ASSESSING CREDIT RISK MANAGEMENT PRACTICE IN PRAVATE BANKING IN ERBIL-IRAQ
(AN EMPRICAL STUDY IN PRIVATE BANKING IN ERBIL-IRAQ)

A Research Proposal
Presented

by

XXX

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ABSTRACT

ASSESSING CREDIT RISK MANAGEMENT PRACTICE IN PRAVATE BANKING IN ERBIL-IRAQ

The study will investigate credit risk management practice by private banks in Erbil-Iraq. The study will compare credit risk management practice with principles of credit risk management which issued by Basel Commission on banking supervision (2000) and to know how if principles will practice in effective way. The study will collect data through distributing 160 questionnaires to high level bank staffs whom deal with credit risk management. Target population comprise of credit staffs, credit risk managers, CEO and board members. The study will use Statistical Package for the Social Sciences (SSPS) software program version 24 to analyze collected data. The result of analyzed data will be descriptive statistics which include percentages, frequencies such mean, standard deviation and variance. The study will examine regression analyzes, ANOVA analyses and Pearson correlations between variables.

The study will find answer for research questions and test hypothesis. Finally, the study will conclude results. Private banks in Erbil-Iraq can get benefits from findings and suggestions to improve their credit risk management. The study can recommend for further studies and determine few limitations of the study.

Key words: Basel Committee for Banking Supervision, credit risk management, principles of credit risk management, credit risk strategy, written loan policy, loan portfolio, loan review, credit risk analyzes, credit approving committee, risk rating, risk pricing and loan loss reserve.

Directed by: XXXXX

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CHAPTER 1

1.1 Introduction

Banks face several risks. Credit risk is recognized as a major risk which leads to bank failure if not well managed. Basel Committee on Banking Supervision (2000) issued many principles as instructions to banks in order to avoid and prevent bank failure, protect depositors and provide financial stability.

Risk Management Group of the Basel Committee on Banking Supervision (2000) issued many principles for the management of credit risk in banks. These principles are recognized as both guidelines and instructions to credit risk management of banks.

Central banks (or supervisor authority) require banks to establish risk departments in banks organization structures to manage and practice credit risk management in banks to minimize exposure losses. These principles for the management of credit risk comprise different important issues related to banks' activities. The main aim and objective of principles is to provide instructions and suggestions for a good management of banks' activities to minimize credit risk and avoid bank failure.

1.2 Motivation for the study

The present study will examine practice of credit risk management by private banks in Erbil-Iraq. The aim of the study is to investigate the effectiveness of practicing principles of credit risk management which are issued by Basel Committee on Banking Supervision (2000). There are three major reasons for assessing credit risk management in private banks-Erbil. The foremost is to analyses if there are a good frameworks practice of credit principles which are suggested by Risk Management Group of the Basel Committee on Banking Supervision (2000). The second is to investigate credit risk environment to ensure if banks are operating under a sound credit granting process. The third is to investigate measurement of credit risk and monitoring processes and, finally is to investigate role of supervisor (central banks) to prevent bank failure, provide financial stability and confidence.

1.3 The importance of the study for the banking industry

The study will be useful for banking industry in Erbil-Iraq because it will provide suggestions to private banks in Erbil-Iraq according to its findings. The study will analyze different points of practicing credit risk management and will determine both strength and weaknesses of process credit risk management. Retail banks will be able to improve their management of credit risk on the basis of the findings of this study.

CHAPTER 2

2.1 Problem statement and research question

The study will investigate how private banks in Erbil-Iraq will practice the credit risk management principles which issued by Basel committee for Banking supervision (2000). To determine whether and how credit risk frameworks look like in practice, the study will address following research questions.

1. What are the credit risk management frameworks of private banks in Erbil-Iraq?
2. What is the level of effectiveness of the credit risk management frameworks for private banks in Erbil-Iraq?
3. Does supervisor authority in Iraq evaluating CAMELS ranting system for private banks?
4. Do private banks in Erbil-Iraq have their own internal risk rating systems?

2.2 Hypotheses

From these questions, the following hypotheses may be formulated.

H1: Private banks in Erbil will practice credit risk management principles with an effective way.
H2: Supervisor in Iraq require a bank to have an effective system in place to identify and measure credit risk as part of an overall approach to risk management.
H3: Supervisor Authority in Iraq is evaluating CAMELS rating system for private banks in an effective method.
H4: Private banks in Iraq own their internal risk rating system.

