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IMPACT OF CREDIT RISK POLICIES ON PROFITABILITY OF COMMERCIAL BANKING SECTOR IN PALESTINE

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Abstract

Exposure to credit risk has always been the primary and major source of problems in banks world-wide since granting credit is one of the main sources of income in commercial banks and needs to be managed well, or it may take the bank into large trouble or even bankruptcy. The aim of this study was to find out the impact of credit risk policies on bank's profitability and how major Palestinian commercial banks performed their credit risk management techniques and practices from 2005- 2011.The results of the study were limited to five sample banks and were not generalized for the all banks operate in Palestine. Furthermore, a combined methodology of both quantitative and qualitative approaches was applied and focusing on the description of the outputs of SPSS. Multiple regression models were used to do the empirical analysis and; develop two econometric models each model consisted of one dependent variable and five independent variables. In the first model Return On Assets(ROA) was defined as profitability indicator and Return On Equity (ROE) in the second model, good lending principles, credit monitoring, capital adequacy, income diversification and operational efficiency as credit risk management indicators (independent variables) were measured by five financial ratios; Nonperforming Loans Ratio (NPLR), Capital Adequacy Ratio (EQTA), Loan Loss provisions Ratio (LLPI), Noninterest Income Ratio (NIDR) and Operational Cost Efficiency Ratio (OPNI) respectively. The data was collected from the audited annual reports of the sample banks, the Palestinian Monetary Authority (PMA)'s annual reports and Association of Banks in Palestine (2005-2011).The findings and analysis revealed that credit risk management had significant effect on profitability of the five sample banks. NPLR, EQTA, LLPI and OPNI had significant negative relationship on ROA while NIDR had insignificant positive relationship. In ROE model, NPLR, LLPI, EQTA and OPNI had negative insignificant effect on ROE while NIDR had insignificant positive effect. Therefore, banks managements need to be careful in setting up credit policies that would not negatively

affect profitability only but also the bank's operations, to ensure prudent utilization of financial resources.

However, when compared with the major Basel regulations regarding credit risk management, it should be admitted that none of the large or small Palestinian commercial banks had met all the requirements strictly. It was found that the largest Palestinian commercial bank (Bank of Palestine), in particular, had followed the general principles to some extent but the others still had long way from Basel regulations, especially in the area of credit risk mitigation tools, credit control and the best practice of credit disclosure issued by Basel (2000).

Abstrakt

Úvěrová rizika vždy byla hlavním zdrojem problémů bank.na celém světě. Je tomu tak proto, že poskytování úvěrů je jedním z nejdůležitějších příjmů komerčních a bank a pokud tato činnost není dobře řízena může se banka dostat do velkých potíží, či dokonce zbankrotovat.

Cílem této práce je zjistit vliv uplatňované úvěrové politiky bank na jejich profitabilitu, a jak řídily největší Palestinské komerční banky v letech 2005 – 2011 svá úvěrová rizika. Výsledky práce zahrnují pět vybraných bank a nejsou zobecňovány na všechny banky působící na území Palestiny. V práci jsou popsány výsledky získané kombinací kavlitativních a kvantitativních metod zpracovaných v SPSS. Empirická analýza zahrnuje vícenásobné regresní modely; byly navrženy dva ekonometrické medely, kdy každý obsahuje jednu závisle proměnnou a pět nezávislých. V prvním modelu byla jako závislá proměnná zvolena návratnost aktiv (ROA) a ve druhém modelu byla jako závislá proměnná definována a návratnost vlastního kapitálu (ROE). Pravidla pro půjčování, monitorování úvěrů, kapitálová přiměřenost, a provozní efektivnost jako ukazatelé úvěrových rizik byly měřeny pomocí pěti finančních poměrových ukazatelů; Ukazatel nesplacených úvěrů (Nonperforming Loans Ratio, NPLR), kapitálová přiměrenost (EQTA), Ukazatel opravných položek úvěrů (Loan Loss provisions Ratio, LLPI), ukazatel neúrokových příjmů (Noninterest Income Ratio NIDR) a ukazatel provozní efektivity (Operational Efficiency Ratio OPNI). Data byla sbírána z auditovaných výročních zpráv vybranných bank, výročních zpráv Palestinské monetární autority (PMA) a od asociace bank v Palestině (2005-2011).

Výsledky analýz ukazují, že řízení úvěrových rizik významně ovlivňuje profitabilitu vybranných pěti bank. NPLR, EQTA, LLPI, a OPNI jsou významně nepřímo úměrné návratnosti aktiv (ROA), zatímco NIDR a jeho vztah k ROA se ukázal jako nevýznamný. Pro model návratnosti vlastního kapitálu (ROE), ukazatelé NPLR, LLPI, EQTA a OPNI vykazují nevýznamný negativní vliv a NIDR pak vliv nevýznamný pozitivní. Proto by bankovní management měl pečlivě zvážit a nastavit pravidla pro řízení úvěrových rizik tak, aby negativně neovlivnil profitabilitu banky, a také by měl zajistit obezřetné využívání zdrojů. Pokud bude srovnáno řízení úvěrových rizik s obecnými principy Basilejské rady, tak žádná komerční Palestinská banka těmto požadavkům zcela nevyhoví. Bylo zjištěno, že největší Palestinská komerční banka (Bank of Palestine) do značné míry splňuje Basilejské požadavky, ale ostatní sledované banky v tomto směru značně zaostávají, a to zejména na poli snižování úvěrových rizik.

Declaration

I hereby declare that this research is my own work. It is submitted in partial fulfillment of the requirements for the PhD degree at Czech University of Life Sciences Prague, Faculty of Economics and Management. It has not been submitted before for any degree or examination in any other University.

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Abbreviations

BCBS	Basel Committee on Banks Supervision
BIS	Bank of International Settlements
BOI	Bank of Israel
CO	Cooke Committee
CR	Credit Risk
EAD	Exposure at Default
EQTA	Total Shareholders' Equity/ Total Assets
IRB	Internal Rating- Based
IMF	International Monetary Fund
LGD	Loss Given Default
LLPI	Loan Loss Provisions/ Net Interest Income
MPT	Modern Portfolio Theory
MO	Military Order
MR	Market Risk
NPLR	Non-performing Loan Ratio
NIDR	Non Interest Ratio
NPLR	Nonperforming Loans/ Total Loans
OR	Operational Risk
OBS	Off-Balance Sheet
PD	Probability of Default
OPNI	Operational Costs
PMA	Palestinian Monetary Authority
PNA	Palestinian National Authority
RWA	Risk Weighted Asset
TSE	Total Shareholders' Equity

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CHAPTER ONE

GENERAL FRAMEWORK OF THE STUDY

1.1 Introduction

The banking sector plays a positive role in the development of the economy of any country as a whole. In the developing countries, banks are the main source of credit in the domestic markets due to the capital market weakness and limitation, and the lack of the ability to provide adequate sources of financing to investors (Saci, et al., 2009).

The last few years have witnessed amazing losses in the banking industry. Banks that had been performing well suddenly reported huge losses and some of them ended up with bankruptcy. These crises have had a bad impact on the economy as a whole, especially when the supervisory authority failed to stop and address the problem. In addition, the banking crises have had a significant cost. For example, developing countries spend almost 14.3 percent of GDP on cleaning up their financial system from consequences of such crisis (Honohan and Klingebiel, 2000). Analysis of the reasons behind banks 'failure reveals that problem of loans in banks had been very significant in all banking crises in recent years. Banking in modern economies is all about risk management because the economic implications of a bank's failure could be disastrous on the entire financial system. Unsound risk management practices governing bank lending played a critical role in recent episodes of financial turmoil (Atikogullari, 2009).

Credit risk can be defined as "the risk that promised cash flowing from loans and securities, held by financial institutions, may not be paid in full" (Saunders and Cornet, 2007). This is commonly measured by non- performing loan ratios such as Non-Performing Loans (NPL) to total loans and provisions for NPL to total loans.

