A SURVEY OF TECHNIQUES OF CREDIT RISK MANAGEMENT IN MICRO-FINANCE INSTITUTIONS IN KENYA

BY

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DECLARATION

This is my own original work and has not been presented for award of any degree in any university.

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This research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION:

To the three most important women in my life: Rose, Fasca and my late mum Sophie Nasike.

To my children Sophie, Deborah, Stella twins Paul, Hellen and Sharon

My uncle Samson Lusulayi for the financial support he gave towards my education.

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ABSTRACT

The objective of the study was to identify the techniques used by micro finance institutions in the management of credit risk in Kenya, and to examine the main challenges facing the micro finance institutions operating in Kenya in the management of credit risk.

To satisfy the research objectives, the study used a descriptive research design comprising a sample of thirty (30) micro finance institutions. The sampling frame included the Central bank of Kenya Directory (2006) of micro finance institutions. Purposive sampling was used to select one credit officer and one loan officer from each of the sampled institutions.

Primary data was collected using semi-structured questionnaires. The questionnaires were dropped and picked up later and others sent and received via email. The target respondents were the institutions' loans and credit officers. Once the pertinent data were collected the researcher carried out analysis of the same using mean scores, percentages and standard deviations.

The study established that most microfinance institutions use 6C techniques of credit risk management. The study also revealed that understanding the organizations exposure to the customers is treated as critical by the microfinance institutions. To avoid loan losses, the microfinance institutions use follow ups. The study established that MFI's take loan review analysis as crucial aspects of risk management by doing proper documentation and analysis. The institutions also resolve to taking litigations in situations where the borrower's financial situation and structure have been altered and the original promised value of collateral differ. The study established that majority of the institutions used CreditMetrix to measure the credit migration and default risk.

The results show that the microfinance institutions are faced with the challenge of strict operational regulations from the Central Bank of Kenya. The government has also not put any policy in place that concerns the operations of the MFIs. Loan recovery is still a challenge to majority of the institutions.

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CHAPTER ONE: INTRODUCTION

1.1 Background

Financial services have witnessed a significant change in their market since the early 1990s. The traditional lines of demarcation between the different financial service providers were eroded as building societies moved into the current account business, taking a "slice" of the high street banks' market, and banks retaliated by moving into the "mortgage market" in a much bigger way and taking a "slice" of the building society market. Mergers and acquisitions compounded the turmoil as management skills for these new operations became stretched. The pace of change has continued to accelerate as organizations get into the 21st Century. This is attributed to technological advancement, globalization of markets, demand for more creativity and innovation by customers for the manufactured goods and services. The speed and pace of change demanded of organizations is enormous and this has compelled them to look for more innovative and creative ways if they are to stay in business (Ammons, 2001).

Since the mid 1990s new players such as high street retailers have moved aggressively into the financial services market offering credit cards, current accounts and, more recently, savings accounts to their customers. In many cases these have been as joint ventures with a traditional financial service provider, but, for others, it has been a venture into the unknown. Increased media attention has raised the level of customer awareness in financial service matters and has resulted in a willingness to trade loyalty for competitive pricing. Financial service providers have responded by providing a wider range of products, often with short-term advantages, in response to a competitor's new product rates. Technological advancement has enabled organizations to change their product features on a more regular basis to remain competitive (Whymark, 1998).

The competitive threat and potential loss of market share have prompted managers to find ways and techniques of managing the risk to financial service providers especially from their lending operations. The micro finance industry has witnessed new entrants into the credit risk market, willingness of customers to "shop around" for the best deals and the need to operate efficiently as possible in order to improve competitiveness (Anson *et.al.* 2004).

1.1.1 Benefits of loan management

Minimizing bad Loans has benefits to all the parties involved especially the lenders: It helps in the identification of potential credit risks related to loan structuring, underwriting and documentation. Secondly, it helps in gathering information required to monitor borrower relationships for changes in risk, including determining the appropriate level of monitoring and identifying information required. Thirdly, it helps in the evaluation of changes in credit risk that require action, including assessing internal and external factors and recognizing and evaluating early warning signals. Fourthly, it assists in selecting appropriate solutions to solve emerging credit problems by using strategies that optimize the outcome for the institution. Fifthly, it assists in the recognition of lending situations that entail legal risk or exposure to lender liability. Lastly, it helps in the identification of the potential impact of bad loans on the institution (Zeller, 2001).

1.1.2 Credit Risk Management

Credit risk is the risk of loss due to a debtor's non-payment of a loan or other line of credit (either the principal or interest (coupon) or both). A **loan** is a type of debt. All material things can be lend but the focus here is exclusively on monetary loans. Like all debt instruments, a loan entails the redistribution of financial assets over time, between the lender and the borrower. A borrower initially receives an amount of money from the lender, which is paid back, usually but not always in regular installments, to the lender. This service is generally provided at a cost, referred to as interest on the debt. Acting as a provider of loans is one of the principal tasks for financial institutions. For other institutions, issuing of debt contracts such as bonds is a typical source of funding. Bank loans and credit are one way to increase the money supply. **Interest** is the "rent" paid on borrowed money. Lenders receive interest as compensation for foregoing the use of their funds now. The original amount lent is called the "principal," and the percentage of the principal which is paid / payable over a period of time is the "interest rate" (Ivey, 2002; Heaton, 2002).

Corporate treasurers have in recent years grown accustomed to managing various dimensions of their firms' risk profiles. The use of derivatives to hedge interest rate and foreign exchange exposure has become a commonplace. The array of derivative instruments include futures

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contracts, forward contracts, option contracts, swap contracts, cap and floor agreements. Indeed, for multi-national firms, the management of such exposure is a routine of the treasury function (Anson *et.al.* 2004). One aspect of financial risk that has proven difficult to hedge, however, has been that of credit risk facing firms. This risk takes several obvious forms. For example, a non-financial corporation holding a large portfolio of the bonds of its customers and/or suppliers is clearly exposed to credit risk (Anson M.J.P., *et.al.* 2004; British Bankers' Association, 2002).

Credit risk is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization.

For most financial institutions, loans are the largest and most obvious source of credit risk. However, other sources of credit risk, include the banking book and the trading book, and off the balance sheet activities. Financial institutions are increasingly facing credit risk (or counterparty risk) in various financial instruments other than loans, including acceptances, inter-bank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions. Financial and industrial corporations have every incentive to improve their modeling and trading of problem loan/credit risk. The explosive growth of the credit derivatives market in the industrial and commercial sector has distributed credit risk through the financial system, packaged in new forms. An expanding credit risk market raises possibilities for corporate treasurers to minimize exposure to credit risk (Mark, 2006).

1.1.3 Techniques of Credit Risk Management

Institutional concerns about commercial credit risk are on the rise due to economic uncertainties, incidents of corporate misconduct and overemphasis on loan portfolio growth during boom years. Effective risk management begins with sound underwriting practices, including loan structuring and documentation. After the loan is booked, accountability for its ultimate repayment rests with individuals who need to monitor, evaluate and take action on credit issues. While these individuals are likely to have had training and experience in analysis and underwriting, most need additional skills and knowledge to actively prevent and solve potential problems while managing the existing credit relationship (Guay and Kothari, 2003).

This has necessitated a strong business case to gain support and commitment from management, by identifying the key business needs of credit risk or problem loan management and focusing around these needs as a strategy. This will effectively balance high and low risk business and maintain good business. Secondly, the institution will optimize business volumes by operating efficient systems and processes, fully understand their exposure to the customers, proactively forecast how many loans might go bad and finally, minimize losses when loans go bad through a quick and effective response (Whymark, 1998).

Settlement risk includes elements of liquidity, market, operational and reputation risk as well as credit risk. The level of risk is determined by the particular arrangements for settlement. There are several factors that have a bearing on settlement risk. These are: first the timing of the exchange of value which in normal circumstances keep on changing over time. Secondly, payment or settlement finality which may be different from the initial agreement. Thirdly, the role of intermediaries and clearing houses. This objective of settlement risk is to meet the challenges ahead and guarantee future superior performance. Most financial institutions have been able to look outside their own set – ups for more superior performances and managed to internalize what they have observed in the management of their credit risk (Ivey, 2002).

1.1.4 The Micro finance Sector in Kenya

Microfinance provides an enormous potential to support the economic activities of the poor and thus contribute to poverty alleviation. Widespread experiences and research have shown the importance of savings and credit facilities for the poor and MSEs. This puts emphasis on the sound development of microfinance institutions as vital ingredients for investment, employment and economic growth.

The potential of using institutional credit and other financial services for poverty alleviation in Kenya is quite significant. About 18 million people, or 60% of the population, are poor and mostly out of the scope of formal banking services. According to the National Micro and Small Enterprise Baseline Survey of 1999, there are close to 1.3 million MSEs employing nearly 2.3 million people or 20% of the country's total employment and contributing 18% of overall GDP and 25% of non-agricultural GDP. Despite this important contribution, only 10.4% of the MSEs receive credit and other financial services. The formal banking institutions in Kenya over the years have regarded the informal institutions as risky and not commercially viable. However, this situation is fast changing due to increased competition in the banking industry in Kenya.

According to the Poverty Reduction Strategy Paper (PRSP) of 1999, a large number of Kenyans derive their livelihood from the MSEs. Therefore, development of these institutions represents an important means of creating employment, promoting growth, and reducing poverty in the long-term (www.treasury.go.ke/). However, in spite of the importance of these institutions, experience shows that provision and delivery of credit and other financial services to the MSEs by formal financial institutions, such as commercial banks has been below expectation. This means that it is difficult for the poor to climb out of poverty due to lack of access to finance for their productive activities. Therefore, new, innovative, and pro-poor modes of financing low-income households and MSEs based on sound operating principles need to be developed (www.treasury.go.ke).

In the past, microfinance institutions (MFIs) established using either an NGO or a savings and credit co-operative societies framework have been important sources of credit for a large number of low income households and MSEs in the rural and urban areas of Kenya. The MFIs have, however, operated without an appropriate policy and legal framework. There is therefore need to focus more on these institutions to enhance their effectiveness in the provision of savings, credit and other financial services to the poor and MSEs. The Government of Kenya recognizes that greater access to, and sustainable flow of financial services, particularly credit, to the low-income households and MSEs is critical to poverty alleviation (www.treasury.go.ke).

Over 100 organizations, including about 50 NGOs, practice some form of microfinance business in Kenya. About 20 of the NGOs practice pure micro financing, while the rest practice micro financing alongside social welfare activities. Major players in the institutions are fifty two (52) see Appendix 3, (www.treasury.go.ke/).

1.2 The Statement of the Problem

Micro finance institutions in Kenya have faced a number of constraints as regards credit risk management that need to be addressed to enable them improve outreach and sustainability. The major impediment to the development of micro finance business in Kenya is lack of specific legislation and set of regulations to guide the operations of the micro finance institutions. Despite the fact that MFIs are formed under eight Acts of parliament, there exist no regulations to address issues regarding to ownership, governance, and accountability. This has contributed to a large extent to the poor performance and eventual demise of many MFIs because of a lack of appropriate regulatory oversight. (http://www.microfinancegateway). Lack of regulations has resulted in Micro finance institutions operating without sound credit management procedures, which has lead to non-performing loans.

Therefore, to stimulate the development of the institutions, proper techniques should be put in place in credit risk/ problem loan management alongside setting appropriate laws, regulations and supervision framework (http://www.microfinancegateway.org/ www.treasury.go.ke/). For most microfinance institutions, loans are the largest and most

obvious source of credit risk. However, other sources of credit risk include the banking book, the trading book, and off-the-balance-sheet activities. But this study looks at loans as source of credit.