CHAPTER 3

3.1 Objectives

The main objective of the study is to evaluate credit risk management practice in private banks in Erbil-Iraq. The aim of the study is to compare practice of credit management in private banks in Erbil-Iraq with standards of principles of credit management which suggested by Risk Management Group of the Basel Committee on Banking Supervision (2000) to analyze how banks will practice principles which will be for banks benefits to avoid bank failure and protect depositors.

The study will investigate how credit risk principles will be practiced by Private banks in Erbil-Iraq. The objectives of the study are:

1. To analysis different parts of principles which have impacts on credit risk management in bank such: board of directors' responsibility, credit risk strategy, written loan policies, internal rating used by banks, credit evaluation process, loan approving committee and loan review process in the bank. The study will investigate weaknesses and strengths of credit risk management practices and provide suggestions to recover weaknesses. The study is important for private banks in Erbil- Iraq because it will show the degree of effective practice for group of Basel committee;
2. To develop a constraint classification method for easier constraint identification and modeling;
3. To review current industry practices and researches regarding constraint modeling;
4. To outline a conceptual framework for total constraint management.

The results of this study will be valuable to the bank managers and boards of directors to understand their level of practicing frameworks of credit risk management and specifically strongest, weakness, opportunities and threats (SWOT) analyzes.

CHAPTER 4

4. Preliminary literature review objectives

4.1 Credit risk

Banks face many risks during their operation, but credit risk recognize as the first risk in terms of its effects on banks. Authors (e.g. Warsame; 2016; Khalid and Amjad; 2012) defined credit risk as a probability that debtor (or counterparty) will be unable or unwilling to meet its contractual obligation. Other authors (e.g. Basel Committee, 2000; Joseph, 2013; Bouteille and Coogan-Pushner, 2013; Gup and Kolari, 2005). Basel defined credit risk as probability that borrower (or counterparty) cannot meet its contractual agreement due to weakening of credit standing of a debtor for any reason. Credit risk cannot be avoided, but it can be minimized, thus, the aim of credit risk management in banks is minimizing exposure from credit risk during banks' lending and holding high score investments and diversify it. The effective management of credit risk is important to the long-term success of any lending institution. Ernst & Young (2010) calculated credit risk according to following equation.

Credit risk = Exposure × Probability of failure × (1 – Recovery rate)

Credit risk depends on two components, the first is amount of exposure and the second is the probability of default. Basel committee for banking supervision (2000) refers that loans are most source of credit risk in banks. other sources of credit risk are banks book and in trading book.
Lending is a main business of banks; it is a profitable business but is risky. Banks will select low risk (or creditworthy) customers to provide loan. Banks can examine creditworthy of customers through analyzing of five Cs of credit which are character, capacity, capital, condition and collateral. In addition of selection credit worthy customers, banks should diversify their loan portfolio and investments to reduce positive correlation to minimize loss exposure as a final goal.
Ghosh (2013) refers that credit risk is linked to the market risk. Causes of credit risk can be due to systematic risk or unsystematic risk. Market risk leads to creation of credit risk, for example, decline in economy will lead to decreased activity of businesses. Number of unemployed people will increase. It may be unemployment or simply non-enough cash flow which cause that borrower cannot repay back loan installments.
Macroeconomics has influence on credit risk because a good loan in economic growth times may change to a bad loan in recession time. Authors (e.g. Gitman and Joehnk, 2008; Bodie et al., 2010) refer that in the investment cycles, there is a trade-off between risk and return when money is invested. This means, that if investor will get a high return, he should bear high risk. According to this principle, banks will charge a riskier customer a higher interest rate. In contrast, a low risk (or creditworthy) customer will pay low interest rate since the possibility for default of this group is low.

4.2 Requirements of effective credit risk management in banking

The goal of credit risk department is minimizing exposure through practicing many techniques to identifying, assessing credit risk. These techniques are essentially is a first step for effective management of credit risk. Among techniques for effective management of credit risk are following.

4.2.1 Minimize credit risk

Bank manager is a risk manager. Credit risk cannot avoid, but it can be minimizing through using many techniques such providing loans to creditworthy customers and diversify loan portfolio. The goal of minimizing credit risk is to avoid exposure from credit risk, ensure growth and solvency for the bank constantly.