Credit risk has always been the primary source of problems in banks all over the world. Banks should now have complete realization of the need to establish an appropriate credit risk environment, operating under a sound credit granting process, maintaining an appropriate credit administration, measurement and monitoring process and ensuring

adequate controls over credit risk. This is simply an effective credit risk management, since effective credit risk management is a crucial component of a bank's overall risk management strategy and is essential for the long – term success of any banking organization, not just surviving. The Palestinian banks are not an exception.

In a small country, like Palestine, still under the Israeli occupation, the financial sector is still in the development phase. Many newly established small commercial banks have developed a firm risk management framework, particularly credit risk management, besides the important control role played by Palestinian Monetary Authority (PMA), which serves as a central bank. The PMA was established by presidential decree in 1994 following the Oslo Agreement between the Palestine Liberation Organization and the State of Israel. The PMA acts with full autonomy in the pursuit of its objective of monetary and financial stability.

The banking sector is one of the most important components of the Palestinian financial system, and the most influential factor in financial and economical stability in general, as it is the major funding channel for both the private and public sectors. But banks operating in Palestine face a number of risks which could be summarized as follows:

- Presence of a legislative vacuum; specialized commercial courts do not exist;
- Lack of political and economic stability in the Occupied Palestinian Territories (OPT);
- Failure to apply the Mortgage Law in the Gaza Strip governorate and mortgage of movable property in the Palestinian areas;
- Lack of support financial institutions such as credit guarantee institutions and deposit insurance institutions;
- Shortage of specialized investment and development banks
  (Ashore, 2003);
- Absence of a national currency, thus resulting in transferring banks' surpluses abroad and depositing them in the form of balances in foreign banks (Al-Ja'afari, 2003);

- Absence of local credit rating companies, thus checking on the banks' ability to benefit from differential weights provided to clients who might obtain a high credit rating (Nasser, 2003).

Therefore, having solid and robust risk management framework particularly credit risk management, depends on accurate measurement and efficient management of this risk (Giesecke, 2004). One major motivation to conduct this study was the importance of credit risk management for the bank's performance and profitability. If credit risk is managed well and in a sound way, the profit level will be favorable and sufficient, since profitability is an indicator of credit risk management and policies adopted by the institution. The major question to be raised is, how much significant is the impact of credit risk policies on profitability of Palestinian commercial banks? This study will attempt to provide an answer to this question through a detailed look at the Palestinian commercial banks' performance since Credit risk management policies explore bank risk exposure, assessment, management and control of such risk.

1.2 Statement of the Problem

The nature of banking business is so risky and sensitive and banks are about risk management because most of banks' money is depositors' money. Banks use these deposits to create credit for their borrowers. This intermediation process is in fact a revenue-generating activity for most banks. The credit creation activity performed by banks ordeal them to high default risk that may lead to financial problems including bankruptcy. The significance of these problems arises from the risk of credit portfolio which is considered the major and crucial risk affect the bank's financial performance. Another major motivation to do this research was the importance of credit risk management issue and its effects on bank's profitability since commercial banks in Palestine are the most dominant in the financial sector and play a crucial role in the saving-investment process. If credit risk management is healthy and sustainable, the profit level will be acceptable, or on the other hand, if the credit risk management is poor, the profit level will be relatively lower. In other words, the less the banks lose from credit, the more the banks will gain. So banks'

profits can be an indicator of credit risk management. Since Palestinian commercial banks operate in a risky, complex, changeable economic and political environment, bank managements should be aware of these circumstances.

The central question now is: How significant is the credit risk management and policies in practice affect the profitability of commercial banks in Palestine? This study is an attempt to find an answer.

Against this background and problem formulation, the major research question is the following:

How does credit risk policies and management in practice affect commercial banks profitability in Palestine?

Another two questions could be formulated from the above question:

1- Do Palestinian commercial banks rely on good lending principles in managing credit portfolio risk, and what is the impact of that on bank's profitability?
2- What is the effect of credit risk mitigation techniques practiced by Palestinian banks, and what is impact of that on their profitability? This question raises four sub-questions
    I. To what extent do Palestinian Commercial Banks rely on Credit Monitoring in managing and mitigating their credit portfolio risk and its effect on banks profitability?
    II. To what extent do Palestinian commercial banks rely on capital adequacy and what is its effect on banks profitability?
    III. To what extent are Palestinian commercial banks efficient in diversifying their activities and their effect on banks profitability?
    IV. To what extent are Palestinian commercial banks efficient in managing their operational costs and what is their effect on banks' profitability?
3- What techniques do major Palestinian Banks currently adopt to manage their credit risks?

1.3 Objective of the Study

Since credit risk remains the crucial source of risk facing banks, causing shortage in banks profits, managing this kind of risk had always been one of primary challenges in running a bank (Broll, et al., 2002).

The main aim of this study was to find out and describe the impact level of credit risk management policies in the Palestinian banks on profitability levels. To this end, the following research objectives will be addressed:

1-To identify to what extent Palestinian commercial banks practice and follow credit risk mitigation techniques and what their effects are on bank's profitability?

2-To determine the relationship between the theories, concepts and models of credit risk management and real practicing by Palestinian Banks.

3-To give some important recommendations for the banks pertinent to credit risk management.

1.4 Significance of the Study

The importance of credit risk management arises from the papers and documents issued by Basel Committee on Banks Supervision (BCBS).This committee has provided recommendations on banking regulations in regards to capital risk, market risk and operational risk. The purpose of the Basel accord is to ensure that financial institutions have enough capital on account to meet obligations and absorb unexpected losses. The importance of this study can also be seen in the local banks' trend nowadays, according to Basel Committee Accords, to apply the standard approach in classification of credit risks, in addition to the use of different types of credit risk mitigations to face levels of vulnerability to high risks.

Therefore, several factors have contributed to the risk of the need for such a banking study and its application on the local banks. These factors include, the dramatic economic changes, the trend towards open market economies, weakness of regulations and legislations pertinent to banking operations, inability of some banks to keep abreast of

technological developments and technologies related to the mitigation of credit portfolio risks from an untraditional perspective. Current trends of many banks, to use different methods to mitigate the credit portfolio risks, include concentrations on principles of good borrowing, transfer of risks to other parties through credit derivatives, participation in risks through insurance on credit, efficient supervision of credit and the bank's strategy to mitigate the credit portfolio risks, using more advanced techniques and means.

Recently, the focus began, practically and scientifically, to shift to value of the bank through protection of the types and assets' quality and returns which make up the credit portfolio, protection of returns from fluctuations on the long term since the circumstances of the clients are changeable. This has led to the importance of using credit risk mitigations and their effect on the value of bank.

Pertaining to the Palestinian environment, the unstable political situation has led to a total deterioration of economic conditions, thus increasing the risks faced by banks and investors alike. The weakness of judicial authority contributes further to this risk. Moreover, the agencies enforcing judicial rulings are inefficient, and subsequently undermine the security of the banking sector and marginalize its role in impacting economic activities.

This study will help to enrich local literatures on the subject matter. According to the researcher's knowledge, no detailed studies were conducted on the impact of credit risk management on commercial banks' profitability in Palestine. In addition, it will also allow commercial banks of the country to evaluate their credit risk management mechanisms in order to reduce loan loss and become more profitable. So the outcome of this study will be a better understanding and awareness of banks managements about the adverse effect of credit risk on their profits. Further, it will help managers to minimize the credit risk level and improve their appropriate lending policies by taking into consideration the significant variables included in this study. This study's findings can be used for other findings that might prove to be helpful in introducing changes to of the practice of an effective credit risk management in the Palestinian banking sector.

