on the screening and monitoring methods adopted by each of the selected banks and, (iii) the quantitative methods of managing and measuring credit risk with focus on statistical techniques used in ascertaining the probability of default by the chosen banks as well as established a relationship between the rate of implementation of

credit risk management principles and techniques and the rate of default on the overall loan portfolios of the selected banks. Findings on the role of information technology in the lending process of each of the banks are also examined at the end of the chapter.

The next chapter presents conclusions and recommendations based on these findings.

# ***Chapter 6:***

# ***Conclusions and***

# ***Recommendations***

## **6.1 Chapter Preview**

The theoretical underpinnings of this study advocate that banks should adopt a particular approach in managing and measuring the credit risk inherent in their lending processes and practices. This inevitably requires them to adopt and implement specific credit risk management principles and techniques so as to minimize the rate of default by prospective borrowers and any eventual effect that this may have on their overall loan portfolios. Some of the banks used in this study indicate that they make meaningful efforts towards this direction either by adhering entirely to a qualitative approach or to both a qualitative and quantitative approach of credit risk management.

This chapter presents conclusions and recommendations based on findings and the analysis carried out in chapter five. Conclusions are made on three aspects; (i) on credit risk management techniques (ii) on the impact of credit risk management on the overall loan portfolio and, (iii) on the impact of information technology on credit risk management of the selected banks. Recommendations are made thereof based on the pitfalls identified in the conclusions.

However, before looking at the conclusions and recommendations, it makes academic sense to mention the limitations of the study.

## **6.2 Limitations of the Study**

This author recognises that this study may have a number of limitations:

Firstly, only four out of 10 banks in the Cameroonian economy were used in the study. Findings may produce different results if all the banks are taken in to consideration and placed under the same assessment criteria and research methodology as the ones employed by this author.

Secondly, the underlying assumption of the study presupposes that effective credit risk management can guarantee the long term success of any banking institution. This is debatable and questionable under certain circumstances given

that credit risk management is necessary but not sufficient condition for sound bank management.

Thirdly, given the business culture in Cameroon which is that of fine-tuning information for specific purposes or hiding information deemed to be sensitive (like information on the change in the overall loan portfolios of the selected banks for this study over time), the results obtained may not be conclusive.

However, the study was conducted under sound research methodology which justifies the conclusions below.

### **6.3 Conclusions**

Results from this study indicate that banks in Cameroon implement and employ a number of credit risk management principles and techniques as described in chapter two and analysed in chapter five in order to minimize the rate of defaults by prospective borrowers. The study however reveals that domestic banks are more exposed to credit risk than multinational banks given their low degree of implementation and employment of credit risk management principles and techniques. The study further reveals that domestic banks are more risk bearing (by over concentrating on particular sectors) and less rigid in their credit risk management approach (by being less rigorous in applying credit risk management principles and techniques).

However, note is taken of the fact that employing rigorous credit risk management techniques involves enormous cost implications which may not be beneficial to the banks in question at this moment in time given the nature of the Cameroonian banking industry, the underdeveloped banking culture of Cameroonians and the frailty of financial markets in Cameroon.

Secondly, results equally reveal that there is a correlation between the implementation and employment of credit risk management principles and techniques and the rate of default by borrowers. This is illustrated by the fact that domestic banks which adopt a less rigorous credit risk management approach equally suffer from a high rate of default on their overall loan portfolios.

Conversely, multinational banks suffer less from default by borrowers by adopting a more rigorous credit risk management approach. This confirms the assumption of the study which states that; ineffective credit risk management leads to non-performing loans which may eventually put a bank's solvency at stake.

Thirdly, information technology it is revealed plays a significant role in the overall lending processes of the banks used in this study. Results indicate that all the banks in the study have a banking/accounting software that helps in the management of their credit processes. However, results further reveal a less innovative approach by domestic banks in terms of their information technology infrastructure and in reengineering their lending processes. Multinational banks embark on an ongoing assessment of their automated lending processes and business processes reengineering (BPR) is taken to be of great significance.

## **6.4 Recommendations**

Following the conclusions above, a number of recommendations are made:

Firstly, given the impact of credit risk management on the overall loan portfolios of the selected banks, there is an urgent need for these banks (especially the domestic ones) to improve on their credit risk management practices. These banks need to embark on a more rigorous implementation of the basic principles of credit risk management. A 42% rate of implementation is indicative that they stand to suffer from a long term decline in the value of their assets if corrective measures are not put in place now. For the multinational banks, expedient actions should be taken to address areas of shortfalls such as; carrying out an independent evaluation of their strategies, policies, procedures and practices related to credit granting and establishing prudential limits to restrict their exposures into single group of connected counterparties.