Ernst & Young (2010) refers that that top executives of banks are paying more attention to credit risk than any other type of risk. Whereas 67% of respondents thought that credit risk is the highest significance, other types of risk have also received significant attention: operational risk (44%), liquidity risk (38%), market risk (33%) and reputation risk (26%).

4.2.2 Board of directors

Board of directors is the highest authority in the bank. Authors (e.g. Basel Committee, 2000; Brunini monetary, 2018) refer that a board of directors is responsible to approve and review periodically (at least annually) both credit risk strategy and written credit policy. The risk strategy should reproduce banks acceptance for the risk and level of profitability that bank staff will achieve it.

The board should confirm that the top management have skills to manage credit activities which is conducted by the bank. In addition, board of directors will ensure that credit activities are undertaken within the written policy, credit strategy, risk appetite, risk-tolerance permitted by the board.

Basel Committee for Banking supervision (2000) refers that among principles of credit risk management in banks is that board directors should regularly (at least yearly) approve general term for credit granting criteria and credit approving system. Periodically, the board should review banks financial results and shall decide if the actual results matches with budgets profit. Capital adequacy for a bank will be determined according to evaluated risks in assets by bank's board of directors.

Authors (e.g. Basel Committee, 2000; Brunini monetary, 2018) refer that managing of credit activities in the bank will be ensured by board of directors that a practiced of risk strategy will match types of approved loans. The board should regularly meet (at least annually) to decide credit risk strategy and determine types of allowed loans and their regulation. To avoid conflicts of interest, board of directors are not allowed to involve in process of banks' loan approving and monitoring process.

4.2.3 Senior management

Senior management is responsible for implementing the credit risk strategy which has been approved by the board. Basel Committee (2000) refers that senior management will develop policies and procedures for identifying, measuring, monitoring and controlling credit risk. All the banks activities will be covered for both personal credit and portfolio levels.

4.2.4 Credit risk strategy

Basel commission (2000) refer that every bank should have its own credit risk strategy, which determine the goals of credit quality, earning and growth of the bank. Bank will determine the acceptable risk and rewards trade-off for its activity. Credit risk strategy should always be reviewed considering the economy's economic cycles. Credit strategy should assess periodically credit portfolio for the bank.

Credit risk strategy should consist of a minimum of:

1. Credit risk strategy should include a declaration of types of loans which bank is agreeing to provide for different segment of borrower's products and exposure types (consumer, manufacturing, commercial, real estate, etc.). the strategy should focus about geographical location, economic sectors, currency and deadline maturity for loans.
2. Credit risk strategy should identify markets which will be target. In addition, the bank should have a plan of loan portfolio. The bank should understand purpose of the loan plan and sources for repayment. Loan portfolio should determine the percentage of each type of loan distributed according economic sectors and geographic and terms. The aim of loan portfolio is to minimize loss exposures.
3. The objective of credit risk strategy is to provide a high standard of credit, earning and growth.

4.2.5 Written loan policy

Board of directors will approve a written loan policy. A written loan policy is a document & instruction which provide guidelines and principles for a bank loan policy and credit strategy. Up and Kolari (2005) refer that credit strategy must recognize the goal of credit quality, earning and growth and the risk /reward tradeoff. The loan policy will differ widely from bank to bank. The loan policy for a small bank that lends basically to local consumer are going different from policies of a large bank that lends to business companies. Loan policy comprise many parts:

1. Loan Authority: This part will determine who has the authority a prove providing loans, lending limits relative to capital, deposit and process of loan approval.
2. Loan portfolio: Banks must diversify loans to different economic sectors. The types of loans can be dividing into different economic sectors such consumer loan, commercial loan, real estate loan, agriculture loan and manufacture loan. The purpose of diversify is to avoid positive correlation between of risk and minimize loss exposure.
3. Geographic limits of the bank trade area: Banks can provide loans to different cities, regions and countries to reduce correlation and minimize risk. Banks should not lend to borrowers outside of their branch presents.
4. Policies for determining contractual term of the loan, fees and interest rates. Written loan policy should determine term of loans, needs for having collateral as guarantee, fees and different types of interest rates such fixed or variable for real estate loans.
5. Loan review: The credit strategy should comprise evaluating lending procedure, loan review and contact customers in the case of delay of repayment of loans. Loan review refers to observe loans to make sure that borrowers are to the examination of outstanding loans to make sure borrowers are following to their loan agreements and the bank is following its own loan policies. Banks today use a variety of different loan review soft programs to provide banks

quick check about delinquency borrowers. Bank will contact lawbreaking borrowers to know the reason of unpaid installment and will take actions to take over collateral as a final step to get back the remained balance of the loan.