Credit risk arises from uncertainty in a given counterparty's ability to meet its obligations. The increasing variety in the types of counter parties (from individuals to sovereign governments) and the ever expanding variety in the forms of obligations has meant that credit risk management has jumped to the forefront of risk management activities carried out by micro finance firms in the financial services industry.

A number of studies have provided the discipline with insights into the practice of risk management within corporate institutions. Fatemi and Glaum (2000) provided a comprehensive picture of the risk management practices of German firms, including interest rate risk management, foreign exchange risk management, and the use of derivatives, risk management systems, and the behavioral aspects of risk management. They compared the perceived relevance of different types of risk with the intensity of their management and reported that no respondents admitted major difficulty in developing a risk management system. They found out that firm survival is rated as the top goal of risk management. Further, they observed that half of the firms centralize treasury management and 88% use derivatives. They also ranked derivatives used and their associated problems.

Jalilvand et al. (1997), Geczy et al (1997), investigated derivative use and risk management practices by U.K non-financial companies. They surveyed 401 U.K non-finance companies and investigated the extent to which derivatives are used and how they are used to manage exposures. They found out that large firms used derivatives than private firms and derivatives usage is greatest among international firms. Further, they observed that of the firms not using derivatives, half do not, because their exposures are not significant and that the most important reason they do not use derivatives is costs of establishing and maintaining derivatives programs exceed the expected benefits. They also observed that foreign exchange risk is the most commonly managed risk and the use of hedging with derivatives is to manage the volatility in cash flows. Others, such as Belk and Glaum (1990), Lessard and Zaheer

(1990), Edelshain (1992), Glaum and Roth (1993), Batten et al. (1993) reported on the exchange risk management practices of multinational corporations.

The only local study was done by Njiru (2003) on credit risk management by coffee cooperatives in Embu district. His was a census study of 24 cooperative societies. He found out that, none of the credit societies use quantitative methods to evaluate the credit worthiness of their members but use qualitative methods only like the 6Cs technique i.e. character, capacity, condition, collateral, capital and control but to a small extent. In addition, he observed that there exists a common feeling that shared information between coffee cooperative societies is vital in filtering out un-creditworthy members. He also observed that large societies manage their credit risks better than small ones since they have a lower level of credit default. This was attributed to the fact that large societies employed qualified and experienced staff.

While the above research outcomes provide valuable insights in credit risk management, they only provide partial insight on techniques of credit risk management by the MFIs in Kenya. There is no known study to the researcher, which has been done on the survey of techniques of credit risk management in Micro-Finance Institutions in Kenya. Therefore, knowledge gap exist as to whether Micro-Finance Institutions use any credit risk management techniques. Also as an improvement to the study done by Njiru (2003), this study uses a sample of 30 micro finance institutions registered under the eight Acts of Parliament. Further, the study targets 60 loans and credit officers.

1.3 Objectives of the Study

1. To identify the techniques used by micro finance institutions in the management of credit risk in Kenya.
2. To examine the main challenges facing the micro finance institutions operating in Kenya in the management of credit risk.

1.4 Significance of the Study

The finding of this study is expected to be of importance to the following stakeholders:

Academicians / Researchers

Findings from this research will provide the state of the art with respect to credit risk management techniques in micro finance institutions in Kenya. The findings may stimulate other researchers to venture into credit risk management techniques that have not been studied in the African context. The available literature is full of case studies from the west, which as pointed out by Aosa (1992), cannot be replicated without amendments for organizations operating in Africa.

Micro finance Institutions

Micro finance Institutions managers and other decision – makers will gain an insight into the current credit risk/problem loan management techniques in the microfinance sector. Knowledge of the contemporary risk management techniques will enable them identify, plan, control and effectively manage these risks to enhance corporate success.

Government

The government can use the findings for their research to assist in policy formulation and development of a framework for problem loan management techniques in its ministries. This study might also help in pointing out areas in which state corporations especially the Treasury can develop competencies and capabilities leading to superior performance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to the study. It specifically looks at the processes of credit appraisal in section 2.2, monitoring of loan performance in section 2.3, diversification of loan portfolio in section 2.4, management of bad loans in section 2.5 and a chapter summary given in section 2.6.

2.2 Process of Credit Appraisal

In order to assess the credit risk, it is necessary to take a close look at the borrowers' economic and legal situation as well as the relevant environment (e.g. industry, economic growth) (Seyfried, 2001). The quality of credit appraisal processes depends on two factors, i.e. a transparent and comprehensive presentation of the risks when granting the loan on the one hand, and an adequate assessment of these risks on the other, (Raaij et al, 2005). Furthermore, the level of efficiency of the credit appraisal processes is an important rating element. Due to the considerable differences in the nature of various borrowers (e.g. private persons, listed companies, sovereigns, etc.) and the assets to be financed (e.g. residential real estate, production plants, machinery, etc.) as well the large number of products and their complexity, there cannot be a uniform process to assess credit risks (Raaij et al, 2005)..

2.2.1 Overview of the Credit Appraisal Process

The chart below shows the credit appraisal process.

Fig. 2.1: Credit appraisal process
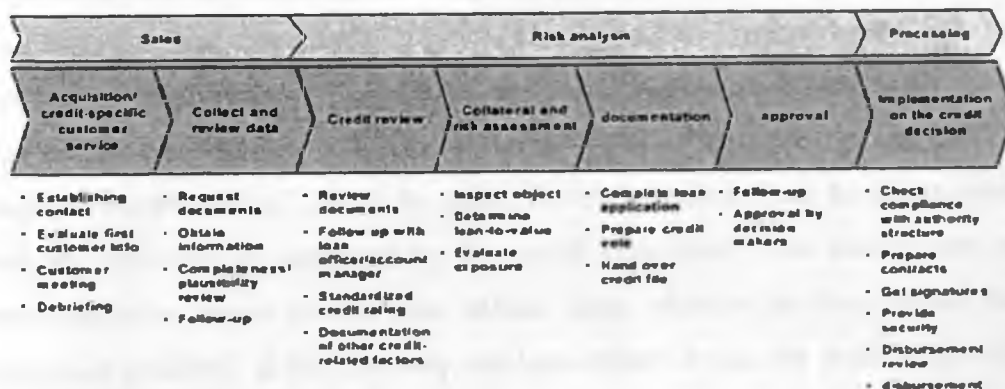
Source: Bessis, (2002)

The vast majority of credit institutions serve a number of different customer segments. This segmentation is mostly used to differentiate the services offered and to individualize the respective marketing efforts (Seyfried, 2001). As a result, this segmentation is based on customer demands in most cases. Based on its policy, a financial institution tries to meet the demands of its customers in terms of accessibility and availability, product range and expertise, as well as personal customer service (Raaij et al, 2005). In practice, linking sales with the risk analysis units is not an issue in many cases at first. The sales organization often determines the process design in the risk analysis units. Thus, the existing variety of segments on the sales side is often reflected in the structure and process design of the credit analysis units (Bessis 2002). While classifications in terms of customer segments are, for example, complemented by product-specific segments, there appears to be no uniform model. Given the different sizes of the financial institutions, the lack of volume of comparable claims in small financial institutions renders such a model inadequate also for reasons of complexity, efficiency, and customer orientation (Bol, 2003). Irrespective of a financial institution's size, however, it is essential to ensure a transparent and comprehensive presentation as well as an objective and subjective assessment of the risks involved in lending in all cases (Raaij et al, 2005). Therefore, the criteria that has to be taken into account in presenting and assessing credit risks determine the design of the credit appraisal processes.

Johnson and Johnson (1985), Hempel and Simonson (1999) and Koch and Macdonald (2000) all pointed out that the activities in the process of commercial and industrial (C&I) loans follow eight steps. These steps are application, credit analysis, decision, document preparation, closing, recording, servicing and administration, and collection. These activities and the primary tasks for those responsible for these activities must be well documented. The first step of the C&I loan process is the application, which is conducted by a loan officer. This step covers the initial interview and screening of a loan request (Consultative Group to Assist the Poorest, CGAP, 2000). Secondly, the credit analysis from the information gathered from the borrower is conducted by the credit department. The analyst then prepares a recommendation report for the loan officer about whether the loan should be granted, rejected, or qualified. In the third step, the loan officer obtains the credit analysis report and determines whether the report accurately describes the borrowing capacity and characteristics

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of the borrower. If collateral is required, the amount of collateral and additional collateral documentation are indicated (Copestake, 2001).

In the fifth step, the loan officer obtains the borrower's signatures and receives collateral. Then the loan operation is closed and the loan proceeds. The sixth step is the recording of the loan conducted by the loan operation and credit department staff. A loan operation clerk classifies and codes the loan for entry into the commercial loan system, and he or she reviews the loan for compliance with the bank's loan policies. Finally, the loan operation clerk and credit department staff member file the loan notes, authorization, and receipts in designated files. The seventh step is loan servicing and administration conducted by a loan operation operator, a loan officer, a credit department staff member, and a financial analyst. The loan operation staff person prepares the loan payment notices to notify the borrower and is responsible for receiving periodic payments. The loan officer makes periodic visits and customer calls to obtain new financial statements from the borrower and provides that information to credit department and reviews the loan for compliance with the loan agreement. A credit department financial analyst also receives and reviews the borrower's periodic financial statements (Demirag, 2004).

In the eighth stage, the loan officer may receive periodic delinquency information and need to follow up on this with borrowers. The loan officer also needs to adjust loan terms and conditions as deemed necessary, and to take legal action if non-collectible procedures and foreclosure on the loan are required. After analyzing these lending activities, a value chain of lending activities can be identified, and the rationale for determining how values are created can be determined (Demirag, 2004).

2.2.2 Steps Leading up to the Credit Review

The execution of the credit review is based on external and internal data on the credit applicant (Raaij et al, 2005). Especially for extensive exposures, considerable resources may be tied up in the process of collecting the data, checking the data for completeness and plausibility, and passing on the data to people in charge of handling, analyzing, and processing the exposure within the bank. These steps can also lead to a large number of procedural errors. As the data included form the basis for the credit review, errors in

collecting, aggregating, and passing them on are especially relevant also from a risk perspective (Bessis 2002).

2.2.2.1 Data Collection

The assessment of a credit applicant's credit standing is based on different data sources and data types in accordance with the type of borrower (Raaij et al, 2005). In any case, a bank must always be interested in having comprehensive and current data on the economic and personal situation of the borrower. In order to ensure consistent customer service, the respective account manager will typically coordinate the gathering of information. The credit review incorporates not only economic data but also qualitative information concerning the borrower. The account manager should thus include a complete and critical picture of the borrower (Bessis 2002). In order to ensure that all the information gathered by the account manager is passed on to the person in charge of the credit review, it would be advisable to prepare standardized and structured reports on customer visits. In practice, this has proven effective in directing conversations with customers as desired (function as conversation guide). This procedure ensures that information is gathered in its entirety and in an efficient manner. The layout of the visit reports should be specified for each segment and should be included in the internal guidelines (Raaij et al, 2005).

To make sure that the data collected is complete, mandatory lists showing what data are required should be used. These lists then have to be adapted to the requirements of the credit review process conforming to the type of borrower in each case (Stomper 2004). In addition to individual borrower data, many cases will require general information on the economic situation of a region or an industry to allow a comprehensive assessment of credit application; here, the bank can make use of external sources. If a bank's credit portfolio shows a focus on certain industries or regions, banks are advised to conduct their own analyses of the economic situation in these fields — this is particularly true if the available external information lacks the necessary detail and/or currency (Raaij et al, 2005).