Secondly, given the focus of domestic banks on SMEs for their lending, there is urgent need to embark on training programmes to equip these banks with specific tools of managing the risk involved in lending to this group of business units. Recall that a major problem with SMEs is their inability to provide reliable

information on their financials and business future plans. They approach business purely from an informal perspective and relying on personal judgements to make a decision as to whether to grant a loan or not to this group of units is very risky. This situation is even made worse given that domestic banks rely only on qualitative credit risk management techniques in assessing default probability. However, given that relying on these in relation to SME lending is inevitable, there is absolute need for more informed judgement to be employed in this direction.

Thirdly, given the role of information technology in the lending process, updating the information technology infrastructure of all the banks should be an ongoing process. Not only can this aspect help the banks in effectively managing their lending processes, it can equally serve as a competitive weapon by helping the banks to handle other aspects of operations expediently and efficiently.

Fourthly, given that financial markets are crucial to promoting greater economic growth and efficiency by channelling funds from people who do not have a productive use for them to those who do (Mishkin, 2007), there is absolute need for more efforts to be made towards developing responsive financial markets in Cameroon in order to encourage and ease the mobilization of capital and efficient production of information. In this light, opening of a functional stock exchange in Cameroon needs to be given a serious thought at this point in time. The fact that there is currently no stock exchange in Cameroon makes gathering of reliable information from business units difficult which may consequently impact negatively on bank lending.

Finally, credit risk management is one out of many things that constitute sound bank management. Its employment is of course necessary but not sufficient for effective bank management. In this light, credit risk needs to be managed in conjunction with other risks and operational aspects. There is for instance, a strong correlation between credit risk and liquidity risk. These are both risks inherent in intermediating funds by banks from depositors to lenders and because of this, it is incumbent on banks to ensure that the probability of default is minimised by engaging in rigorous loan screening and reviewing processes



(credit risk management) and holding enough liquid assets to enable them meet requests for cash when the need arises (liquidity risk management).

## **6.5 Areas for Further Research**

In carrying out this study, this author identified a number of areas that could be suitable for further research.

Firstly, this study contains no details that show the relationship between credit risk and liquidity risk management in banks. The inherent link between this two in bank management necessitates further scrutiny. Results of this study are limited to issues related to credit risk management in specific banks of a given economy. A broader perspective on bank management could be considered.

Secondly, the visible efforts of banks in developing economies to address general problems associated with bank lending (including credit risk), needs to be closely assessed. Some Banks seem to be genuinely committed to eradicating these problems, while others do not display any evidence of that commitment. Because of the banking reforms carried out in developing economies of recent, this area is worth exploring further in to.

Finally, the role of financial systems in developing economies has not really been given adequate consideration by most researchers. Given that financial systems in developing economies are underdeveloped and consequently expose characteristics different from those in developed economies, it could be worthwhile researching in to this area.

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# ***Appendices***



## APPENDIX 1: Major Bank Insolvencies

Systematic Cases	
(most or all Bank Capital)	Paraguay (1995) Uruguay ((1981-84) Venezuela (1980, 1994-95)
<b>Africa</b>	<b>Middle East &amp; North Africa</b>
Benin (1988-1990)	Egypt (early 1980s, 1990-91)
Burkina Faso (late 1980s)	Israel (1977-83)
Cameroon (1987 - 1996)	Kuwait (1980s)
Central African Republic (1980s & 1994)	Morocco (early 1980s)
Chad ( 1980s & 1990s)	<b>Europe and Central Asia</b>
Congo (1980s & 1991)	Turkey (1982 -85)
Cote D'Ivoire (1988- 1991)	<b>Transition Economies</b>
Eritrea (1993)	Bulgaria (1990s)
Ghana (1982-1989)	Estonia (1192-94)
Guinea (1985, 1993-95)	Hungary (1991-95)
Kenya (1985-89, 1992, 1993-95)	Latvia (1995)
Madagascar (1988)	Lithuania (1995-96)
Mauritania (1983-93)	Poland (1990s)
Mozambique ( 1987-present)	Romania (1990-93)
Nigeria (1990s)	Russia (1995)
Senegal (1988-91)	Slovenia (1990s)
South Africa (1977)	<b>Industrial Economies</b>
Tanzania (1987,1995)	Finland (1991-93)
Togo (1993-present)	Japan (1990s)
Uganda (1994)	Norway (1987-89)
Zaire (1991-92)	Spain (1977-85)
Zambia (1995)	Sweden (1991)
<b>Asia</b>	<b>Borderline or Smaller Cases</b>
Bangladesh (late 1980s -present)	<b>Asia</b>
India (1994-95)	Hong kong, (1982-83, 1983-86)
Nepal (1988)	Indonesia (1994)
Philippines (1981-87)	Malaysia (1985-88)
Sri Lanka (1989-93)	Singapore (1982)
Thailand (1983-87)	Taiwan China (1983-84,1995)
<b>Latin America</b>	<b>Industrial Economies</b>
Argentina (1980-82), 1989-90,1995)	Australia (1989-90)
Bolivia (1986-87)	France (1999-95)
Brazil (1990, 1994-1995)	Germany (late 1970s)
Chile (1976, 1981-83)	New Zealand (1987-90)
Colombia (1982 87)	United Kingdom (1974-76)
Costa Rica (several instances)	United States (1984 -91)
Ecuador (early 1980s)	
Mexico (1981-82 & perhaps through1990-91,1995)	
<b>Source: Caprio &amp; Klingebiel 1996</b>	