6. Characteristics of written loan policy: Bouteille and Coogan-Pushner (2013) focus that written loan policy (or guidelines) must have the following characteristics: (1) A written loan policy should be understandable, written in a clear, simple language; (2) The guidelines should be short and precise; (3) Accessible which means that bank professional staffs should know where they find guidelines when they need it.

Bouteille and Coogan-Pushner (2013) refer that chief risk department is responsible to maintain guidelines constantly and the approval of guidelines must be done by senior risk management committee.

4.2.6 Risk management policy

Ghosh (2012) refers that board of directors of the bank issues risk management policy. Risk Management policy document describes the course of risk-taking activity to minimize the losses from risks. Banks are different in their risk-bearing capacity. The policy document will contain guidelines regarding risk acceptance level which is also referred as risk appetite. Risk management policy should keep in view banks resources, expertise, strength and weakness.

4.2.7 Risk management department

Banks are required by their supervision authorities (or central banks) to establish organizational unit to take care about risk management. Furthermore, they are required to propose procedures for risk identification, measurement and assessment. Risk management department in the bank will provide protection from bank's failure through using methods and techniques to minimize exposure of losses. Authors (e.g. Ghosh, 2012) focuses that risk department comprise of unit's credit, market and operation risk management.

The structure of risk management department in the bank depend on the size and geographical spread of branches and type of business activities. Recent studies (e.g. Ghosh, 2012) suggest that a separate risk management department have better independence than risk management divisions closed to each lending activities, real estate lending, commercial lending and consumer lending.

The organization structure of risk management will be as follows: The board of directors will be on the top and risk management committee of the board and internal audit department will be under board's supervision. Three units of credit risk, market risk and operational risk will be under supervising of risk management committee. The primary responsibility of boards of directors is to understand the nature of risks that a bank faces and prepares a suitable tools and techniques to manage each type of risk. The risks which a bank mainly bares in its operations are: credit risk, liquidity risk, operational risk, interest risk, foreign exchange risk, legal risk, performance risk, settlement risk and reputation risk.

The risk management in banking requires smart and intelligent human resources with a good understanding of risk management skills. Banks should use modern techniques for calculate credit risk. Risk management department will provide bank regulator monthly with different reports related to banks activities. Bank regulator will examine information in reports to evaluate how the bank is practicing instructions. Banks will be charged with fees if delays in sending monthly reports.

4.2.7.1 Credit risk management objectives

The objective of credit risk management is to ensure soundness and growth of the bank constantly through the provision loan to high score (or creditworthy) customers and apologize to a risky customer in addition to make quick decision in lending process.

The major objective of credit risk management would include the following:

- getting benefits from possible credit opportunities.
- effective loan pricing according to the risk;
- minimizing bad loans;
- adherence to credit policies;
- maintenance of a reliable database;
- improving cash flow.

4.2.8 Need for credit risk analysis

The main purpose of credit analysis is to select a creditworthy loan applicant. Banks must evaluate the ability and willingness of loan applicant before approving the loan. Credit analysis is important and necessary for banks to avoid both providing loan to a risky customers and default from few customers. A good credit risk analysis practice leads to ensure financial health and growth of the bank.

Credit risk will be not only available in loans which provide by a bank. Credit risk will be present in different types of bank off transactions. Joseph (2013) refers that around 40% of balance sheet items comprise of credit assets. These item on the asset side in a balance sheet include banker's acceptance, investments, letters of credit, foreign exchange, financial futures, swaps, bonds, options, commitments and guarantees, which will be off balance sheet transaction items. Slowdown of macroeconomy will lead to increased unemployment and reduced sales for many businesses and will lead to increase credit risk for some type of business.

4.2.9 Credit approving authority

Delegation of power in each bank should be a carefully formulated. The bank should determine approval authority for lending process. Credit committee comprises of three to four officers. Each member will represent head of units. Members will be credit risk manager, head of internal audit, general manager of the bank. It is essential that each member of credit committee has relevant training and experience to carry out its duty effectively. In addition, they should have skills for analyzing financial statements, credit risk, and understanding market risk.