With regard to the credit review, it is particularly important to constantly update customer data, and the bank should include procedures and timeframes in its internal guidelines. In

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terms of individual processes, it should be ensured that periods should be compared at regular intervals in assessing the exposure. Therefore, the relevant data should be available for at least the previous two, but preferably the last three years.

2.2.2.2 Plausibility Check and Preliminary Review

Before a credit exposure is subjected to a comprehensive credit review, the employee initially in charge should conduct a plausibility check and preliminary review (Bol, 2003). This check should look at the completeness and consistency of the documents filed by the borrower to minimize any process loops and the need for further inquiries with the customer. In addition, sales should carry out an initial substantive check based on a select few relevant criteria. The objectives include the creation of awareness and active assumption of responsibility for credit risk on the part of the sales department (Raaij et al, 2005). The preliminary check is especially significant in segments with high rejection rates, as a comprehensive credit review ties up considerable resources in these segments. The preliminary check should prevent exposures which will most likely be rejected from tying up capacities in risk analysis. The resulting reduction in number of cases dealt with by risk analysis allows a more detailed scrutiny of promising exposures and is thus desirable it terms of risk as well as efficiency (Raaij et al, 2005).

In practice, the distinction between two types of check criteria has proven successful: red criteria, which, if fulfilled, lead to an outright rejection of the exposure (also referred to as knock-out criteria) and yellow criteria, which, if fulfilled, require the sales staff to present a plausible and well documented justification of the respective situation. If this justification cannot be made, the exposure also has to be rejected. In terms of efficiency, it may be necessary in certain customer segments not to consider an exposure any further if two or more yellow criteria are fulfilled at the same time.

2.2.2.3 Passing on Data

Making sure that information is passed on in its entirety is relevant from a risk perspective and concerns those processes in which the credit approval process is not concluded by the account manager himself. If the internal guidelines provide for a transfer of responsibility, or

if the credit review is conducted by two or more people, it is necessary to ensure that the complete set of relevant documents is handed over. It would be advisable to prepare handover reports for this purpose (Raaij et al, 2005).

Handover reports should fully reflect changes in responsibility in the course of the credit approval process as well as any interface occurring in the process. In practice, a modular structure has proven particularly effective for such forms. If possible, they should be kept electronically or, alternatively, as the first page of the respective credit folder.

Raaij et al (2005) points that sales employee has to use the module (table or text module) provided for handing over the exposure to the respective process. This contains, among other things, an enumeration of the documents required for the respective risk analysis segment (completeness checklist). On the one hand, this ensures a smooth transfer of the documents, and on the other, it prevents incomplete files from being handed over to risk analysis. In addition, further modules, e.g. notes taken during customer appointments, should be included in the handover reports. Furthermore, appropriate modules should be included for all other interfaces between sales and risk analysis, or between different persons in processing.

2.2.3 Accounting for Risk Aspects

The quality of the credit appraisal process from a risk perspective is determined by the best possible identification and evaluation of the credit risk resulting from a possible exposure (Raaij et al, 2005). The loans officer uses visiting report is to help him understand the borrower's associated problems. The factors for evaluation generally used in this situation are in line with the 6C principles of basic lending. These 6C's, are character, capacity, capital, collateral, conditions and control (Rose, 1991), which are also important reference indexes for banks when making a credit analysis to decide whether or not a borrower is worthy of a loan. The credit risk can be distributed among four risk components which have found their way into the new Basel Capital Accord (in the following referred to as Basel II) (Bessis 2002): Probability of default (PD), loss given default (LGD), exposure at default (EAD) and maturity (M). The most important components in credit appraisal processes are PD, LGD,

and EAD. While maturity (M) is required to calculate the required capital, it plays a minor role in exposure review (Raaij et al, 2005).

2.2.3.1 Probability of Default

Reviewing a borrower's probability of default is basically done by evaluating the borrower's current and future ability to fulfill its interest and principal repayment obligations. This evaluation has to take into account various characteristics of the borrower (natural or legal person), which should lead to a differentiation of the credit appraisal processes in accordance with the borrowers served by the financial institution (Raaij et al, 2005). Furthermore, it has to be taken into account that for certain finance transactions interest and principal repayments should be financed exclusively from the cash flow of the object to be financed without the possibility for recourse to further assets of the borrower (Seyfried, 2001). In this case, the credit review must address the viability of the underlying business model, which means that the source of the cash flows required to meet interest and principal repayment obligations has to be included in the review. By analyzing a borrower's situation using the 6C principles, the comparatively more difficult situations encountered by a loan officer become capacity and condition because in addition to the understanding and analysis of the information about capacity and condition, it is also necessary to determine whether any future changes will affect the financial situation and the loan repaying ability of an enterprise. Therefore, if an excellent, professional loan officer can accurately and completely collect information in these capacity and condition, the value of the visiting report will be high (Donaghue, 2004; Ebrahim, 2003; 2005; Goddard, 2004).

2.2.3.2 Loss Given Default

The loss given default is affected by the collateralized portion as well as the cost of selling the collateral. This is where the collateral fetches a lower value on sale and the cost of selling e.g advertising is high. Therefore, the calculated value and type of collateral have to be taken into account in designing the credit appraisal processes.

2.2.3.3 Exposure at Default (EAD)

In the vast majority of the cases described here, the exposure at default corresponds to the amount owed to the financial institution (Bessis 2002). Thus, besides the type of claim, the amount of the claim is another important element in the credit appraisal process. Thus, four factors should be taken into account in the segmentation of credit appraisal processes: type of borrower; source of cash flows; value and type of collateral; amount and type of claim.

a) Type of Borrower

In general, type of borrower is used as the highest layer in credit appraisal processes. This is due to the higher priority of reviewing legal and economic conditions within the substantive credit review process (Bessis 2002). The way in which the economic situation is assessed greatly depends on the available data. The following segments can be distinguished: sovereigns, other public authorities (e.g. regional governments, local authorities), financial services providers (including credit institutions such as Banks, Building societies, Mutual funds and Insurance companies) and corporate and retail entities. Usually, at least the segments of corporate and retail customers are differentiated further (e.g. by product category).

b)   Source of Cash Flows

The distinction of so-called specialized lending from other forms of corporate finance is based on the fact that the primary, if not the only source of reducing the exposure is the income from the asset being financed, and not so much the unrelated solvency of the company behind it, which operates on a broader basis (Seyfried, 2001). Therefore, the credit review has to focus on the asset to be financed and the expected cash flow (Raaij et al, 2005). In order to account for this situation, the segmentation of the credit appraisal processes should distinguish between credits to corporations, partnerships, or sole proprietors and specialized lending.

Credit institutions have to distinguish between the following forms of specialized lending in the calculation of regulatory capital: project finance, object finance, commodities finance and

finance of income-producing commercial real estate. This is because each of the above requires different capital outlays and also they have different risks.

c) Value and Type of Collateral

Value and type of collateral have a significant impact on the risk involved in lending. Of particular relevance in this context are those types of collateral which afford the lender a claim on the collateral, and those product constructions under which the lender has legal and economic ownership of the asset to be financed (Raaij et al, 2005). Two forms of finance are particularly relevant in practice: mortgage finance and leasing finance. Mortgage finance and leasing are those forms of finance which often give the lender a substantial degree of control over the asset being financed (Bol, 2003). The strong legal position resulting from such collateral may warrant special treatment of the relevant forms of finance.

2.2.4 Valuation of Collateral

The valuation of the collateral provided by the credit applicant is an essential element in the credit approval process and thus has an impact on the overall assessment of the credit risk involved in a possible exposure (Raaij et al, 2005). The main feature of a collateralized credit is not only the borrower's personal credit standing, which basically determines the probability of default (PD), but the collateral which the lender can realize in case the customer defaults and which thus determines the bank's loss. Via the risk component of loss given default (LGD) and other requirements concerning credit risk mitigation techniques, the value of the collateral is included in calculating the capital requirement under Basel II (Kamp, Pfingsten and Porath, 2005). In order to calculate the risk parameters under Basel II correctly, it is important for the valuation of the collateral to be effected completely independently of the calculation of the borrower's PD in the credit rating process. This should ensure that the probability of default and the loss given default are shown separately in order to meet the Basel requirements of splitting up the review into a customer rating which reflects only the PD on the one hand, and a transaction valuation which also contains a valuation of the collateral to support the credit decision on the other (Raaij et al, 2005).

Collateral is generally divided into personal and physical collateral. In the case of personal collateral, the provider is basically liable with his entire fortune. Examples of personal collateral are the following: surety ship; guarantee and letter of support and collateral promise

In the case of physical collateral, the bank receives a specific security interest in certain assets of the borrower or the collateral provider. Examples of physical collateral are the following: mortgage, pledge of movable assets (on securities, goods, bills of exchange), security assignment and retention of title of an asset e.g. land.

The internal guidelines (collateral catalog) should lay down the type of collateral which each bank generally accepts. Banks should take a close look at that collateral whose value is subject to particularly strong fluctuations and/or whose realization is longwinded or often cumbersome. Liens, for example, usually pose relatively few problems for their holders and provide them with a rather strong creditor position, as the related value of the collateral given is generally easier to assess/value than the personal liability fund of a guarantor (Raaij et al, 2005).

The collateral catalog has to include appropriate instructions on assessing the collateral potentially accepted by the bank as well as determining its collateral value (Raaij et al, 2005). A description of the processes and principles in determining the collateral value for each type of collateral will primarily have to be drawn up in accordance with the business orientation of each bank and the complexity of the approved collateral (Hellwig, 1998). General principles governing the valuation of collateral such as accounting for sustainable value or valuing the collateral based on the liquidation principle should be included in the determination of collateral value; similarly, it should also include general risk deductions (haircuts) as well as deductions for procedural cost (e.g. long time required to sell the collateral).

This allows a more accurate estimate of the potential realization proceeds. What all forms of collateral have in common, though, is that while the application of credit risk mitigation techniques reduces credit risks, it also creates new risks for the bank. In particular, it will be up to each bank's capabilities to identify and measure the risk involved with collateral in order to derive an objective assessment of the total risk inherent to a secured exposure (Bessis, 2002). Among other measures, Basel II takes this into account by stipulating special requirements concerning the way in which collateral arrangements can be enforced and realized (Raaij et al, 2005). Furthermore, the new Capital Accord requires the use of sounds procedures and processes to control and monitor these risks. This should be achieved by establishing collateral management in line with business volume which uses computer-aided processes (collateral database, valuation). What still has to be noted is that, as a rule, the valuation of collateral should be carried out by specialized employees and possibly in separate organizational units which do not belong to the front office, or by external providers (e.g. real estate appraisers) (Bessis 2002).

2.2.5 Credit Disbursement Check

Prior to disbursing the credit, the individual credit exposure should be subjected to a final check. This check should cover at least the following points: compliance with internal guidelines; completeness of the credit application; receipt of confirmation that the credit applicant has complied with the conditions imposed; and signing of the credit and collateral agreements in accordance with the decision-making structure.

Checklists should be used to achieve a risk-mitigating standardization of the process. Suitable samples (segment-specific, if necessary) should be included in the internal guidelines. Various models may be provided to carry out the credit disbursement check. In terms of efficiency, it may be useful to centralize the credit disbursement check for segments with a large number of comparable credit applications. In many cases, however, the credit disbursement check is carried out by the immediate superiors of the employees responsible for the exposure. Risk aspects require the specific design of the process to make sure that the

employee performing the check arrives at a decision independently of the employees responsible for the exposure working in sales, risk analysis, or credit approval processing.