1.5 Methodology of the Study

To achieve the aims and objectives of this research, a combined methodology of both quantitative and qualitative approaches was applied. The quantitative approach in this research was mainly used to answer the first two research questions. In order to get a general understanding of the major Palestinian banks' credit risk management level of their lending decision quality performance, within the study period, ratio analysis was adopted. That is, the researcher used the regression model to analyze the data collected from the annual audited reports of the Palestinian banks, Association of Banks in Palestine and the Palestinian Monetary Authority (PMA). Based on the result of regression output and feedback from the research questions, an analysis was conducted and research questions were answered. The major hypothesis for testing was whether credit risk policies and techniques adopted by Palestinian banks affected their profitability. Palestinian commercial banking sector has been chosen for the purpose of this study; however, two Islamic banks have been excluded from this study. In other words, five Palestinian commercial banks were the study sample. For that reason, the researcher made 35 observations in the regression analysis. The primary data used for the study were from 2005-2011.

The qualitative study part in this research provides can actually be viewed as a collective case study, which, as defined by Silverman (2005), means a number of cases are studied in order to investigate some general phenomenon and answer the third question of this study. As to the techniques chosen for this part of the research, textual analysis was employed and a comparison method was also used. It is believed that these methods are suitable for this part of the research because through analysis of the performance reports of banks in question, Access to all the available information needed in the research can be gained, and assessment can be made, providing both a separate evaluation and generalization on the sample banks' credit risk management practices.

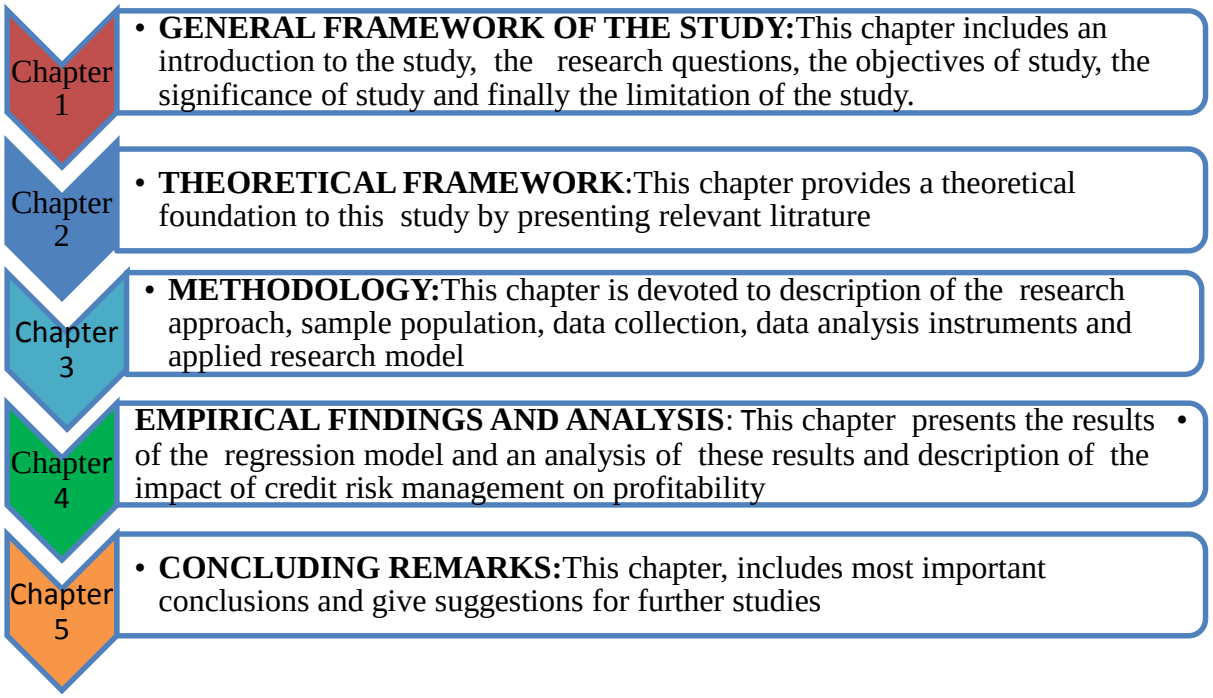
1.6 Limitation of the Study

This study is limited to identifying and describes the effects of credit risk policies on commercial bank's profitability in Palestine. Thus, the other risks mentioned in Basel

Accords are not discussed. Due to the unavailability of information in annual reports, our sample was limited to the Palestinian Commercial Banks'. Not all the annual reports from 2005 to 2011.Though the five ratios selected for the quantitative research are widely accepted as related to banks' credit risk and quality level and are already used in other literatures, their representation cannot be guaranteed. After all, it is difficult to find out how many ratios would be enough to provide a comprehensive measure, or whether the ratios chosen in this research are the most important ones related to the management of credit risk.

1.7 Structure of the Study

The structure of the dissertation will be organized as follows:



CHAPTER TWO

THEORETICAL FRAMEWORK

SECTION ONE

RISK AND BANKING RISKS

2.1 Risk and Banking Risks

2.1.1 Introduction

This section begins with a review of some definitions of several key words and concepts that will be later dealt with in this thesis. First, the readers will have a chance to become familiar with the risk concept and various kinds of banking risks in order to understand the position of credit risk among other banking risks and the significance of an effective credit risk management on banks' performance and profitability. The section then moves to some details on risk management and related issues. The section concludes with an examination of credit risk management and evaluation criteria for an effective credit risk management framework.

2.1.2 Concept of Risk

Risk is a result of the uncertainty of future events and inherent in any conduct of life in general and in financial sectors in particular. When risk cannot be avoided, one looks for ways to reduce the risk or its impact. But even with careful planning and preparation, risks cannot be completely eliminated or avoided because they cannot all be identified in advance. Risks are much more complex in recent years since one single activity can involve several risks. Risks are inside risks. Risks overlap risks. Risks contain risks. Risk-related concepts are many. The following are the most important concepts:

- **Risk** can be used to describe "the uncertainty surrounding events and their outcomes, which either enhance or inhibit operational performance, achievement of aims and objectives or meeting of expectations of stakeholders" (Spedding and Rose, 2008).
- **Risk** is defined as something occurs that might affect the achievements of goals and objectives. It contains risks as an opportunity or threats (National Audit Office, 2000).
- **Risk** is also defined the possibility of events and outcomes that comprise opportunities for benefits or threats to success (IRM, 2002). In other words it contains upside or downside results.

- **Risk** can be defined as "the probability that a bank is exposed to unexpected and non-planned losses or volatility of the expected return on an investment, resulting in negative effects, thus affecting its ability to influence bank's desired goals and the implementation of its strategies successfully"(Keegan, 2004).
- **Risk** is defined as the direct possible loss which happen as a result of losses in the bank's operations or any losses in the bank's capital. Risk also can results from any indirect factors affecting bank's ability to achieve its goals and objectives, that results in the bank's ability to keep continuing its services or limiting its ability to capture available opportunities (The Financial Services Roundtable (FSR), 1999).
- **Risks** are The possible sensitivity to unplanned or unexpected for losses resulted from any fluctuation in the expected return or credit portfolio That is, a risk represents deviation of actual figures from expected/ predicted figures (Dorfman, 1998).

As a result, Risk must be considered as potential unpredicted event that happen in the future and could carry benefits or threats to its receiver. A balance between the gains and losses is essential and risk management will take care of that balance.