Credit approving authority should be separated from marketing /relationship management function. Approval process should be documented in writing or by electronic signature. Approval records should be kept with credit application file.

4.2.10 Risk rating

Risk rating means to classify risks according to an assessment of a counterparty. Risk can classify to low, medium and high risk according to the impact on the borrower (or counterparty). According to many authors (e.g. Rose and Hudgins, 2013; Gauguin and Bilardello, 2005) many banks have a risk rating system for credit scoring of loan applicant and use it in credit approval decisions. Risk rating system will include all factors. Sounders and Cornet (2006) refer that risk rating system is designed to cover overall risk in lending. Banks will use financial rations, collateral, industrial and management characters that bear on the creditworthiness of borrowers.

4.2.11 Credit scoring

Credit scoring is classifying loan applicants according their ability to repay back the loan. According to Gosh (2013) credit scoring is a statistical analysis performed by lenders to evaluate a person's creditworthiness and soundness. Credit scoring is used by lenders to help to make their decision (whether to extend or reject credit). A person's credit score is a number between 300 and 850, 850 being the highest credit rating possible. A credit is using for credit decision for many types of lending including mortgages, credit card, consumer loans and auto loans. Ghosh (2013) refers that credit scoring will be influenced by five factors which are payment history, types of credit, new credit, current debt and length of credit. Banks will check history of loan applicant in providing new loans. Fair Isaac Corporation's credit scoring system, known as a FICO score, is the most widely used credit scoring system in the financial industry. Table 4.1 of FICO score shows categories of different ranting starting from less than 580 point as a poor ranting to over 800 point as a highest ranting.

Table 4.1: Categories of FICO Scores

Fico Score	Rating	Means of score
Less than 580	Poor	Well below average Risky borrower
580-669	Fair	Below average Many banks will grant loans
670-739	Good	Average credit Most banks consider this a good Score
740-799	Very good	Very good credit All banks provide loans
Over 800	Excellent	All banks are ready to provide loans Excellent credit

Source: https://www.investopedia.com/terms/f/ficoscore.asp

Hull (2010) refers that rating agencies such as Moody’s, Standard & Poor and Fitch are in the business providing ratings describing the creditworthiness of large firms and corporate bonds, but credit scoring for small firms and individual will be done by banks.

4.2.12 Risk pricing

According to Bodie et al. (2010) there is a tradeoff between risk and return. This means that investors should bear a high risk to get high return. Thus, risk pricing is reflex of the degree of the risk. Borrowers with a weak financial position will be placed in a high credit risk category and will price high, thus banks should use scientific systems to price the credit risk. Banks will calculate expected probability of default for loan applicant. Risk will be priced according different methods.

4.2.12.1 RAROC models

According to Ghosh (2013) large size banks across global have their own soft program for pricing of loans. Risk Adjusted on capital (RAROC) framework for pricing loans is among more popular method. Saunders and Cornet (2006) refer that RAROC model is used to evaluate (and price) credit risk based on market data. Gosh (2013) refers that RAROC formula can calculate as following.

Return on Risk Adjusted Capital = (Net income) / (Risk-Weighted Asset)

Where:

Risk – Weight Assets = Allocated Risk Capital, economic capital, or value at Risk

There is, however, a need for comparing the prices quoted by competitors for borrowers perched on the same rating /quality. Thus, any attempt at price-cutting for market share would result in mispricing of risk and 'Adverse Selection'.

4.2.12.2 Market determined pricing

Pricing of loans are highly influenced by offers from competitors in lending markets. Suppliers of credit usually offer homogenous products and the competition use pressure on pricing. Ghosh (2013) refers that most credit worthy customers invite price quotation from different credit providers before making their decision. Banks can form price according to LIBOR (London inter Bank Offered Rate). LIBOR is a worldwide method for international lending which use a variable interest rate plus a commission as a profit.

4.2.12.3 Economic profit-based pricing

According to Ghosh (2013) Banks seek a better return for risks that they are taking against some standard lending such purchasing Treasury bonds and government securities. It can formulate the equation.

Economic profit = Normal Earning - Cost of Capital

This means that it will compare present value (PV) of cash flow with the cost of capital.

Berk and De Marzo (2017) refer that Net Present Value (NPV) is the value of future cash flows over the life of the investment discounted to the cost of investment. If the result of NPV is positive. the project will be accepted, in contrast the project will be rejected if result of NPV is negative.