2.3 Monitoring of Loan Performance

The lending function is considered by the banking industry as the most important function for the utilization of funds. Since, banks earn their highest gross profits from loans; the administration of loan portfolios seriously affects the profitability of banks. Indeed, the large number of non-performing loans is the main cause of bank failure. Banks are learning to review their risk portfolios using the criteria laid down by Basel II (Stomper 2004). Greenspan (2001) has indicated that Basel's goal is to induce bankers to improve their risk management capability, including how the institutions price products, reserve for loss, and control their operations (Rehm, 2002). The purpose of Basel II is to reduce a bank's operational risk during the lending process through a better monitoring of the employees in the lending department.

Throughout the contractual relationship between the credit institution and its borrowers, economic developments may bring about changes that have an impact on risk. Banks should monitor their credit exposures continuously to detect such changes in time. In general, this is done by means of so-called periodic and regular checks. Individual exposures are checked at fixed periodic intervals. Many banks integrate these checks in the roll-over of credit exposures which becomes due as periods expire.

In order to detect risks already prior to the periodic check to be carried out due to the expiry of a specified term, many banks use early warning systems (Raaij et al, 2005). Based on early warning indicators which have to be defined for each segment, a differentiated review process is triggered. Among other things, these early warning systems take into account defaults with regard to the contractual relationship between bank and borrower. Of great importance here is the insufficient performance of interest and principal repayment obligations (Bessis, 2002). In order to react to these situations, banks have set up reminder procedures to inform the debtor of the default. Finally, this subsection thus looks at the structure of reminder procedures, which at the same time serves as a link to the next

subsection, which deals with special servicing processes as opposed to standardized servicing processes.

2.3.1 Periodic Reviews and Roll-over

The processes governing the design of periodic reviews and roll-over differ only in a few aspects. The terminological distinction is based on different process triggers (Raaij et al, 2005). While periodic reviews are carried out at intervals to be determined in the internal guidelines, the roll-over is triggered by the expiry of a contractually agreed period. In practice, banks try to carry out upcoming roll-over in the course of the periodic review. If it is not possible to do both at the same time, the internal guidelines may stipulate a period after the most recent review during which a roll-over can be carried out without the need for a new credit review. If this period has expired, the process of periodic review also has to be conducted in case of a roll-over. Below, we present the process of periodic review as the basic process. The only difference between a periodic review and a roll-over is that the latter offers the possibility to agree changes in the contractual stipulations of the credit exposure with the customer (e.g. new conditions) or to terminate the exposure properly (Stomper 2004).

Typically, a periodic reviewed is carried out at one-year intervals starting from the date of credit approval. For companies preparing financial statements, the periodic review should be carried out as shortly after the balance sheet date or the date of submitting the balance sheet as possible. The review of credit exposures should comprise four major activities: assessing the personal and economic situation of borrowers based on current data; adapting the rating, if applicable; checking and evaluating the available collateral; and checking and modifying the conditions.

The review should focus on the development since the most recent approval or review. The decision-making structure should stipulate who is responsible for periodic reviews (Raaij et al, 2005). In most case, it will be that level of authority which would also be in charge of approving new credit applications. In order to make the review as efficient as possible, banks

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typically distinguish between three types of review. The review of standardized credits usually comprises small-volume credit exposures for which the rating process has determined a low probability of default (Diamond, 1984). The internal guidelines have to define the limits of automated review based on exposure volume, credit standing, and type of credit (Bol, 2003). The additional review triggered by risk signals from the early warning system makes up for the manual check. Just like the review of standardized credits, the abbreviated review is a tool used for reasons of efficiency. Here, too, a full and comprehensive review of the credit exposure is not carried out. In general, the banks just update the review-related documents and use a short, standardized questionnaire which has to be completed by the employee from the credit analysis department responsible for the exposure (Raaij et al., 2005). This questionnaire confirms the receipt of the review-related documents and the plausibility check of these documents. Typically, the questionnaires relating to the abbreviated review process contain checklists to check the data received for validity and plausibility. The following list is an example of the content of a questionnaire relating to the abbreviated review process: received balance sheet/statement of receipts & disbursements, and plausibility check; checking debt service capacity; reviewing account movements; checking and assessing significant deviations of financial figures or personal data compared to the previous review of the exposure.

A detailed layout of the questionnaires has to be found in the internal guidelines (Bol, 2003). In any case, there should also be guidelines stipulating a full review in case certain credit assessment changes occur. The decisive factor for the range of application of the abbreviated review process is — as was already the case for the review of standardized credits — the existence of an early warning system.

The early warning system makes up for the comprehensive review which is not triggered by risk signals and is not carried out here. A full review comprises a comprehensive review of the borrower's economic and personal situation in analogy to a new credit application. The division of tasks between sales and credit analysis/processing is typically the same as that for the preparation of the credit proposal for new transactions.

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2.3.2 Risk-triggered Reviews — Early Warning Systems

The events triggering a review of credit exposures described in section above are independent of the occurrence of risk signals arising from the business relationship with the borrower (Raaij, 2005). Risk-triggered reviews, by contrast, are contingent on the actual occurrence or the assumption of negative criteria with regard to the borrower's credit standing between review dates.

2.3.3 Reminder Procedures

In case of default on interest or principal repayment on the part of a borrower, a formal reminder procedure has to be initiated. Reminder procedures are part of the credit monitoring of individual credit exposures (Bol 2003). In order to avoid forgetting to send out reminders, credit institutions should apply standardized and automated reminder procedures. If the IT system registers the occurrence of a default on interest or principal repayment, a collection letter should automatically be sent to the borrower. The length of the waiting period has to be stipulated in the internal guidelines and implemented in the systems. This ensures that collection letters are sent out in time in every case (Raaij et al, 2005).

Furthermore, tight reminder deadlines are useful for risk considerations. This is true in particular as the lender's position may deteriorate compared to other creditors of the borrower during this period. In order to make collection letters as effective as possible, some banks use a discriminating approach which is based on the classification of the borrower identified by an early warning system. Typically, both the wording of the text and the payment deadline are modified accordingly (Raaij et al, 2005).

For business reasons, it is possible to exclude certain customers from the standardized reminder procedures (individualized reminder procedures). The prerequisites for an individualized reminder procedure have to be stipulated in detail in the internal guidelines (Bol, 2003). It is important that no general exception is made for entire groups of customers. Quite on the contrary, the exception should apply only to those customers whose contributions to earnings justify the resulting risk and the associated process cost. Therefore,

the rules should define minimum contribution margins. If the individualized process usually in the form of a personal conversation with the borrower does not yield any results, the standardized reminder procedure should be initiated.

2.4   Diversification of Loan Portfolio

The theoretical literature on the question whether or not to diversify does not offer a unanimous recommendation. Whereas Diamond (1984) comes to the conclusion that a bank maximizes the gains from delegated monitoring by perfect diversification, Hellwig (1998) extends the Diamond (1984) model and shows that banks may be well advised to concentrate at least on some large projects to reduce the monitoring costs. Stomper (2004) shows in an equilibrium model that both types of banks exist in equilibrium: those that are perfectly diversified and those that are specialized. Winton (1999) explicitly models the tradeoff between diversification and specialization. In his model the gains from diversification and those from focusing depend on the risk ness of the bank. According to his model the gains from diversification are most dominant when the bank has a medium risk level. For low risk and for high risk banks it pays to run a specialization strategy.

There is a large body of empirical studies that analyzes benefits from strategic diversification of, mostly non-financial, firms. Whereas Lang and Stulz (1994) and Berger and Ofek (1995) find a discount for diversified firms, Cam pal and Kedia (2002) argue that this diversification-discount is rather due to the underlying characteristics of the diversified firms than to the decision for diversification. Stiroh (2004) and Laderman (2000) empirically analyze the benefits from strategic diversification in the case of banks. According to their studies the gains from diversification in terms of reduced risk are only weak.

Heitfield et al. (2005) analyze portfolios of Syndicated National Credits (SNC). They show that the portfolio risk goes up when the name and industry concentration is increased. However, their results are barely surprising because in their study the loan parameters are exogenous and therefore the banks' screening and monitoring abilities remain unconsidered. The empirical study of Acharya et al. (2004) is based on the theoretical results of Winton (1999). They analyze the portfolio diversification as well as risk and return figures of Italian

banks and conclude that "diversification, per se, is no guarantee of superior performance or greater bank safety and soundness". Elyasiani and Deng (2004) carried out a corresponding study for the banks in the United States. They found that diversified banks have lower returns, but at the same time these banks are less risky, hinting at a typical tradeoff of risk and return. Hayden et al. (2005) performed a study close to Acharya et al. (2004) with data for German banks. They found that diversified banks tend to show weaker results than specialized banks.

2.4.1 Diversification and Return

Standard capital market theory states that there is a tradeoff between risk and return (Markowitz, 1952 and Sharpe, 1964): the more risk one is willing to accept the more return can be expected. However, this tradeoff only holds true for the unsystematic risk, not for the risk that can theoretically be avoided by diversification. Financial theory therefore predicts that well diversified banks yield higher expected returns than banks with little diversification.

However, financial theory based on the notion of perfect capital markets is not really applicable for banks. This argument leads to the theory of financial intermediation, taking into account the role of asymmetric information which incorporates the relevance of *monitoring*. Industry expertise goes along with superior monitoring abilities. Thus, a specialization in loan origination might be superior to diversification as specialized banks might be more efficient in monitoring loans than diversified banks. In the Diamond (1984)-model monitoring costs and monitoring quality are considered to be constant across all banks. Thus, it is not surprising that Diamond (1984) argues that diversification reduces the bank's monitoring costs and that therefore banks should be as diversified as possible. Explicitly taking into account that monitoring costs and quality depend on a bank's sector expertise, Winton (1999) shows, that specialization might be the superior strategy. According to this view we expect a negative relation between the return of the bank and the degree of diversification. There is another argument in favor of focused banks: Banks that aim at expanding their business activities rapidly, for instance by lending to firms of unknown

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industries, run the risk that they attract those firms to whom banks with more experience would not lend *(winner's curse)*.

It is not clear which of the effects mentioned above dominates. In our empirical study, we will estimate the following fixed effects panel regressions to see whether the relation between the bank's return and its degree of diversification (specialization) in the loan portfolio is positive or negative (Hausman (1978).

2.4.1.1 Credit derivatives

Credit derivatives are financial contracts that allow the transfer of credit risks (Raaij et al, 2005). Their applications are numerous. They can be used to hedge individual loans or the portfolio risk as a whole. The hedge can cover the entire risk of default, i.e. the risk that the loan cannot be repaid, or the risk of deterioration of the credit quality. The basic function of a credit derivative distinguishes between the protection buyer, who receives cover in return for a premium, and the protection seller, who assumes the risk from the loan in return for receiving a premium (Raaij et al, 2005). In addition to hedging individual loans or portfolios, there are synthetically generated underlying, e.g. a defined basket of reference bonds or indices that reflect the change in value of corporate bonds. In order to determine the due date of compensation payments, it is necessary to define so-called credit events. Depending on the structure of the derivative, one can distinguish between: insolvency of the borrower; default on interest and/or principal repayments; reaching certain (external) ratings; and exceeding certain spreads for listed corporate bonds.

There is a number of underlying in the market that is hedged by derivatives. Besides bonds issued by large corporations, banks, and sovereigns, individual loans to large corporations can also be hedged. Increasingly, loans to SMEs and credit portfolios of private customers are covered against unfavorable changes in value. The last two underlying, however, often lack an objective assessment, e.g. based on external ratings, which makes it difficult to hedge them, (Roll, 1992). Settlement can be effected physically or financially. In the case of physical delivery (physical settlement), the loan claim or the defined portfolio is transferred to the protection buyer in the credit event; in the case of cash settlement, the predefined

monetary amount is paid to the protection buyer. This sum can be defined as the difference between the value of the claim before and after the credit event or as a fixed amount independent of the loss in value which is actually incurred (Raaij et al, 2005).