2.1.3 Banking Risks Classification

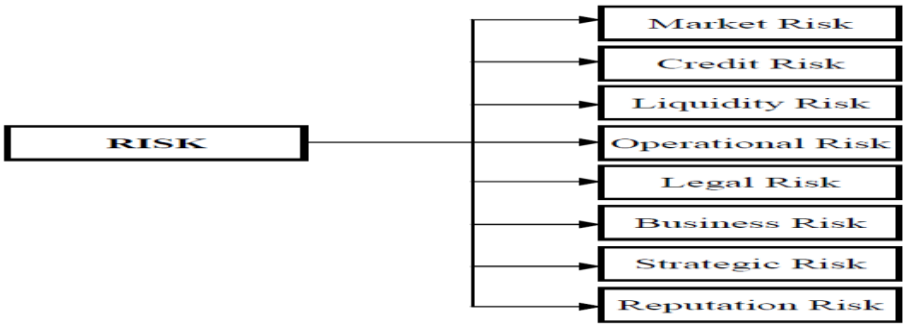
In this ever-changing competitive environment, the banking business, compared to other types of business, is ultimately exposed to risks. Banks now days are operating in a rapidly innovative industry with a lot of profit pressure that encourage them to create more and more value-added services to offer and better satisfy the customers.

The primary goal of any bank management is to maximize the wealth of shareholders. This accordingly results in maximizing the market value of the ordinary shares. This maximization of shareholders' profits necessitates that manager's conduct an evaluation of the cash flows and any risks the bank would bear (Koch and MacDonald, 2005).

It should be maintained that an increase of profitability indicates that the bank management is investing in assets which generate the maximum amount of return possible coupled with reduction of cost. However, there is a difference between maximization of profit and maximization of wealth. To make it possible for the bank to realize high returns, it has to hold more risks or reduce operating costs. In contrast, maximization of wealth requires that the bank management evaluate and strike a balance continually between the opportunity to obtain high returns and risks resulting from that endeavor (Koch and MacDonald, 2005). Banks are prone to many kinds of risks. Some of them are operation-related while others are asset-related. These risks might check on their ability to carry out their missions or they might affect their ability to achieve their goals: current and future. In the final analysis, these risks have an impact on bank returns and market value of assets and obligations.

There are many different ways on how to define and classify banking risks. Scholars and analysts in recent decades have been trying to group banking risks into categories. The Basel Accords issued by the Basel Committee on Bank Supervision (BCBS) mention three broad risk types in the first pillar: credit, market and operational risks. The second pillar deals with all other risks (Basel, 2006). Another classification of bank risks is introduced in "The Essentials of Risk Management" by Crouhy, et al., 2006.

Figure 2.1: Typology of Risks



Source: Crouhy, et al., 2006.

According to Greuning and Bratanovic (2009), banking risks can be classified into different types as reported in table 2.1.

Table 2.1: Different Types of Banking Risks

Financial Risks	Operational Risks	Environmental Risks
Balance sheet structure	Internal fraud	Country and political risks
Earnings and income statement structure	External fraud	Macroeconomic policy
Capital adequacy	Employment practices and workplace safety	Financial infrastructure
Credit	Clients, products, and business services	Legal infrastructure
Liquidity	Damage to physical assets	Banking crisis and contagion
Market	Business disruption and system failures (technology risks)	
Interest rate	Execution, delivery, and process management	
Currency		

Source: Greuning and Bratanovic, 2009

Quite comprehensive classification of banking risks are presented by Koch and MacDonald (2005), that banks are vulnerable to, presented as follows:

2.1.3.1 Credit Risk

This type of risk is associated with quality of assets and probabilities of failure to repay. There is a huge difficulty which faces the evaluation process of assets quality due to the

limitations and scarcity of published available information. Whenever the bank acquires one of the profitable assets, it bears the risk of failing to repay or because of bank borrower's failure to repay the asset amount. This in addition to interest on due dates and according to agreed upon conditions.

Credit risk is one key variable which affects net income and market value of equity resulting from failure to repay or delay of repayment. There are different kinds of assets which are characterized by probability of failure of repayment in them. These items include what is inside the budget such as loans and bonds. Items off the budget include credit letters and/ or credit documents. Loans are the biggest type and are characterized by a high degree of credit risk. Changes in general economic circumstances and enterprise operation environment affect cash flows available for repayment or servicing of debt. However, it is difficult to predict these circumstances. In addition, the individual's ability to repay the debt differs according to changes taking place in employment and his\her net wealth. Therefore, banks analyze the credit of each loan applicant separately to assess the borrower's ability long before the accounting date reveals any problem.

2.1.3.2 Liquidity Risks

These risks represent current and potential risks in net income and market value of shareholders' equity. These usually originate as a result of the bank's failure to meet its payments and financial obligations at maturity dates at reasonable cost whether through the selling of assets or obtaining of new loans (deposits) or their repayment at a higher cost .These risks increase when the bank hasn't the necessary finances to repay without incurring unreasonable losses and ownership of appropriate liquid assets that can be transformed into cash to meet the demand on withdrawal of deposits and applications for different loans (Koch and MacDonald, 2005).

Liquidity risks originate as a result of failing to match between the due dates of assets and receivables and due to lack of follow up of deviations between the expected and the current money surplus. This is in addition to the failure of following up the swift statement which shows the condition of current accounts of the bank at the correspondence banks pertaining

to foreign/hard currency and the consequences emanating from mismanagement of liquidity, increase of money cost, loss of alternative opportunity, drop of bank profits due to lack of employment of these funds (Koch and MacDonald, 2005). Liquidity risks usually appear due to external and internal factors.

Internal factors include weakness of liquidity planning, poor distribution of assets on facilities of various degrees, sudden change of some obligations. External factors include economic recession and severe crises which originate in capital markets (Saunders, et al., 2002). Management of liquidity risks is done through diversification of the bank's financial resources, study of assets in the frame of a monetary policy which represents preservation of a reasonable balance of liquidity, financial instruments that can be liquidated in the financial market, the daily flow of liquidity conditions at the bank, keeping a certain percentage of deposits and distribution of financing, diversification of financing decisions given to clients, diversification of installment due periods, coverage of deficit in liquidity through borrowing from the central bank or other banks, and refraining from focusing on a certain client or a group of clients and dealing with the surplus liquidity.

2.1.3.3 Market Risks

Market Risk is the risk of losses in on- and off-balance sheet positions arising from movements in market prices (Bangkok Bank, 2009).

Market risks represent both current and potential risks. These risks, in turn, have an impact on both net income and market value of shareholders' equity. They usually originate from changes or moves in market rates and rates of prices. These risks are systematic and their effect is reflected on both assets and obligations. Market risks include interest rate risks, asset pricing risks (equity and commodity prices) and currency exchange risks (Santommero and Babble, 2004).

- **Interest Rate Risks**

These risks originate as a result of mismatch between the due assets and liabilities, thus leading to difference in cost of refinance or reinvestment (Rose and Hudgins, 2005).These

interest rate risks show the basic change in net of bank interest income and market value of equity in comparison with the changes which occur in market interest rates (Koch and MacDonald, 2005).

- **Asset Pricing Risks**

These risks originate due to changes in assets prices and changes in investment and credit portfolios in particular. These risks depend on internal factors, such as financing structure, and external factors such as economic circumstances (Koch and MacDonald, 2005).

- **Exchange Rate Risks**

These risks arise from dealing with foreign currencies and fluctuation of currency exchange rates. These risks usually impact foreign currency, price of assets and obligations and activities outside the budget. These risks increase when a change occurs in exchange rates of foreign currencies and when amounts of assets differ from obligations as a result of currency difference. Any change in exchange rates results in profit or loss and its impact appears in the market value of shareholders' equity (Koch and MacDonald, 2005).

2.1.3.4 Operational Risks

Operational risk is "the risk of loss from failed or inadequate internal processes, people and systems, or from external events. This includes legal risks, but does not include strategic risks and reputation risks" (monetary Authority of Singapore, 2009).

These risks originate as a result of market changes in operational expenses of what would be expected. This in turn leads to drop in net income and enterprise value. Some banks don't have competency to have control on direct costs (Kochand MacDonald, 2005). Success of control and supervision of this type/category of risks depends on whether the bank system, through which products, financial services and different jobs are distributed, is run efficiently or not. It's also\related to the presence of internal support systems providing processes efficiently (Koch and MacDonald, 2005).