NPV will calculated Net Cash flow from investment during the life of the project by discount rate of future cash flows. NPV is widely used for making decision to comparing different alternatives in investments.

4.2.12.4 Cost-plus pricing

The basic pricing model is to consider all the costs and adding a mark-up for profit. The attractiveness of this kind of pricing is that it is fairly simple and straight forward. It ensures that the cost will be recovered from pricing, provided unduly large credit losses don't occur, which is a function of proper credit risk analysis.

Price = Cost + Markup percentage
LIBOR based loan rate = LIBOR +Default Risk Premium + Profit Margin

4.2.12.5 Other methods of pricing

The other known methods of pricing are: (1) Structure Pricing, (2) Grid Pricing, (3) Net Present Value (NPV) Pricing and, (4) RANPV (Risk - Adjusted NPV) Pricing.

4.2.13 Portfolio management

Saunders and Cornet (2006) refer that there are various approaches available to a bank manager to measure credit portfolio and concentration risk. Portfolio Diversification can reduce the loan risk exposure of a bank. There are two simple models that allow a bank to monitor and manage its loan concentration risk.

4.2.13.1 Migration analysis

According to authors (e.g. Barry et al., 2002; Gosh, 2013), migration analysis is an approach for credit risk management and is used to evaluate credit score of a loan for portfolio of the bank due to movement credit score in future. Migration analysis tracks the movements in credit quality factors (or credit score) of the pool of the loans over period of time to see if the credit score of the loan pool has been of better quality or degraded. Migration approach will provide information about final credit losses realized and at what time they were realized. Thus, this information can help credit risk manager make better decisions during managing the credit risk of the loan portfolio.

4.2.13.2 Concentration limit

Concertation limit means that banks avoid concentrating their portfolio and distribute their loan to different economic sectors and different geographic districts to avoid large exposure and avoid positive correlations. Bank regulators require banks to have limited loan concentration to individual borrower to a maximum of 10 percent of bank's capital. External limit set on the maximum loan size that can be made to an individual borrower. Saunders and Cornett (2006) refer that banks should determine concentration limit of the proportion of the loan portfolio that can go any single customer by assessing the borrower's current portfolio.

Concertation limit = Maximum loss as a percent of capital x 1/ (loss rate)
Source: Saunders and Cornett (2006)

4.2.14 Loan review mechanism (LRM)

Lending credit is the first part, loan review and collection are the second part which is more important. Rose and Hudgins (2013) refer that loan review is a necessity for a sound lending. Banks should put attention more to review large size loans and should own an active software program for loan review. Banks should not ignore borrowers. Review department should be separated from credit department and check credit departments credit decision. Loan review will provide information for determining adequacy of loan loss provision, evaluate loan policies and lending procedures.

4.2.15 Loan loss reserves

Experience of lending shows that there is probability that around 1-3 % of the amount of loans will not pay back due to many reasons. Thus, banks should determine funds from their profits as reserves in their balance sheet to cover such losses of loans as reserves.
Alpert (2020) refers that loan loss provision is an income statement expenses set aside as an allowance will put in liability side of balance sheet to be used as a provision to cover different types of loan losses and customer insolvency. Loan loss reserves is a balance sheet item represent amount of loan losses deducted from bank's loans. Bank supervisors require from banks to determine provisions for loan losses as a reserve.
According to Ghose (2013) banks create loan loss reserves in according with the regulatory guidelines and in conformity with the standard accounting practices. Bank regulators generally recommend a minimum considerable of loan loss reserves and provisions against the decline in assets values. The minimum amount of loan loss reserve for any loan will depend on three variables which are:

- The age of default loan
- The value of collateral
- The prospect of recovery expressed as a percentage of outstanding dues.

Two types of reserves and provisions are required by regulators. Types are loan loss reserves and loan-specific provision. Rose and Hudgens (2013) refer that loan loss reserve services as a cushion against the possibility of losses on loan in specified assets. Loan loss reserves is calculated as a fixed percentage of the total loans in advance.