The instruments available in the market can be subdivided into the following classes: credit default swaps, credit-linked notes, credit spread derivatives, total return swaps and hybrid instruments. Credit default swaps are based on a default of the borrower. Default does not necessarily mean a total default of the entire loan claim; it can also just refer to delay in payments. In such a case, the protection buyer will typically receive payment in the amount of the loss incurred.

Credit-linked notes usually combine the features of a regular bond and a credit default swap. The combined bond is issued directly by the protection buyer in most cases. In case the credit event occurs, a specified amount is deducted from the repayment of the bond amount. Should the credit event not occur during the term of the bond, the bond is repaid in full. Thus, the compensation payment is the difference between the bond's nominal value and the amount that actually has to be repaid upon maturity.

Credit spread derivatives hedge losses arising from deterioration in the borrower's credit standing. The reference assets are usually listed corporate bonds or indices. The bonds do not have to be part of the protection buyer's portfolio. A hedge of the credit portfolio takes effect when (external) liquid reference assets are selected that reflects the development of the portfolio's value in the event of a rating deterioration. Settlement will be effected if a certain spread limits is exceeded.

Total return swaps cover the entire loss resulting from a change in the underlying market value. Changes in market value can be caused by a default or a rating deterioration of the company, but they can also result from a change in general market liquidity or an increase in the yield level. And lastly, hybrid instruments are combinations of the basic forms just described. There are basically no restrictions on the stipulations credit derivative contracts may contain.

Therefore, the instruments available in the market are numerous and can be adapted to any requirements the protection buyer and seller may have. While the low degree of standardization of these contracts must be regarded as positive in this respect, it does have a negative impact on the liquidity and marketability of these products (Raaij et al, 2005).

Credit derivatives are used not only to hedge the risks associated with existing credit exposures; they are also employed to increase the degree of diversification of portfolios or to generate additional income from the premium or from speculation (Raaij et al, 2005). The advantages of hedging the credit risk by means of derivatives are their ease of use and the fact that credit event, underlying, settlement, maturity, etc. can be arranged individually. This allows the best possible integration of the derivative in the institution's existing or intended risk profile. A successful application of a credit derivative is contingent upon the fact that its effect in terms of its hedge function can be calculated accurately by using portfolio models.

A further advantage is that the derivatives make it possible to separate the credit risk from the claim, which means that in contrast to a sale of the loan the claims need not be transferred, thus not requiring notification of the borrower. The use of derivatives appears preferable as compared to the securitization of loan claims, as the required transaction is less complex and therefore usually less expensive. One disadvantage of credit derivatives is that banks looking to acquire protection incur a new credit risk, i.e. the risk of default of the contracting party. This risk must be taken into account in the calculation of the hedge effect.

2.4.1.2 Securitization
In the case of securitization, selected loans are transferred to a company set up for the purpose of securitization (special purpose vehicle, SPV) (Raaij et al, 2005). The transferred portfolio is divided into tranches with different rating classes and is refinanced by the SPV by issuing securities to investors. The securities are linked directly with the default risk of the tranche they securitize. Often, the securitizing bank has to provide additional collateral or liquidity facilities to make the securities attractive for investors. Furthermore, the bank will usually have to keep the first loss piece on its books; this first loss piece is roughly equivalent

to the portfolio's expected loss. Thus, only the risk of unexpected rating deterioration is passed on to the investors. The bank usually remains responsible for servicing, which includes monitoring the receipt of payments and the collection of claims due (Raaij et al, 2005).

Securitization is particularly suitable for homogeneous portfolios. The evaluation of portfolios is also difficult in the context of securitization; this is especially true for loans to corporate customers which require an individual rating. Retail customer loans and loans to SMEs, however, pose fewer problems in terms of their assessment, as there are standardized credit rating procedures that are based on readily available customer data. Furthermore, the relatively small sizes of the loans results in correlation effects that further reduce the portfolio risk (Raaij et al, 2005).

2.4.1.3 Selling loans

When loans are sold, they are placed directly with one or more investors and are thus also removed from the balance sheet (Raaij et al, 2005). For this purpose, the individual loans to be sold are selected and combined in a portfolio. This portfolio then has to be evaluated, and the investors have to be furnished with detailed information to enable them to assess the risk of the individual loans. The expected default rates of the individual loans are included in the evaluation. The buyer will usually only be prepared to buy the portfolio if the discount on the nominal value of the loans covers at least the losses from the expected defaults, possibly including a haircut, the cost of refinancing, as well as the return on equity required.

Finally, the purchase price is negotiated and the contract of sale is concluded. When the loans are sold, the risk of default and the responsibility for servicing are transferred in full to the buyer. The selling of loans is a long-winded process as it is often difficult to find a buyer. The main reason is the lack of transparency concerning the evaluation of the portfolio. It is not always possible to come to terms concerning the evaluation, as the buyer is usually unable to check all the information required, particularly information about the borrowers credit standing. By contrast, individual loans lend themselves to being sold as their risk is usually easier to assess than the risk of a portfolio. The complexity of the sales transaction,

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however, makes it relatively expensive, which means that it only makes economic sense to sell loans that are sufficiently large (Raaij et al, 2005). Therefore, the sale of portfolio and individual loans should always be assessed bearing in mind the benefit it creates in terms of risk reduction and the cost incurred. In addition, it needs to be considered whether other instruments would not be just as effective but more suitable. Thus, the sale of loans is usually only the last resort.

2.5   Management of Bad Loans

If a borrower's credit standing deteriorates, the bank should interfere in the standardized servicing process and try to control credit risks that are imminent or have already taken effect. This should ensure that adequate measures to secure claims can be taken in time. The objective is not only an improved collateral position of the lender compared to other creditors (caused by the time gained by taking early precautionary measures), but also an effective restructuring of the borrower's debt, thus preventing the total loss of the credit exposure. It does not make economic sense to continue the credit exposure, the workout of the exposure and the resulting sale of the collateral should be initiated (Raaij et al, 2005).

The drivers of lending revenue are operating fees and interest income that are driven by new loans and existing loan volumes. The drivers of lending expenses consist of interest expense, operating expense, loss revenues and unexpected losses in commercial loans. Others question such top-down approaches in both principle and practice (Ebrahim, 2003, 2005; Hill horst, 2003; Naidoo, 2003). They contend that such approaches fail to comprehend, are too distant from, and may not even reach into the grassroots where aid and development are needed most. Instead they call for other forms of intermediation with those at the periphery of aid and development organizations and, in contrast to what is officially called for, seek less top-down and more bottom-up accountability involving grassroots groups.

More intriguing, and of particular interest, has been the development of models that can be used to measure credit migration and default risk at the portfolio level and that can also be used to allocate capital. These can be broadly classified into two types; proprietary (internal) models of credit risk management, and the vendor-marketed models which, in-spite of their

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general-application nature, are almost universally quite elaborate. For clear reasons, not enough information can be obtained about the capabilities of the former category of these models. However, some detail is generally available about the latter category. This category includes models marketed by Algorithmics, CreditMetrics, CreditRisk+, KMV's Portfolio Manager, Loan Pricing Corporation, and McKinsey's Credit Portfolio View (Lewis and Madon, 2004).

CreditMetrics is one of the first portfolio models developed for evaluating problem loan and credit risk. It incorporates a methodology for assessing a portfolio's value at risk (VAR) arising from changes in counterparty credit quality. It established an exposure profile of each counterparty, represented within the portfolio, and combines the volatilities of the individual instruments (taking into account correlations between credit events) to model the volatility of the aggregate portfolio (Ritchie and Richardson, 2000; 2004).

CreditRisk+, marketed by Credit Suisse, is an adaptation of the Credit Suisse Group's methodology for setting loan loss provisions. It is capable of assessing risk capital requirements in an environment where illiquid loans (with little associated data) are held to maturity. Accordingly, its methodology may be more appropriate for firms with retail and institutional loan portfolios, as opposed to those with more bond-oriented compositions (Roberts and Scapens, 1985).

KMV's Portfolio Manager measures the risk and returns characteristics of a portfolio and allows the user to explore the incremental effect of a changing exposure to an individual asset. It also provides for an examination of the effect of a large-scale change to the portfolio mix and, an assessment of potential changes in tactics and strategy. Further, it can be a valuable tool for determining aggregate capital requirements and the allocation of economic capital (Robinson, 2003). Finally, McKinsey's Credit Portfolio View takes into account specific country and industry influences in order to arrive at better estimates of default and credit migration probabilities.

It incorporates the evolution of the global macro-economy into country- and industry-specific speculative default rates. It then maps these rates into cumulative migration probabilities by

country and by industry. As this description of some of these models suggests, the increasing complexity of the world of problem loan and credit risk has given rise to an equally complex set of models designed to measure and manage this risk (Uddin and Hopper, 2001).

2.5.1 Design of the Workout Process

An efficient execution of the workout process is contingent upon the existence of clear guidelines on handling different types of claims and collateral. Therefore, the internal guidelines should contain relevant process rules. As many examples show, deviations from the workout strategy defined in the internal guidelines should not be permissible in the course of workout. Therefore, the leeway for employees in charge of workout should be defined narrowly. Sometimes credit exposures below a threshold volume to be defined in the internal guidelines are handed over to collection agencies. The internal guidelines also have to clarify whether this involves a sale of the claim, or whether the collection agency merely performs the service on behalf of the bank. The same is true for the mode of workout. In practice, one can find both lump-sum fees and fees defined as a certain percentage of the collection proceeds. Those exposures that are not handed over to external collection agencies should be assigned to an organizational unit specializing in the realization of collateral.

This unit checks if selling the collateral makes economic sense and what type of realization presents the best option if various approaches are possible. If this is feasible, the necessary steps to realize the collateral in legal or out-of-court proceedings have to be taken. In many cases, the collateral is not realized immediately based on the argument that higher proceeds are to be expected or that the sale will make economic sense only at a later time. The time of realization does indeed have a significant impact on the realization proceeds. For real estate in particular, postponing the disposal may be sensible due to fluctuations in the market. However, the administration of this _deferred_ collateral requires a major portfolio management effort; therefore, the internal guidelines should contain mandatory rules limiting the use of this option.

2.5.2 Risk Provisions

Finally, the processes concerning the set-up of specific loan loss provisions as well as recording the write-off of claims are discussed in sections 2.5.2.1 and 2.5.2.2 below respectively. Loan loss provisions are an important part of bank activities aimed at covering the bank in case of customers defaulting.

2.5.2.1 Setting up Specific Loan Loss Provisions

The fundamental regulations governing the determination of specific loan loss provisions are stipulated in the commercial and the tax code (Raaij et al, 2005). For reasons of completeness and easy access, these norms should be contained in the internal guidelines. The set-up of specific loan loss provisions requires a forecast including all factors that can be expected to affect the extent of the provisions. Furthermore, the determination of the reduction in value requires the valuation of the collateral associated with the exposure. In accordance with the lending principles stipulated in the internal guidelines, the current loan-to-value ratio forms the initial value used to determine the collateral value. If there are any doubts about the actual value, the loan-to-value ratio has to be reviewed and modified if necessary. The internal guidelines should lay down the possibilities to determine loan-to-value ratios in the set-up of specific loan loss provisions. This lending value may be reduced from case to case to account for the marketability of the asset as well as an objective assessment of the sales prospects at the balance sheet date. The employee in charge has to justify the reduction in value in the credit files. Furthermore, it has to be ensured that the realization costs are taken into account when determining the collateral value relevant for the specific loan loss provision.