2.1.3.5 Capital Adequacy Risk

Capital Adequacy Risk is the risk that the Bank may not have sufficient capital reserves to operate its business or to absorb unexpected losses arising from credit, market and operational risks (Bangkok Bank, 2009). Capital risks arise as a result of insufficient capital to protect interests of all parties dealing with the bank. These parties are namely depositors, borrowers, investors and other stakeholder. Capital market risks cause a drop in market value of assets over market value of obligation (Koch and MacDonald, 2005).

2.1.3.6 Legal Risks

Legal risks affect the bank's income and capital resulting from unexpected events such as legal claims, including class-action suits, inability to enforce contracts, or rulings against the bank, which may cause damage to the Group's profitability. According to the Bank of Israel's definition, legal risk is "the risk of a loss due to the inability to enforce an agreement by legal actions". Risks of this kind in the Bank's work may arise from a wide range of diverse circumstances. Thus, for example, risks may arise from the absence of written documentation of contractual engagements between the Bank and its customers, or between the Bank and its suppliers or others.

These risks arise when the contracts between parties are ambiguous or when they don't clearly and specifically spell out the rights and obligations (Koch and MacDonald 2005). According to Ghosh (2012), legal risk is the risk of financial loss that arises from uncertainty of outcomes of legal suits filed by the bank in a court of law or from legal actions taken against it by third party.

2.1.3.7 Reputational Risks

Reputational risks arise due to the presence of a negative impression about the bank, thus causing losses in financing resources or client's switching to competitive banks. These losses and drop in the number of bank's clients are due to bank managers' and employees' wrong practices\behaviors or due to failure to serve the clients quickly, accurately and with the expected quality. In the final analysis, all this leads to shaking of the client's confidence

in the bank. One example of that is the bank's illegal practice, such as money laundering or financing of undesirable sectors (Koch and MacDonald, 2005).

2.1.4 Banking Risk Management

Banks nowadays are vulnerable to numerous risks due to the dramatic developments in different activities / operations, namely emergence of new products, introduction of new investment services and expansion in investment portfolio, let alone the huge developments in technology, telecoms and information systems. The growing complexity of financial technology that arise from Deregulation and globalization of financial services, are making banking activities more varied and complicated. Therefore, it has become a must for banks to take the necessary measures to identify these risks and set up appropriate measures to check on their effects.

Risk management in banks became the hot issue after the 2008 financial crisis. The crisis appears as the most important one in the modern period. It is systematic in nature, in that it involves the entire financial system, from the capital markets, to banks, and all financial firms.

2.1.4.1Risk Management

As mentioned above, 'risk is always bad' is a wrong supposition and can misdirect the way people and organizations deal with risks. Eliminating each and every risk absolutely is not the way because risk is an unavoidable element of life. Furthermore, there is particular relationship risk and return. Looking for higher rate of return, so be willing to take risks, which depend on your risk tolerance. The point is how to select, manage and control risk correctly, profitably and beneficially. That is the question that risk management must achieve. Companies faced different types of risks in a specific and unconnected manner; today, instead, there are methods of "definition and control", which are collected in a systematic approach known as "risk management", which provides reasonable defense against the possible verification of harmful events.

Risk management therefore can be defined as “a group of actions that are integrated within the wider context of a company organization, which are directed toward assessing and measuring possible risk situations as well as elaborating the strategies necessary for managing them”(EWF, 2008). Like risk, risk management has been attempted to be define in various ways in the literature. But there is one definition from the International Organization for Standardization (ISO) that is typical and covers most of general issues: “Risk management is a central part of any organization’s strategic management. It is the process whereby organizations methodically address the risks attaching to their activities with the goal of achieving sustained benefit within each activity and across the portfolio of all activities.” (IRM, 2008).The above definition of risk management is an indication to:

- Risk management’s primary task is to create benefits to the companies and makes them sustainable.
- Risk management is central in any firm’s strategy.
- Risk management is an ongoing and continuously developing process.

Figure 2.2: Risk Management Process

Source: International Standards Organization, 2008.

To conclude, risk management is considered a discipline or a system that all financial and banking institutions should respect in all its totality. This system covers all banking activities and it aims at realizing optimum return upon entering business risks. Through identification, measurement, follow up and control of risk facing these financial and banking institutions, one can be sure that:

- The individuals who take or manage risks clearly understand it.
- The organization's Risk exposure is within the limits established by Board of Directors.
- Risk taking Decisions are in line with the business strategy and objectives set by board of directors.
- The expected payoffs compensate for the risks taken
-Risk taking decisions are explicit and clear.
- Sufficient capital as a buffer is available to take risk.

2.1.4.2 Risk Management in Banking Firms

Banking risk management indicates to the whole group of risk management processes and models which allow banks to execute all techniques and management instruments necessary for identifying, measuring, monitoring and controlling risks (Bessis, 2002). According to that, a cornerstone to solid and efficient risk management in banks is not necessarily to reduce or minimize all various types of risks. For example, the possible loan losses (credit risk) that immanent to lending operations performed by banks make banks able to charge premium for taking risk-operations and makes a profit for that. Therefore, risk becomes source of profits. To manage different types of risks in a good manner, it is fundamental to divide and select risk into two major types, based on the ingrained characteristics, namely risks that you can handle or taken it and risk you should avoided or minimize it. Risk management in banking not about minimizing the absolute level of risk, instead it is about optimizing the risk-return trade off. As a matter of fact, banks form a crucial part of the financial market and any action by banks can have immediate and direct impacts on the country's financial stability.

The 2008 international financial crisis is a crisis arisen from the banking institutions then spread to the entire financial sector. The issue of safe, sound banking sector and the importance of robust risk management framework in banks are now important than ever. The increasing interactions among financial institutions world-wild, may lead to series of effects if something goes wrong. Like contagious disease, one affects the others (Utrecht University, 2010).

Finally, we can say that banks are risk machines in the economics. They handle risks, they convert them, and they insert them in banking products and services. The first primary objective for banks to take such risks is to increase revenues for the bank (the positive relationship between risk and return). Second, a powerful motive for banks to take risks might be to achieve competitive advantage (Arora and Agarwal, 2009). Risk management in banks is a group of policies to manage and monitor bank's operations and transactions which may negatively affect banking operations, and taking precautionary measures to determine, control and reduce these risks (Ardrey, et al., 2009). The policies that banks usually follow in practice, establish standard processes, management, models, and evaluation criteria which are to be implemented in the bank's entire system. These policies are mostly reviewed on annual basis. At the international level, the most well-known regulation is the Basel Accords issued by the Basel Committee on Bank Supervision (Basel II, 2004). The overall aim of Basel II is an adequate capitalization of banks and best practice risk management to strengthen the banking system's stability through "three pillars": minimum capital requirements, supervisory review and market discipline (Crouhy, et al., 2006). Most developing countries, including Palestine, are still on the way to adopt.

2.1.4.3 Bank Profitability

In this study, the position of profitability has been measured with the help of Return on Assets (ROA) and Return on Equity (ROE) which takes into consecration bank size and considered two major ratios in calculating bank's profitability.

ROA in Banks

From accounting perspective, Return on assets (ROA) is considered an inclusive measurement indicator of total bank performance and profitability (Sinkey and Joseph, 1992). ROA ratio indicates to management efficiency in using and utilizing the company's overall assets to make or generate a profit. The higher the return, the more efficient management is in utilizing its asset base. ROA is a ratio calculated by dividing the net income over total assets. ROA have been used in most of the studies of bank's performance as a measure of bank profitability.