4.2.16 Need for security

Banks require from loan applicant to provide a guarantee to the bank. Collateral is recognized as a second line of defense for the bank if borrower fails to get cashflow and repay back the loan. According to Rose and Hodgins (2013) and Gosh (2013) a bank will ask loan applicant to provide an asset such land, real estate, jewelry, equipment, government bonds or personal guarantee. The collateral acts as a protection for the bank in the case of borrower defaults on the payment. Bank can influence on borrower that he/she work hard to repay back the remain of the loan, otherwise he/she will loss collateral because the bank can seize the collateral and sell it to recover some or all of its losses. Finally, the asset which is used as collateral should have high marketability, stability of price, long duration and identification. Joseph (2013) refers that banks ask loan applicant to provide a pledge of a specific property to a lender, to secure repayment of a loan. The collateral acts as a protection for the loan to be paid back.

4.2.17 Elements of credit risk analyses

Authors on banking (e.g. Joseph, 2013; Gup and Kolari, 2005; Bouteille and Coogan-Pushner, 2013) refer that credit analysis is a process of drawing conclusions from available data (both quantitative and qualitative) regarding the creditworthiness of an entity, and making recommendations regarding the perceived needs, and risks. Credit Analysis is also concerned with the identification, evaluation, and mitigation of risks associated with an entity failing to meet financial commitments.

Credit department is responsible for making decision for daily case by case which lenders undertake when evaluating a request for credit. Granting credit approval depends on the willingness of the creditor to lend money in the current economy and that same lender's assessment of the ability and willingness of the borrower to return the money. The traditional methods involve the financial analysis of balance sheet and income statement. In general, the granting of credit depends on the confidence the lender has in the borrower's credit worthiness. Credit worthiness which encompasses the borrower's ability and willingness to pay is one of many factors defining a lender's credit policies.

4.2.18 The role of supervision

Among functions of a bank regulator (or central banks) is the responsibility to provide confidence in financial system and protecting depositors from bank collapse. Basel commission for Bank supervision (2000) issued instruction to commercial banks to be practiced. Ghosh (2013) refers that the supervisors should set up standards that bank expected to achieve and specify the parameters with respect that bank supervisor. Bank supervisor will evaluate banks procedure for identification, measurement, monitoring and control of credit risk. Bank supervisor should periodically review and identify the weakness of the bank’s credit risk management system. For this purpose, bank regulator will require commercial bank to submit monthly reports as a monitor method. Reports comprise financial statements. Bank regulator staff will analyze statements to calculate important ratios such capital adequacy, liquidity reserves, portfolio of loans and analyze ten largest depositors.

Authors (e.g. Gosh, 2013: 232; Rose and Hudgins, 2013) refer that bank supervisors examine banks activities, in addition, supervisor’s authority will examine on the onsite and off-site examinations relative to legal and regulatory compliance. Finally, the purpose of supervision is to evaluate credit risk to avoid bank failure.

4.2.19 Independence of the audit system

Saunders and Cornett (2013) refer that bank management should allow complete freedom to the internal auditors and distance themselves from the subjects of audit. Internal audit focuses attention on compliance with internal rules and regulations

4.2.20 Corporate governance

Saunders and Cornett (2013) refer that corporate governance in banks comprises of the principles, ethics and values established in pursuance of laws and regulations to run the business on sound lines to protect interests of depositors, shareholder. Corporate governance in the bank will focus to formulate of sound risk management policies and strategies by board of directors. Risk strategy and written policy will implement and monitor by senior management.

4.2.21 Role of disclosure

Banks should have disclosures in all activities. Principle No.11 of Supervision commission refers that banks should disclose to the public all their operation activities.

CHAPTER 5

5.1 Methodology

This chapter describes the empirical approach of the present study. The study will collect primary data from sample of private banks in Erbil-Iraq.

5.2 Empirical model

The study will suggest following model for credit risk managements.

$$Ln(Pit) = \alpha + \beta I1n(w1,it) + \beta 21n(w2,it) + \beta 31n(w3,it) + \beta 41n(w4,it) + \beta 51n(w5,it) + \beta 61n(w6,it) + \beta 71n(w7,it) + \beta 81n(w8,it) + \beta 91n(w9,it) + \beta 101n(w10,it) + \beta 111n(w11,it) + \beta I21n(w12,it) + \beta I31n(w13,it) + \beta I41n(w14,it) + \beta I51n(w15,it) + \beta I61n(w16,it) + \beta I61n(w16,it) + €it$$

Equation 5-1

5.3 Variables

The present study will analyze following variables described in the further points.