## APPENDIX 2: Interview Guide

1. What is your lending strategy?.....  
.....  
.....  
.....  
.....

2. Who decides the lending strategy?.....

3. Do you have a loan (credit) policy?.....  
.....  
.....

**Probe:** What do you consider to be the strength(s) of this policy?.....  
.....  
.....  
.....  
.....

**Probe:** What do you consider to be the weaknesses of this policy?.....  
.....  
.....  
.....  
.....  
.....

4. Does this policy define a clear procedure for the screening of loan applications?  
.....

**Probe:**  
How?.....  
.....  
.....

5. Does this policy define a clear procedure for monitoring loans (and other credit lines) after they have been granted (or approved)?

**Probe:**  
How?.....  
.....  
.....

6. Do you rank loan applicants according to their likelihood to default in the loan screening process?.....

**Probes:**  
How is this done?.....  
.....

Does this influence the loan pricing process in terms of the risk premium and the interest rate?

.....  
.....

7. Which qualitative methods do you use in ascertaining the likelihood to default?

.....  
..... **Probe:** .....  
Please describe.....  
.....  
.....

8. Which quantitative methods do you use?

.....  
.....  
.....

9. How important is this in your lending process?

.....  
.....  
.....  
.....  
.....

10. How would you define an outright default in terms of your lending policy?

.....  
.....

11. How do you monitor the portfolio as a whole? How do you identify what you consider problem loans in the overall portfolio?

.....  
.....

12. How would you define your clients in terms of their repayment attitude?

.....  
.....  
.....  
.....

13. Does this repayment attitude affect your liquidity base and your liquidity management strategy?

..... **Probe:** .....  
How?.....  
.....  
.....

14. What reasons are generally associated with loan default in your bank?.....  
.....  
.....  
.....  
.....

15. How relevant is information technology in your lending process?.....  
.....  
.....

16. Do you have a loan processing software?.....  
.....  
.....  
.....

17. Does this help in the screening and monitoring of loans?.....  
.....  
.....

**Probe:**  
How?.....  
.....  
.....

18. Is this software compatible with your lending strategy and credit policy?.....  
.....

**APPENDIX 3: Comparability of the Positions of those Interviewed**

<b>Banks</b>	<b>Positions of those Interviewed</b>
UBC	<ul style="list-style-type: none"> <li>i) Head of credit Division</li> <li>ii) Head of Consumer Banking</li> <li>iii) Credit Analyst</li> </ul>
CBC	<ul style="list-style-type: none"> <li>i) Head of Banking Operations</li> <li>ii) Head of Credit Division</li> <li>iii) Chief Account Relationship Manager</li> </ul>
EBC	<ul style="list-style-type: none"> <li>i) Head of Credit Department</li> <li>ii) Chief Account Relationship Manager</li> <li>iii) Credit Risk Analyst</li> </ul>
SCBC	<ul style="list-style-type: none"> <li>i) Head of Credit</li> <li>ii) Head of Credit Control</li> <li>iii) Credit Risk Analyst</li> </ul>

*Given the principal objective of the study, focus was on those who directly had an involvement in the credit granting processes in the various banks especially those in charge of implementing credit policies and of coordinating lending transactions and activities within all the branches of the networks of the respective banks.*

**Appendix 4: List of Participants and Duration of Interviews**

<b>Banks</b>	<b>Positions of those Interviewed</b>	<b>Interview Duration</b>	<b>No of Visits</b>
UBC	i) Head of Credit Division	About 3 hours	3
	ii) Head of Consumer Banking Division	2 hours	1
	iii) Credit Risk Analyst	2.5 hours	3
CBC	i) Head of Banking Operations	about 4 hours	5
	ii) Head of Credit Division	1 hour	1
	iii) Chief Account relationship Manager	2 hours	2
EBC	i) Head of Credit Department	1.5 hours	1
	ii) Chief Account relationship Manager	2 hours	2
	iii) Credit Risk Analyst	about 3 hours	3
SCBC	i) Head of Credit	2.5 hours	3
	ii) Head of Credit Control	3 hours	2
	iii) Credit Risk Analyst	about 3 hours	4

*To successfully cover all the topics on the interview guide and given the tight schedule of the participants, a number of visits had to be embarked upon. This was particularly true of CBC and Standard Chartered Bank. However, all salient issues pertaining to the study were covered during the interviews and a majority of the participants illustrated genuine interest in the research area.*