ROE in Banks

Return on equity is "the amount of Net Income (NI) returned as a percentage of Total Shareholders 'Equity" (Investopedia). We choose it as profitability indicator because ROE comprises aspects of performance, such as profitability and financial leverage. ROE is commonly used to measure the profitability of banks. The efficiency of the banks can be evaluated by applying ROE, since it shows that banks reinvest its earnings to generate future profit. However, the increase of the operating margin can smoothly enhance the ROE (Foong, 2008). ROE also hinges on the capital management activities. If the banks use capital more efficiently, they will have a better financial leverage and consequently a higher ROE. Because a higher financial leverage multiplier indicates that banks can leverage on a smaller base of stakeholder's fund and produce higher interest bearing assets leading to the optimization of the earnings (Foong, 2008).

SECTION TWO
BANKING REGULATION

2.2 Banking Regulation

2.2.1 Introduction

Despite the fact that banks are operated for profit and bankers are free to make many decisions in their daily operations, banking is commonly considered as a matter of public interest. Because of the importance of banking industry for the country's economy, governmental authorities try to maintain some degree of control over the banking industry as any adverse events might result in a large –scale economic crisis. Banking laws and regulations extend to many aspects of banking, such as restrictions on pricing interest rate or fees, restrictions on the portfolio of assets that banks can keep, restrictions on reserve requirements (requirements to hold a certain quantity of the liabilities of the central bank), requirements to direct credit to favored sectors, special rules concerning mergers, restrictions on branching and new entry, and other rules affecting cooperation within the banking sector.

Banking regulators have several goals (Heffernan, 2005):

- Improving the safety of banking industry, by imposing capital requirements in line with bank's risks.
- Promoting sound business practices.
- Equalizing or slowing down the level of competitiveness among banks through setting common benchmarks for all banks.

According to Gestel and Beasens (2008) banking regulations are essential, since they can achieve a number goals:

- Deposit protection: the first goal of regulations is to protect the deposits of small creditors, since they don't have sufficient information and experience to

adequately monitor their banks and assess their solvency and the risk of their deposits.

- Avoidance of systematic risk: since banks have significant exposures to other banks, the collapses of one bank will affect others, like contagious disease disrupting the stability of the financial sector. This results in a total macroeconomic cost of a financial crisis.
- Protection of money: since money reflects mainly the currency, payment and settlement systems, a financial crisis would impact these elements.
- Financial efficiency: the collapse of one or more banks would reduce the financial functioning of the local economy.

The regulatory framework sets up the constraints and guidelines that influence risk management practices, and stimulates the development and enhancement of the internal risk models and processes of banks. Regulators promote and assist better definitions of risks, and create incentives for developing better methodologies for their measurement.

The main pillar of regulations is 'capital adequacy'. By enforcing a capital level in line with risks, regulators focus on pre-emptive actions limiting the risk of failure.

2.2.2 Capital Adequacy

Capital adequacy is a dynamic concept which is affected by the current and expected economic situation of the whole economy. It can be defined as a condition where bank's capital is enough to absorb all losses and cover the bank's fixed assets with sufficient extra capital for the current operations and future growth (Ebhodaghe, 2001).

New regulations make the 'capital adequacy' principle a main foundation. These regulations began at the end of eighties. Regulatory requirements use minimum fair amounts of capital held against risks to ensure that capital is high enough to afford future losses realized from current risks. In other words, it is a bank regulation that sets a framework on how banks must treat or manage their capital. These requirements are stipulated by regulatory agencies, such as Bank for International Settlements (BIS), to ensure that institutions are not involved in or holding investments that increase the risk of

default. In addition, they guarantee that financial institutions have enough capital to sustain operating losses while honoring withdrawals. Guidelines of 'capital adequacy' approach are defined by the Basel Committee on Banking Supervision (BCBS).

2.2.2.1 Function of Capital

Providing protection against unforeseen losses is the theoretical reason for holding capital. Without capital, banks would fail at the first moment of facing financial difficulties. Capital functions can be summarized in the following (Greuning and Bratanovic, 2009):

- A base for bank's growth and development;
- Protection of deposits of all types and protection of lenders
- Acquisition of fixed assets;
- Absorption and coverage of unexpected losses;
- Support of depositors' confidence and in the banks' abilities to face problems;
- Representation of owners in bank management.

Bank capital, therefore, serves as a financial shield to lessen the possibility that uninsured depositors and other claim holders might lose funds if a bank is closed and liquidated.

2.2.2.2 Credit Exposures

Credit exposures can be defined as "The total amount of credit extended to a borrower by a lender" (Investopedia). The size of credit exposure indicates the extent to which the lender is exposed to the risk of loss in the event of the borrower's default. A credit risks ingrained in a credit exposure are influenced by the financial strength of the party owing money to the bank. The greater this is, the more likely it is that the debt will be paid, or the bank will enforce repayment. Credit risk is also affected by market factors that impact the value or cash flows of assets that are used as security for loans. For example, if a bank extend a loan to a person to buy a house, and pledging the house as collateral, any negative movements in the property market will have an influence on the likelihood of the recovering all money owed to it.

2.2.2.3 Basel Committee

The Bank for International Settlements (BIS), an international organization of central banks, was set up to encourage collaboration among central banks and other agencies to sustain and promote financial stability (Wikipedia online, 2012). The BIS therefore has two specific goals: to regulate capital adequacy and to make reserve requirements transparent. The Basel Committee on Banking Supervision (BCBS) established in 1974 by the Bank of International Settlements (BIS). The (BCBS) are an international organization that develops policies on best practices in the field of financial regulations. The Committee does not own formal international supervisory authority, and any legal force for its results.

2.2.2.4 Basel Capital Accord

In 1988, the Basel Committee issued the, "International Convergence of Capital Measurement and Capital Standards" more known as the "Basel Capital Accord". It includes recommendation approach for capital adequacy calculation ratios and minimum capital adequacy ratios for international banks. The Accord was developed in order to improve capital adequacy ratios (which were considered to be too low in some banks) and to help standardize international regulatory practice.

The Basel Accord originally formed as a standard for use in the G10 countries, and required them to hold capital equal to at least 8% of weighted assets. It has been inserted into domestic regulation throughout the world and applied to variety types of banks, both large and small financial institutions, including those with little or no international activities.

The accord defines capital for supervisory purposes in two tiers (Basel, July 1988):

- Core Capital (**Tier 1**) is the core measure of a bank's financial strength from a regulator's perspective. It consists of the types of financial capital considered the most reliable and liquid, primarily Equity Capital (paid-up capital) and retained earnings. Tier 1 capital can absorb losses without a bank being required to stop

trading. Tier one capital is important because it safeguards both the survival of the bank and the stability of the financial system. (See Appendix1).

- Supplementary capital (**Tier 2**) Tier two capitals is the second most credible form of financial capital, from regulators perspective as an indicator to the bank's financial strength. Tier two capitals provides lower protection to depositors than tier one does and absorb lower losses in the event of a winding-up.

Tier 2 capital is diversified. It includes items as the undisclosed reserves, revaluation reserves, general loan loss reserves, Asset revaluation reserves and hybrid debt capital instruments Banks should keep at least half of its measured capital in Tier 1 form. Since this capital is considered the core capital and more reliable form of capital. Tier 1 capital is subject to a minimum constraint of 4% of total risk- weighted assets and 3% of total assets. The Accord introduced the ratio of bank's capital (Tier 1+ Tier 2) over the risk weighted assets. This ratio addressed bank's credit risk.

Figure 2.3: Minimum Total Capital

$$\frac{\textbf{Total Regulatory Capital (Tier1 + Tier 2)}}{\textbf{Total Risk- Weighted Assets (RWA)}} \geq 8\%$$

Minimum Tier one ratio

$$\frac{\textbf{Total Tier1 Capital}}{\textbf{Total Risk-Weighted Assets (RWA)}} \geq 4\%$$

Tier 1 – Core capital

Tier 2- Supplementary capital

RWA - Risk weighted assets, the credit risk capital charge.