The set-up of specific loan loss provisions is subject to special documentation requirements. This should help avoid inquiries and duplicate efforts with regard to an external review. In general, the request for setting up a specific loan loss provision is filed by the employee in charge of the exposure in credit approval processing in coordination with the account manager responsible. Provisions for exposures that have already been transferred to restructuring or workout are set up by the employees managing the exposures in those departments.

2.5.2.2 Write-offs

Write-offs of claims refer to those amounts by which claims are reduced as a result of becoming uncollectible (Raaij et al, 2005). This includes direct write-offs as well as the utilization of specific loan loss provisions. The exposure should be written off if; firstly, the collateral of the related exposure has been realized in full or is of no value. Secondly, the claims were waived in part or in full, and finally no more payments on the remaining claim are to be expected.

Stipulations governing the decision-making authority have to be laid down in the internal guidelines. The request for a write-off of claims should include the presentation of the reasons for the default. Furthermore, it should contain a statement as to whether the claim should be pursued any further. The claims should be recorded in a central list of defaulted claims which is uniform for the bank as a whole. Depreciation and provisions should be recorded continuously, also throughout the year.

2.6 Chapter Summary

In order to assess the credit risk, it is necessary to take a close look at the borrowers' economic and legal situation as well as the relevant environment (Seyfried, 2001). The quality of credit appraisal processes depends on two factors, i.e. a transparent and comprehensive presentation of the risks and an adequate assessment the risks, (Raaij et al, 2005). Johnson and Johnson (1985), Hempel and Simonson (1999) and Koch and Macdonald (2000) all pointed out that the activities in the processing of loans follow eight steps. These steps are application, credit analysis, decision, document preparation, closing, recording, servicing and administration, and collection. The quality of the credit appraisal process from a risk perspective is determined by the best possible identification and evaluation of the credit risk resulting from a possible exposure (Raaij et al, 2005). The credit risk can be distributed among four risk components: probability of default (PD); loss given default (LGD); exposure at default (EAD) and maturity (M).

In order to detect risks already prior to the periodic check to be carried out due to the expiry of a specified term, many banks use early warning systems (Raaij et al, 2005). Among other things, these early warning systems take into account defaults with regard to the contractual relationship between bank and borrower. Of great importance is the insufficient performance of interest and principal repayment obligations (Bessis, 2002). These monitoring measure include periodic reviews and roll-overs (Raaij, et al., 2005), early warning systems and reminder procedures (Raaij, 2005 and Bol, 2003).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology. Section 3.2 discusses research design. Section 3.3 discusses the population of the study. Section 3.4 presents the sampling of respondents. Section 3.5 discusses the data collection methods used in this study and section 3.6 describes data analysis and presentation.

3.2 Research Design

The study covered microfinance institutions in Kenya and not any other finance agency or Bank in Kenya. The fieldwork for this research was based on a descriptive survey which aimed at establishing the techniques of credit risk management as used by the microfinance institutions in Kenya. This called for a combination of quantitative and qualitative methods of doing research, which have been practiced, as recommended by in management studies in the developing countries. According to Cooper (1996), a descriptive study was concerned with finding out who, what, where and how of a phenomenon. Triangulation was a useful approach to establish the credibility of qualitative research noting that, 'mixing a qualitative method and a quantitative method to give the researcher the potential to cover each method's weaknesses with strength from the other method. The design has in the past been successfully used by Njoroge (2003), Mazrui (2003).

3.3 Population

The population of interest in this study was all the micro finance institutions operating in Kenya. There are 51 Micro finance Institutions in Kenya according to the Central Bank of Kenya (2006) directory (See Appendix III).

3.4 Sampling

A random sample of 30 Micro-Finance Institutions was taken from the population. This constitutes 58% of the entire population. This sample fairly represents the whole population and was considered large enough to provide a general view of the entire population and serve as a good basis for valid and reliable conclusions. Purposive sampling was then used to

select one credit officer and one loan officer from each of the sampled institutions. This gave a total of 60 respondents who were sampled to participate in the study.

3.5 Data Collection Method

This study used primary data, which was collected by way of structured and semi-structured questionnaires with both open-ended and closed-ended questions. The focus of primary data was on the techniques used by Micro-Finance Institutions in the management of credit risk. The questionnaires were administered by multiple-approaches that included drop and pick later basis and use of e-mail to contact the respondents. To increase the response rate, a follow up was done by use of telephone calls.

3.6 Data Analysis and Presentation

The data was presented through summary statistics (percentages, means standard deviation) to measure the interrelationships between variables. Graphs were used to display the information to improve the presentation of the analyzed results for ease of interpretation.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results of data analysis, findings and discussion. Section 4.2 gives the data summary. Section 4.3, discusses the techniques of credit risk management and section 4.4 provides the challenges facing micro finance institutions in the management of credit risk.

4.2 Data Summary

A total of 60 credit and loans officers from a sample of 30 Micro Finance Institutions were sampled. Every officer from the sampled institution was given a questionnaire out of which 34 responded by completing and returning the questionnaire. This gave a response rate of 57%. This can be regarded as a fair response rate for a study of this nature considering the confidentiality attached to this information.

The collected data was edited and coded. Data analysis was done using frequencies, percentages, mean scores and standard deviations. The mean or average is commonly used in reporting data. It is obtained by summing all the answers or scores and dividing by the total number. Percentage expresses information as a proportion of a whole. It is used in showing frequency distribution of grouped data. Frequency distribution is a classification of answers or values into categories arranged in order of size or magnitude. Standard deviation is used to measure the degree to which individual values vary from mean. It is the average distance the average scores lies from the mean. A high standard deviation means that the responses vary greatly from the mean. Low standard deviation indicates that the responses are similar to the mean. When all the answers are identical, the standard deviation is zero. Presentation of data will take the form of tables and graphs.

The respondents were first asked to provide information on: name of the institution, designation, ownership of the institution, number of years they have been in operation, the number of branches, customer base and the market segment served. (Appendix 2) Below is a summary of results on ownership structure of MFIs sampled.

Table 4.1: Ownership of Micro Finance Institutions

	Frequency	Percent
Predominantly local	16	47
Predominantly foreign	10	29
Both local and foreign	8	24
Total	**34**	**100**

Figure 4.1: Ownership of Micro Finance Institutions
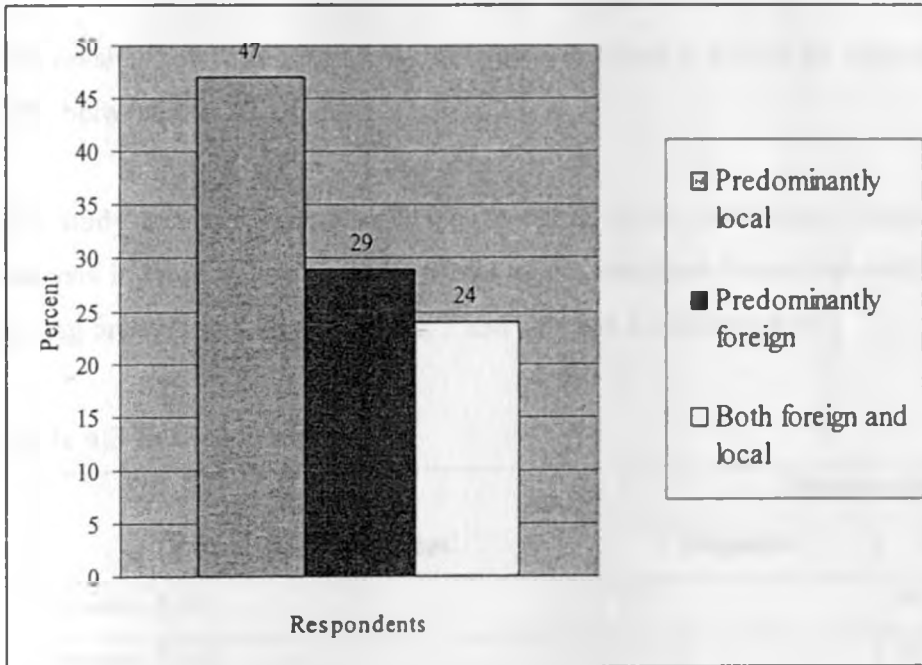
Source: Primary data

The results show that 47% of MFIs are locally owned while foreigners and locals jointly own 53%. The implication is that locals understand the domestic environment better and hence can extend loans without fear.

4.2.2 Years of operation, Branch network, Customer base and Market Segment served
The numbers of years in operation influence an institution's experience in lending and management of credit risk. The branch network enhances outreach so that a variety of customers are reached and customer base indicates the growth of the institutions.
Table 4.1 below shows the number of years the sampled MFIs have been in operation in Kenya

Table 4.2: Years of Operation

Years of Operation	Distribution	
	Response	Percentage
21-30 Years	16	47
Below 10 years	8	23
10-20 Years	4	12
31-40 Years	3	9
41 and above years	3	9
Total	**34**	**100**

Source: Primary data

The results show that 47% of the MFIs have operated in Kenya for between 21-30 years and 12% between 10-20 years.

The study sought to establish branch network of the institutions. From the results of the analysis in table 4.2 below, 49% of the institutions have branch network of 5-10 with 21% having branch network of less than 5 and between 11-20 branches.

Table 4:3 Branch Network

Number of Branches	Distribution	
	Response	Percentage
Between 5-10	17	49
Between 11-20	7	21
Less than 5	7	21
Above 20	3	9
Total	**34**	**100**

Source: Authors own computation

Respondents were asked to indicate the customer base that their institutions serve. The analysis revealed that 88% of the institutions had customer base of less than 10,000 customers. Table 4.3 below presents the findings of the data analysis.

Table 4.4 Customer Base

Customer Base	Distribution	
	Response	Percentage
Less than 10,000	30	88
Between 10,001 and 50,000	4	12
Between 50,001 and 100,000	0	0
More than 100,001	0	0
Total	**34**	**100**

Source: Primary data

The study sought to establish the market segment, which the institutions served. The results of the data analysis in figure 4.2 below show that 85% of the institutions served both business and individuals.

Table 4.5: Market Segment Served

	Frequency	Percent
Both business and personal	29	85
Business	3	9
Personal	2	6
Total	34	100

Figure 4.2: Market Segment Served
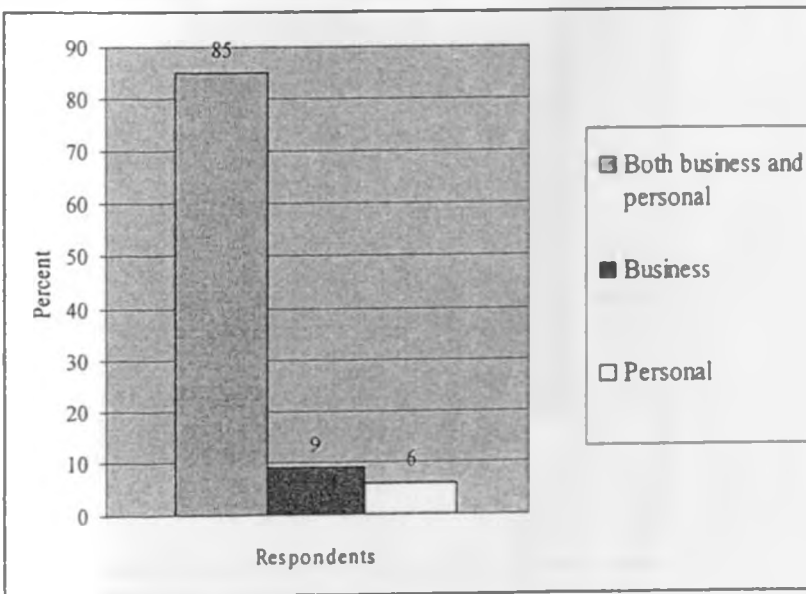
Source: Authors own computation

4.3 Techniques of Credit Risk Management

This section presents the survey results on techniques used to manage credit risk in Micro finance institutions in Kenya.