5.3.1 Dependent variable

The dependent variable (P1t) is establishing an appropriate credit risk environment.

5.3.2 Independent variables

The present study uses the flowing independent variables:

- W1 measures Board Director Governance
- W2 measures Credit Risk strategy
- W3 measures Diversification of loan
- W4 measures Written loan policy
- W5 measures Regulation of Lending policy
- W6 measures Top Management
- W7 measures Credit granting process
- W8 measures Credit Limit
- W9 measures Credit Administration
- W10 measures Control over credit risk
- W11 measures Loan review
- W12 measures Loan loss Reserves
- W13 measures Portfolio Management
- W14 measures Audit system
- W15 measures Corporate Governance
- W16 measures Role of bank regulator
- W17 measures Insurance policy

5.4 Population and sampling design

5.4.1 Population

Mugenda and Mugenda (2003) describe population as a complete group of individuals having common observable characteristics. According to Sharp and Howard (2006), the total anthology of elements from which reference will be made is referred to as a population. The target population in this study is credit risk management officers, credit department, Audit officers, CEO and Board members for retail banks in Erbil-Iraq.

5.4.2 Sampling design

5.4.2.1 Sampling frame

According to Cooper and Schindler (2008), a sampling frame is a correct and complete list of the population from which a sample is really drawn. The sampling frame includes all representative elements in the population selected for a specific investigation. For this study, samples are managers and staffs of risk management departments in retail banks in Erbil-Iraq.

5.4.2.2 Sampling Technique

The study will collect data from retail customers of banks using convenience selection method. According to Saunders et al. (2008), convenience sampling which is a non-probability method, is applied to those situations where the researcher can only obtain responses from willing respondents. The reason why this sampling technique was selected for this study is because a formal access to lists of populations from the banks is not possible.

5.4.2.3 Sample Size

Mugenda and Mugenda (2003) suggested the following formula to arrive at an adequate sample size:

n= $x = \frac{\mathrm{Z2-pq}}{\mathrm{d2}}$

Where:

n = the desired sample size (if the target population is greater than 10,000).
Z = the standard normal deviate at the required confidence level
p = the proportion in the target population estimated to have characteristics being
measured

q = 1 – p
d = the level of statistical significance set.

An estimate of 50% has been used for the "p"; this has been informed by Mugenda and Mugenda (2003), where if there is no estimate available of the proportion in the target population assumed to have the characteristics of interest, 50% should be used. Given a desired correctness of at least 90% (0.1 level), the sample size is calculated as follows:

$$n = = \frac{(1.96)2-(0.50)(1-.50)}{(0.1)2}$$

n = 96

The distribution of this sample was based on the ration of the banks in the Iraqi Market. Since public local banks were few compared to the other banks, fewer respondents were taken from them while local private banks gave a larger number of respondents based on their large number and probably large customer base. The distribution was as visible in table.

5.5 Data collection

The study will collect data through a survey, and it represent a qualitative research. Data will collect through a questionnaire and interview with credit risk managements staffs. Primary data will be collected from 35 private banks in Iraq. In order the research produce a realistic outcome. The buffet of data should be distributed over a large population. The survey questionnaires are designed to apply heterogenous, where target respondent is come from different gender educational background, different positions, different ethnics. The study will distribute 250 questionnaires to 35 private banks in Erbil-Iraq. Respondents of questionnaires comprise of board directors, CEOs and staffs for credit risk management, credit department, auditors and, heads of finance departments. For the study it will expect to receive at least 200 fully completed questionnaires which will be 80 % response rate. Questionnaire comprises of 152 closed questions. Questions are designed to get answers about points which focused about in principles of credit risk management are suggested by Basel committees for banking supervision (2000).

5.6 Data Analyzing

Collected data will be analyzed using SPSS statistics program version 24 as a testing tool and test hypotheses. Analyzed data will be frequencies of data distribution giving 5 for very effective, 4 for effective, 3 for not sure, 2 for less effective and 1 for strongly less effective. Frequencies of variables will be mean, standard deviation and variance. The study can find the result for regression model and checking R square from ANOVA to know how fits independent variable in the model. An ANOVA test can find out if survey or experiment results are significant. ANOVA analyzes can show the result F-test be used to test hypotheses and show the degree of significance to reject the null hypothesis or accept the alternate hypothesis. The study can find correlation between variables and see how variables among the model are correlated together.

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