Source: Basel, 2000

The calculation of the ratio employs assets weights for differentiation of the capital according to quality in terms of credit standing. The weights begin from zero for

commitments with public counterparties, up to 100% for private sector. The major strength of the ratio is in its simplicity. However, it has major drawbacks:

-The calculation of capital adequacy ratio in accordance with the rules of Basel 1. Experience has shown that there is no consistent relationship between banks tumble and the solvency ratio, which is supposed to reflect the ability to absorb shocks.

- Basel 1does not takes into account the effect of diversification in the loan portfolio. Risks are not only associated with the assets, but also how to its distribution which known as risk diversification. Thus, the distribution of risk is not taken into account; note that, this Diversification alleviates the size the overall risk.

-The methodology used for the weighting of assets, produce at best a simple measure and low relationship with the amount of exposure to credit risk. This methodology does not take into account the differences among bank clients who are classified within the same category. The sense that the risk weights associated with only the types (Categories) of Assets (syndication in other banks, advances to customers, investments in securities, investments in Real Estate). For example, a loan to a company with an AAA credit rating requires keeping the same percentage of capital (8%) to address the risks as BB Company, despite the big difference in the probability of default of the two differences classifications as it appears.

- In some types of transactions, Basel 1do not stimulates banks on the use of control methods of risk mitigation (RM). However, Basel 1 just allows reducing Capital Adequacy Requirements against cash collateral and guarantees of central governments.

2.2.3 Market Risk- Amendment to the Basel Capital Accord

In 1996 Basle Committee stated an important amendment to combine market risks on capital charges in banks trading books. The objective of this major amendment was to provide a clear capital cushion for pricing risks in which banks are exposed to. Eligible capital consists of shareholders' equity and retained earnings (Tier 1 capital), supplementary capital (Tier 2 capital) as defined in the 1988 Accord, and a new Tier-3 capital, consisting of short-term subordinated debt was added.

2.2.3.1 The Revised Cooke Ratio (Co): Minimum Total Capital

After the redefinition of the market amendment by including Tier 3 and market risk capital charge, the Cook Ratio has become:

Figure 2.4: The Revised Cooke Ratio (Co)

Co = (Tier 1 + Tier 2 + Tier 3)/ (CR + MR) ≥ 8%

Tier 1 – Core capital (according to Basel 1)

Tier 2 – Supplementary capital (according to Basel 1)

Tier 3 – Short – term subordinated debt (Market amendment)

CR – Credit risk represented by risk weighted credit assets (Basel 1)

MR - Market risk capital charge (Market amendment)

Source: Basel, 2000.

2.2.3.2 The New Basel Capital Accord (Basel II)

Basel 1 had focused on the total amount of bank's capital, which was important in reducing the risk of bank insolvency and the potential cost of the bank's failure for depositors on one side and the stability of the financial system on the other side. To increase the safety and sustainability of the financial system, after the deep systematic banking crisis of the 1990s which hit the banking industry in many countries, Basel Committee in 1999 has issued a proposal for Capital Adequacy (Basel II) to replace the 1988 Accord. The new accord is considered more risk- sensitive framework (see Table 2):

Table 2.2: Rationale for New Accord

Basel 1	Basel II Accord
Focus on a single risk measure	Emphasis on bank's own Internal methodologies, supervisory review and market discipline.
One size fits all	Flexibility, menu of approaches, incentives for better risk- management
Broad brush structure	More risk sensitive

Source: Utrecht University, 2010

The New Accord is based on three mutually strengthen pillars that allow banks and supervisors to strengthen the way to evaluate justly the various risks that bank might face (BCBS, 2006).

Figure 2. 5: The New Basel Accord: Pillars

Source: (American Society of Appraisers, 2006)

These pillars support each other to achieve their goal: reinforcement of safety and security of the financial system and the advanced financial markets in particular (Haddad, 2004).

2.2.3.2.1 Pillar 1- Minimum Capital Requirements

Capital requirements are the unified requirements for banks and other depository institutions. It specifies the level of liquidity required to be kept for a certain level of assets. In other words, it is a bank regulation that sets a framework on how banks must handle

their capital. These requirements, stipulated by the Bank for International Settlements (BIS), to ensure that institutions are not involved in or holding investments that reinforce the risk of default. In the New Accord, the Capital Adequacy ratio stills the same overall 8% minimum Capital requirement. The difference is that there are new ways of calculating the risk-weighted assets. There are optional methods of measuring risk and calculating the 'value at risk' (VAR). The amendment approach has two main elements: (1) changes in credit risk handling and (2) Introducing an outright handling of operational risk conduct or perform a measure of 'value at operational risk' into the denominator of the ratio. Basel II has three scales to calculate credit and operational risks, and two scales for market risk calculation. Each scale extends an improved risk sensitivity compared to Basel I. This moved away from the previous philosophy of 'one size fits all' and allows individual banks to select the approach most suited to their own situation (see Table 2. 3):

Table 2.3: Approaches to Measuring Value at Risk in the New Basel Accord

Level	Credit Risk	Operational Risk	Market Risk
1	Standardized Approach	Basic Indicator Approach	Standardized Approach
2	Foundation Approach	Standardized Approach	Propriety Approach
3	Advanced IRB Approach	Advanced Measurement	

Source: Zidan (the Author), 2013.

Table 2.4: the Three credit risk Approaches

Standardised Approach	Foundation Internal Ratings Approach	Advanced Internal Ratings Approach
Successor to 1988 Basel Capital Accord with some additional risk sensitivity through use of wider range of risk weights linked to external credit ratings. (Simple and Comprehensive levels)	Institution's portfolio is split by broad category of exposure. Institutions assign ratings linked to probability of default (PD). Other inputs set by the supervisor.	Similar to the Foundation Approach, but in addition to calculating PD, institutions also use their own estimates of loss given default (LGD) and of exposure at default (EAD). Much wider scope for credit risk mitigation.

Source: American Society of Appraisers, 2006

After all modification in 1999 on Basel 1 or the former Cooke ratio, a new ratio was agreed to be created. It officially replaced the Cooke ratio in 2006.

Figure 2.6: The McDonough ratio

Mc = (Tier 1 + Tier 2 + Tier 3)/ (Cr +Mr + Or) ≥ 8%
Tier 1- Core capital (according to Basel 1)
Tier 2- Supplementary capital (according to Basel 1)
Tier 3- Short-term subordinated debt (Market amendment)
Cr - Credit risk capital charge represented by risk weighted credit assets (Basel 2)
Mr - Market risk capital charge (Market amendment)
Or - Operational capital charge (according to Basel 2)

Source: Basel, 1996

2.2.3.2.2 Pillar 2- Supervisory Review of Capital

In the New Accord, the supervisory review process does not only mean guaranteeing sufficiency of capital at the banks to face business risks, but it also means, encouraging banks to practice optimum risk management methods. The committee realized the existing relationship between the value of capital which bank must keeps to face risks and the strength and effectiveness of risk management and bank's internal audit processes. However, we shouldn't consider the increase of capital as the only option available to deal with the growing risks facing banks. There are other means to consider tackling risks: strengthening risk management, implementation of internal limits, supporting and strengthening levels of reserves, provisions and improvement of internal controls. The capital shouldn't be considered an alternative for the lack of basic sufficiency in the supervisory process or risk management (Basel, Revised Framework, 2006).