4.3.1 The Use of the 6C Technique of Credit Risk management

The study sought to establish whether respondent organizations use the IC to analyze the borrower's situation. The results of the analysis revealed that 74% of the institutions sampled use the 6C technique of credit risk management i.e. character, capacity, condition, collateral, control and capital as a basic tool when lending to analyze the borrower situation. This means that the microfinance institutions are very conscious when lending and they follow due process to analyze borrower situation. The findings are shown in the figure 4.3 below.

Table 4.6: Organization use 6Cs

	Frequency	Percent
Yes	25	74
No	9	26
Total	34	100

Figure 4.3: Organization use 6Cs
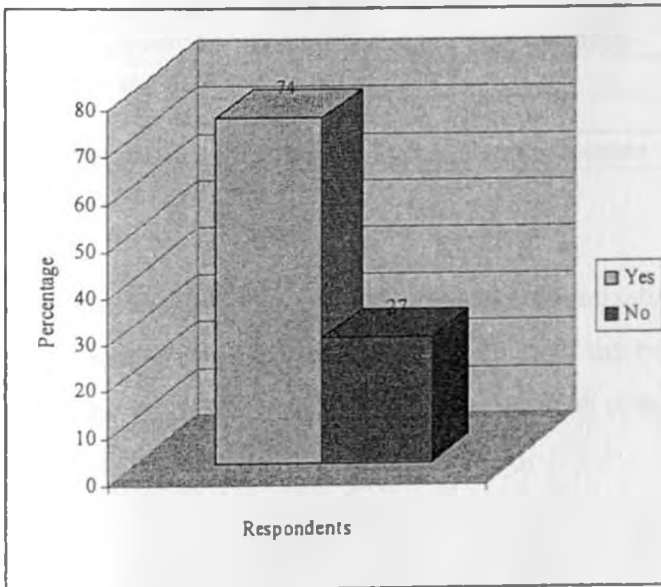
Source: Authors own computation

4.3.2 Factors Necessitating Credit Risk Management

Respondents were asked to state the extent to which the institutions have been using the factors listed in table 4.4 below as key in identifying business needs of credit risk management and focusing benchmarking strategies.

Table 4.7: Factors Necessitating Credit Risk Management

	No extent	Small extent	Some extent	Large extent	Very large extent	Total
Understanding organizations exposure to customers	2	5	8	16	3	34
Proactively forecasting how many loans might go bad	2	5	6	17	3	33
Minimizing losses when loans go bad	2	4	7	15	5	33
To effectively balance high and low risk business	1	3	8	14	6	32
To help not turn good business away	3	9	14	4	3	33
To optimize business volume	4	7	13	4	3	31
To operate through efficient systems and processes	7	15	5	4	2	33

Factors	Descriptive	
	Mean	Std. Deviation
Understanding organizations exposure to customers	5.123	0.189
Proactively forecasting how many loans might go bad	5.100	0.023
Minimizing losses when loans go bad	5.100	0.136
To effectively balance high and low risk business	5.100	0.029
To help not turn good business away	4.156	0.100
To optimize business volume	3.200	0.693
To operate through efficient systems and processes	3.00	0.895

Source: Primary data

The results show that understanding the organization's exposure to customers is a critical factor used to analyze the credit worthiness of the borrower. This factor had a mean of 5.123 and standard deviation of 0.189 as compared to efficient systems and processes, which had a mean of 3 and standard deviation of 0.895.

4.3.3 Credit Risk Management Practices

The study sought to establish the credit risk management practices that are put in place by the institutions, to ensure efficient credit risk management. The study established that the institutions take follow up measures to ensure that the conditions set in the loan agreement are being followed to avoid loan loses. Asked whether their institutions carry out loan reviews, 73% indicated that indeed the institutions take loan review analysis as the most crucial aspect of risk management by doing proper documentation and analysis before giving any loan or advancing an additional loan (see figure 4.4 below). In a situation where the borrower's financial situation and structure have been altered and the original promised value of collateral differ, micro finance institutions resolve to taking litigations which have cost them a lot of money and time since the system of law is slow in Kenya.

Table 4.8: Institutions use loan review analysis

	Frequency	Percent
Yes	25	73
No	9	27
Total	34	100

Figure 4.4: Institutions use loan review analysis
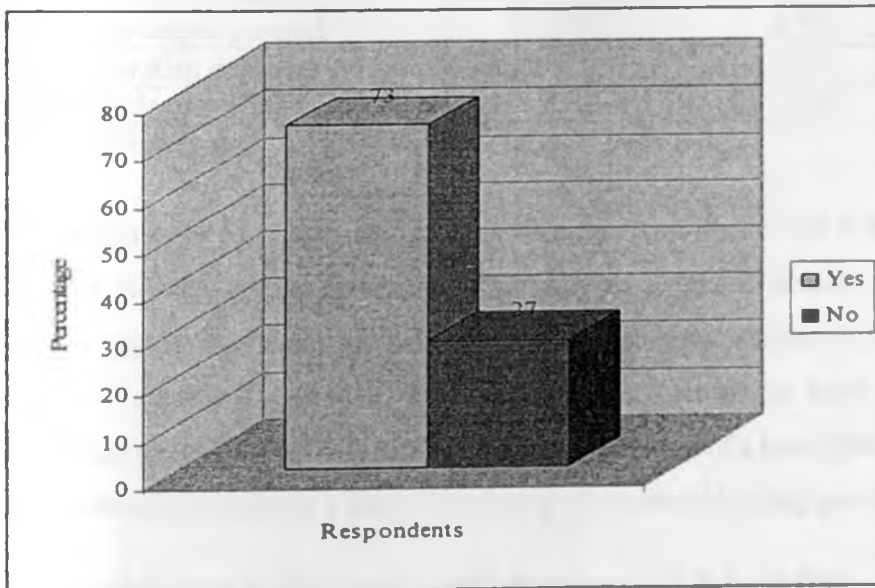
Source: Authors own computation

4.3.4 Measures Used to Assess Credit Risk Management Efficiency

Respondents were asked to indicate the extent to which their institutions used measures to assess efficiency and related lending functions in the lending process. This because efficiency measures have an impact on the credit management process i.e. if there is efficiency in the lending process; there is also a reciprocated efficiency in credit risk management. Table 4.5 below shows measures used to asses credit risk management efficiency.

Table 4:9: Measures Used to Assess Credit Risk Management Efficiency

	No extent	Small extent	Some extent	Large extent	Very large extent	Total
Returns on equity	3	6	15	7	3	34
Returns on assets	2	7	16	6	3	34
Returns on investments	1	7	17	5	4	34
Monetary output per staff	5	8	9	7	5	34
Total operating expenses per unit of output	7	10	9	5	3	34
Data envelopment analysis (DEA)	6	13	8	5	2	34

Measures	Descriptive	
	Mean	Std. Deviation
Returns on equity	5.123	0.199
Returns on assets	4.980	0.073
Returns on investments	4.590	0.146
Monetary output per staff	4.250	0.029
Total operating expenses per unit of output	4.156	0.100
Data envelopment analysis (DEA)	3.200	0.693

Source: Primary data

The results show that returns on equity with a mean score of 5.123 and standard deviation of 0.199 is the most critical measure of efficiency as compared to total operating expenses per unit of output with a mean score of 4.156 and a standard deviation of 0.100. This implies that if money is lent and not repaid, the return on equity will be the most affected which will in turn affect the growth of the institution. The productivity of a loan officer is analyzed through the quarterly loan sales as a key to improving commercial lending performance.

4.3.5 Models Used in Efficient Credit Migration and Default Risk

Respondents were asked to indicate the extent to which their institutions use efficient lending performance factors. The results of data analysis are shown in table 4.6 below.

Table 4.10: Models used in efficient credit migration and default risk

Models used	Distribution	
	Response	Percentage
Algorithmic	0	0
Credit Metrics	20	59
Credit Risk+	4	12
KMV's Portfolio manager	10	29
Loan Pricing Corporate	0	0
McKinsey's Credit Portfolio View	0	0

Source: Primary data

It was found that identifying counter party default risk is the single most important purpose served by the credit risk models. 59% of the sampled MFIs use Credit Metrics and 12% use CreditRisk+ to deal with counter party migration risk. Surprisingly, only a minority of MFIs utilize either a proprietary or vendor-marketed model for the management of their credit risk.

4.3.6 Benefits from Efficient Credit Risk Management

The respondents were asked to indicate whether their institutions have benefited from credit risk management practices. The results of the data analysis in figure 4.5 below show that 97% of the MFIs benefited from the use of the credit risk management practices though they have been meeting challenges as discussed in the next sub section.

Table 4.11: Benefits from efficient credit risk management

	Frequency	Percent
Yes	33	97
No	1	3
Total	34	100

Fig. 4.5: Benefits from efficient credit risk management

Source: Authors own computation

47
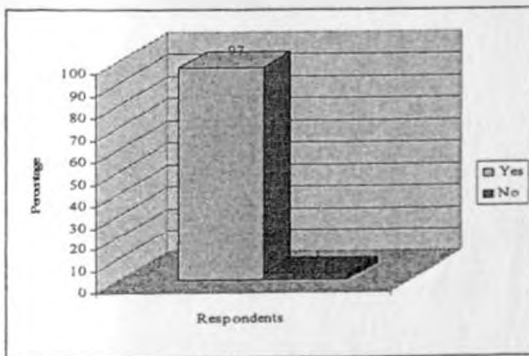
4.4 The Challenges Facing the Microfinance Institutions in the Management of Credit Risk

The study sought to establish the challenges that the Micro Finance Institutions face. The findings of the analysis are presented in table 4.7 below.

Table 4.12: Challenges Facing the Microfinance Institutions in Credit Risk Management

	No extent	Small extent	Some extent	Large extent	Very large extent	Total
Strict rules from the Central Bank	3	9	12	7	3	34
No proper government policy on MFI's	16	12	4	2	0	34
Difficulty in loan recovery	7	8	10	5	4	34
Stiff competition from other financial institutions	2	8	12	7	5	34
Unscrupulous MFI's spoiling the reputation of the industry	4	6	11	7	6	34

Measures	Descriptive	
	Mean	Std. Deviation
Strict rules from the Central Bank	4.980	0.073
No proper government policy on MFI's	4.590	0.146
Difficulty in loan recovery	4.250	0.029
Stiff competition from other financial institutions	4.156	0.100
Unscrupulous MFI's spoiling the reputation of the industry	3.200	0.693

Source: Primary data

The results show that the serious challenge facing the micro finance institutions operating in Kenya in the management of credit risk is the strict rules from the Central Bank with a mean of 4.980 and standard deviation of 0.073. The least challenge is the unscrupulous MFIs spoiling the reputation of the industry with a mean of 3.2 and standard deviation of 0.693.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter comprises of the summary of the research findings, conclusions, limitations of the study and suggestions for future research. Section 5.2 describes the summary of the research findings. Section 5.3 concludes the chapter. In section 5.4 we make recommendations. Section 5.5 and 5.6, we discuss the limitations of the study and suggestions for future research.

5.2 Summary

The overall purpose of the study was to do a survey of techniques of credit risk management in micro-finance institutions in Kenya. The first specific objective was to identify the techniques used by microfinance institutions in the management of credit risk in Kenya. The second specific objective of the study was to examine the main challenges facing the microfinance institutions operating in Kenya in the management of credit risk. Out of the 60 credit and loans officers sampled from the sampled 30 Microfinance institutions, 34 responded. This gave a response rate of 57%.

5.3 Conclusions

Based on the analysis of the data collected from the survey, the following conclusions are drawn. First, most micro finance institutions (74%) use 6C techniques of credit risk management, i.e. character, capacity, conditions, collateral, control and capital as a basic tool when lending. As mentioned by Rose, (1991) the 6Cs are important reference indexes for financial institutions when making credit analysis to decide worthiness of a borrower. This therefore implies that the microfinance institutions observe credit risk analysis requirements.

Secondly, the study also revealed that understanding the organizations exposure to the customers is treated as critical by the microfinance institutions (mean score 5.123). Raaij et al, (2005) points that quality credit appraisal process from a risk perspective is determined by the best possible identification and evaluation of the credit risk resulting from a possible

organization's exposure. This implies that the microfinance institutions are able to detect any looming credit risk.

Thirdly, to avoid loan losses, the microfinance institutions use follow ups. Bol (2003) argued that reminder procedures, which could be in the form of follow-ups, are part of the credit appraisal process. The study established that MFIs take loan review analysis as an aspect of risk management by doing proper documentation and analysis. The institutions also resolve to take litigations in situations where the borrower's financial situation and structure have been altered and the original promised value of collateral differ. The study therefore concludes that the microfinance institutions are well prepared to avoid any loan losses by employing credit management practices.

Fourthly, to assess efficiency in lending procedures, the study established that the institutions use returns on equity (mean score 5.123). The study also established that the institutions used factors such as returns on assets (mean score 4.156).

Fifthly, the study established that majority of the institutions (59%) used Credit Metrics to measure the credit migration and default risk. Ritchie and Richardson, (2000; 2004), argued that Credit Metrics model was developed to evaluate problem loan and credit risk and is used in assessing a portfolio's value at risk (VAR) arising from changes in contemporary credit quality. The study therefore concludes that the microfinance institutions use the recommended models to analyze the credit risk of the loans.

Last but not least, the study established that the microfinance institutions are faced with the challenge of strict operational regulations from the Central Bank of Kenya (mean score 4.98). The government has also not put any policy in place that concerns the operations of the MFIs. Despite the fact that the microfinance institutions have put in place strict measure to credit risk management, loan recovery is still a challenge to majority of the institutions (mean score 4.25). This explains the reason why most financial institutions are either not growing or are about to close down. There is also stiff competition from other financial institutions like the banks insurance and mortgage institutions.

The study recommends that the microfinance institutions diversify the loan portfolio in order to minimize credit risk. The study further recommends that microfinance institutions should put in place more measures to ensure that the performance of the loans are monitored to avoid bad loans. Lastly, the government should put in place policies that are geared towards strengthening of the microfinance institutions.

5.4 Limitations of the study

Some respondents did not provide all the information thus depriving the study of some required data. Secondly, this study concentrated on techniques used to manage credit risk arising from loans. However, there are other risks that a Micro Finance Institution may encounter while in operation for example liquidity and asset management. These were excluded in this study because of time and financial constraints.

5.5. Recommendations for further research

This study concentrated on credit risk management and biased on loans. I would recommend a study on efficiency based on revenue, profitability, liquidity and asset management in Micro Finance Institutions in Kenya.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

August 2007

Dear Respondent,

REF: REQUEST FOR RESEARCH DATA

I am a Master of Business Administration (M.B.A.) student at the University of Nairobi. I am required to submit as part of my course work assessment a research project report on **"Techniques of Credit Risk Management in Micro-Finance Institutions in Kenya"**.

To achieve this, your organization is one of those selected for the study. I kindly request you to fill the attached questionnaire to generate data required for this study. This information will be used purely for academic purpose and your name will not be mentioned in the report. Findings of the study, shall upon request, be availed to you.

Your assistance and cooperation will be highly appreciated.

Thank you in advance.

Simiyu Robert Silikhe.   **Sifunjo Kisaka**
M.B.A. Student- Researcher   **Supervisor**
Nairobi   **University of Nairobi**

APPENDIX 2: QUESTIONNAIRE

SECTION A: GENERAL INFORMATION

1. Name of Institution _____

2. Name of interviewee _____

3. Please state your position in the Organization_____

4. Please indicate the ownership of the institution using the categories below (please tick one)

a)   Predominantly local (51% or more)   [ ]

b)   Predominantly foreign (51% or more)   [ ]

c)   Balanced between foreign and local (50/50)   [ ]

5. Using the categories below please indicate how long your institution has been in operation.

Below 10 years   [ ]

10-20 Years   [ ]

21-30 Years   [ ]

31-40 Years   [ ]

41 and above years   [ ]

6. Using the categories below, please indicate the number of branches you have in Kenya

Less than 5   [ ]

Between 5-10   [ ]

Between 11-20   [ ]

Above 20   [ ]

7. Please indicate your customer base by ticking any of the categories below.

Less than 10,000   [ ]

Between 10,001 and 50,000   [ ]

Between 50,001 and 100,000 [ ]

More than 100,001   [ ]

8. Which market segment does your bank serve? Please tick as is appropriate.

Business   [ ]

Personal   [ ]

Both Business and Personal   [ ]

SECTION B: TECHNIQUES OF CREDIT RISK MANAGEMENT USED

9. Does your organization use the 6C i.e. character, capacity, capital, collateral, conditions & control principle of basic lending to analyze the borrower situation?   Yes   [ ]

        No   [ ]

If no, what criteria do you use? _____

_____

_____

10. The following statements listed below are key to identifying business needs of credit risk management and focusing benchmarking strategies that should be adopted by any financial institution. State the extent to which your institution has been using these factors using a scale of 1-5 below, in which;

5 = to a very large extent.   4 = to a large extent.   3 = To some Extent.

2 = to a small extent.   1 = to no extent.

1   2   3   4   5

		1	2	3	4	5
a)	To effectively balance high and low risk business	[ ]	[ ]	[ ]	[ ]	[ ]
b)	To help not turn good business away	[ ]	[ ]	[ ]	[ ]	[ ]
c)	To optimize business volume	[ ]	[ ]	[ ]	[ ]	[ ]
d)	To operate through efficient systems and processes	[ ]	[ ]	[ ]	[ ]	[ ]
e)	Understanding organizations exposure to customers	[ ]	[ ]	[ ]	[ ]	[ ]
f)	Proactive forecasting how many loans might go bad	[ ]	[ ]	[ ]	[ ]	[ ]
g)	Minimizing losses when loans go bad	[ ]	[ ]	[ ]	[ ]	[ ]

11. How does your organization minimize losses when loans go bad?

_____

_____

12. Loan reviews are most crucial aspects of risk management; does your organization perform this important task? Yes [ ] No [ ]

If yes, how do you go about this? _____

_____

_____

_____

13. In a situation where you find that the borrower's financial situation and structure have altered and the original promised value of collateral differ, what steps does the organization take?

_____

_____

_____

_____

14. Please indicate to what extent your institution has used the following measures to assess its efficiency and related functions in its lending process using a scale of 1-5 below, in which;

5 = to a very large extent.   4 = to a large extent. 3 = To some Extent.

2 = to a small extent.   1 = to no extent.

1   2   3   4   5

	1	2	3	4	5
a) Returns on equity	[ ]	[ ]	[ ]	[ ]	[ ]
b) Returns on assets	[ ]	[ ]	[ ]	[ ]	[ ]
c) Returns on investments	[ ]	[ ]	[ ]	[ ]	[ ]
d) Monetary output per staff	[ ]	[ ]	[ ]	[ ]	[ ]
e) Total operating expenses per unit of output	[ ]	[ ]	[ ]	[ ]	[ ]
f) Data envelopment analysis (DEA)	[ ]	[ ]	[ ]	[ ]	[ ]

15. Financial institutions have today adopted more efficient lending performance by measuring the productivity of loan officers. To what extent has your institution been using this factor?

To a very large extent.   [ ]   To a large extent.   [ ]
To some Extent.   [ ]   To a small extent.   [ ]
To no extent.   [ ]

16. Models have been believed to be most efficient in measuring credit migration and default risk at the portfolio level and allocate capital. Which among these models does your organization use?

Algorithmics   [ ]   CreditMetrics   [ ]
KVM's Portfolio Manager   [ ]   Loan Pricing Corporation   [ ]
McKinsey's Portfolio View [ ]   CredRisk+   [ ]
Others (specify) _____

17. Has your organization benefited from risk management?
        Yes [ ]   No [ ]
If yes, how has it benefited? _____

18. Indicate to what extent you agree with the following statements concerning the challenges facing your institution operations in Kenya using a scale of 1-4 below, in which: 1
= Strongly Agree   2 = Agree   3 = Disagree   4 = Strongly Disagree

	1	2	3	4
Stiff competition from other financial institutions	[ ]	[ ]	[ ]	[ ]
No proper government policy on MFI's	[ ]	[ ]	[ ]	[ ]
Difficulty in loan recovery	[ ]	[ ]	[ ]	[ ]
Strict rules from the Central Bank	[ ]	[ ]	[ ]	[ ]
Unscrupulous MFI's spoiling the reputation of the industry	[ ]	[ ]	[ ]	[ ]
Others	[ ]	[ ]	[ ]	[ ]

19. In your own opinion what are the other challenges that your institution is facing; and how can these challenges be addressed?

_____

_____

_____

APPENDIX 3: LIST OF MICRO-FINANCE INSTITUTIONS (CBK 2006)

1.	AAR Credit Service	2.	Millennia Multipurpose Credit Society
3.	Action Aid	4.	OIKO Credit
5.	ADRA Kenya	6.	Pride Africa
7.	AgaKhan Foundation Micro Credit Programme	8.	Private Sector Development Unit
9.	Archdioceses of Nairobi	10.	SISDO
11.	AREP	12.	Skills Across Kenya
13.	BIMAS	14.	Small and Micro-Enterprise Programme (SMEP)
15.	Care International	16.	Small Enterprise Credit Association
17.	Christian Health Association of Kenya	18.	Smallholder Irrigation Scheme Development Organization
19.	Co-operative Bank of Kenya	20.	St. John's Community Centre
21.	Cross bridge Credit Ltd	22.	Sun link Micro Finance Partners
23.	Daraja Trust	24.	Undugu Society of Kenya
25.	Ecumenical Church Loan Fund (ECLOF)	26.	United Disabled Persons of Kenya (UDPK)
27.	Elite Microfinance	28.	Vintage Management Consultants
29.	Equity Building Society	30.	WEEC (Women Economic Empowerment Consort)
31.	Family Finance	32.	WEDCO
33.	Faulu Kenya	34.	Widows and Orphans Welfare
35.	Ghetto Child Programme	36.	Window Development Fund
37.	Hope Africa	38.	World Vision
39.	Jamii Bora	40.	Yehu Enterprise Support Services
41.	Jaru Micro Credit Africa Ltd		
42.	Jitegemee Trust		
43.	KADET (Kenya Agency to Development of Enterprise and Technology)		
44.	Kenya Commercial Bank-Special Loan Unit		
45.	Kenya Gatsby Trust		
46.	Kenya Post Office Savings Bank		
47.	Kenya Small Traders and Enterprise Society		
48.	Kenya Women Finance Trust		
49.	K-Rep Bank Ltd.		
50.	K-Rep Development Agency		
51.	Micro Kenya Ltd		
52.	Jitegemee Trust		

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