2.2.3.2.3 Pillar 3 – Market Discipline (Disclosure Rules)

Market discipline means making accurate information (financial and non-financial) available at anytime, thus enabling all different partners in the banking industry to make

proper evaluations of banks' operations and risks involved in them. This means increase of degree of disclosure by banks of banks' capital structure, adequacy of capital, risk exposure and their accounting policies to evaluate their assets obligations and creation of provisions. This is in addition to banks' strategies in dealing with risk assessment processes and internal systems to estimate the required capital and all the quantitative and qualitative details about financial statuses and general performance. This also means motivating banks to care about safety systems, applications of risk management and building of a strong capital base to reinforce their potentials to face any possible losses in case of becoming vulnerable to risks. In this way, market discipline is a basic effective element to strengthen the safety and security of the banking sector.

To the ends of the aforementioned goals, the supervisors should have full powers to ask banks to disclose information in regulatory reports in an accurate and clear fashion to use, as a basis for the effective market discipline process. This should be through dialogue with senior management or through financial penalties if necessary (Basel Committee, International Convergence of Capital Measurements, Part 4, 2004).

2.2.4 PMA and Basel Regulations

The international developments in banking supervision started to pose greater challenges to the Palestinian banking system, and enforce it to the implementation of international standards of banking supervision. In this framework, the PMA has exerted great efforts in recent years to prepare for the implementation of these new standards, and to help banks achieve a smooth transition for the implementation of these standards. In order to promote financial stability, these efforts have resulted in raising and strengthening banks' capital, liquidation and tackling of weak banks, updating and developing the legal environment and supervisory instructions, preparing a time plan to fully implement the requirements of the Basel Committee, applying effective banking supervision criteria, and issuing a guide on corporate governance of banks. In addition, the PMA has showed great interest in the training of banking cadres in line with international developments in terms of banking supervision. The PMA monitors the sector with wide ranges of judicious instruments,

making the banking sector follows international standards. These tools include (a) required reserves ratios; (b) minimum capital requirements; (c) minimum liquidity ratios; and (d) limits on credit concentration and currency exposure.

In addition to these monitoring tools, the PMA continued to exert its efforts to strengthen banks' capital (paid up capital) and make them more able to cope with potential risks, in accordance with Directive Number 7/2009, which require all banks to raise their minimum paid-up capital from USD 35 million to 50 million. A new reserve requirement (a counter-cyclical fluctuations reserve) was introduced. According to this requirement, banks should add 15 percent of their net (after tax) income to their Tier I capital as an additional "bad times" buffer (IMF, 2011).

To strengthen various reserves of banks in order to face any risks the new Banking Law (Resolution Act No. 9 of 2010) stipulates the deduction of 10% of net profit per year for legal reserves, until it becomes equivalent to paid-up capital. These measures strive to bring the banking sector further in line with international standards.

According to the PMA, the Capital Adequacy Rate of local banks (Regulatory Capital to Risk Weighted Assets) was 21.5% in 2010. In spite of that, this indicator still reflects good and a higher level than the minimum specified by the PMA (12%), and is more than the minimum required by instructions of the Basel Committee (8%).

This process was part of the PMA's plan aimed to develop the banking system, enhance its immunity and its ability to withstand risks, expected and unexpected, especially in light of the circumstances and risks in the local environment, and the worldwide volatility as a result of the global financial crisis that continues to afflict many countries in the world. In addition, it is meant for enhancement of the internal and external competitiveness of banks operating in Palestine.

It should also be noted that the PMA has been preparing for the implementation of the requirements of the Basel Committee II in line with the Palestinian needs and conditions. The PMA was expected to begin implementing these requirements by mid 2012.

2.2.5 The New Basel III Accord

In 2010 the BCBS release a final version of new bank capital and liquidity standards, known as Basel III. In 2011a guidance was issued concerning the minimum requirements for regulatory capital tools. Basel III is a sequence of to the present Basel II framework. Some of aspects Basel III is implemented in 2013 and certain aspects will be implemented over several years. In order to help in the development of a bank capital plan that concur with the supervisory expectations, it was necessary for many parties to have a working understanding of the new Basel III standards (Sherman & Sterling, 2011). The Committee continues to work on certain aspects of the framework which may lead to additional changes in Basel III (see Appendix 2).

SECTION THREE
CREDIT RISK

2.3 Credit Risk in Banks

2.3.1 Introduction

Since credit risk continues to remains the largest source of risk for banking institutions, it is one of the most important areas of risk management, because the loan portfolio is the largest asset and primary source of bank's revenue.

The absences or the lack of proper management of such risk will results in significant losses to the banking institutions. The consequence of such losses not only disrupts the intermediation function of the institution affected, but also imposes large financial burdens on the government in recapitalizing such banking institutions and has negative impact on the economy as a whole.

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 term" (Basel, 2000). According to Duffie and Singleton (2003), credit risk also can be defined as "the risk of default or the decreasing in market value caused by changes in the credit quality of issuers or counterparties". In either case, the present value of the asset declines, thereby weaken the solvency of a bank.

Credit risk has always been an important and crucial issue in the banking business, because of the failure of few number of bank borrowers may originate huge losses for the bank, which may leads to financial problems affected the bank (Gestel and Baesens, 2008). According to Basel (2000), banks nowadays are confronting more and more credit risk in their operations and activities other than loans, such as foreign exchange transactions, acceptances, swaps and bonds.

2.3.2 Categories of Credit Risk

To obtain a better understanding on the nature of credit risk, it is vital to introduce the different forms of credit risk engaged in the financial activities before any additional discussion. Concerning the categorizing of credit risk, the literate has produced various criteria. For example, Gestel and Baesens (2008), suggest in their book that the two main types of credit risk are pre-settlement risk and settlement risk. According to Greuing and Bratanovic (2003), credit risk is categorized in consumer risk, corporate risk and sovereign or country risk. AL-Zobedi (2002), defined six types of credit risk, including default risk, counterparty settlement risk, counterparty pre-settlement risk, country or sovereign risk, legal risk and concentration risk. But nowadays, the legal risk considered and treated as independent or part of operational risk, it is more reasonably to be thought of as critical issues in managing credit risk rather than a type of the risk itself (Casu, et al., 2006). In the following illustration, only four types of credit risk will be highlighted.

1) Default Risk

According to Colquitt (2007), default risk is the risk that a borrower defaults and does not honor its obligation to serve debt. It can occur when the counterpart is unable to pay or cannot pay on time. The probability that the borrower or the counterparty will fail to pay its obligation over the life of the obligation or over specific time period in the life of the obligation such a year is called the probability of default.

2) Counterparty Pre-Settlement Risk

Pre-settlement risk can be defined as the possibility of loss due to the counterparty's default through the transaction period. Usually Pre-settlement risk occurs through long time periods, frequently rears, beginning from the time it is contracted until settlement (Gestel and Baesens, 2008).

3) Counterparty Settlement Risk

"Settlement risk is a risk that occurs in the interbank market and it refers to the situation where one party to a contract fails to pay money or deliver assets to another party at the settlement date" (Casu, et al., 2006).

4) Country or Sovereign Risk

Country risk is the risk that will adversely affects the firm's financial or commercial interests, resulted from political, economic and social conditions of oversea country. It relates to the negative effects resulted from deteriorating conditions such as political, economic and social instability may have on the returns generated from overseas investments (Casu, et al., 2006).

2.3.3 Identifying Credit Risk Exposures in Banks

According to Basel (2000), Exposure to credit risk has always been the primary and major source of problems in banks world-wide since granting credit is one of the main sources of income in commercial banks, both on and off the balance sheet needs to be managed well, or it may take the bank into large trouble or even bankruptcy. Therefore, it is essential to cover and highlight the possible credit risk exposures for most banks.

A) On-Balance Sheet Exposures

1) Loans

The major activity performed by commercial banks is granting loans. This activity is considered the major income-channel for most banks, but at the same time, it expose them to high default risk. The major types of bank loans are commercial and industrial, real estate, consumer and others. Commercial and industrial loans covered period's starts from a few weeks to several years for financing firms' working capital needs or credit needs respectively.

Nonperforming Loan Portfolio

According to Greuning and Bratanovic (2003), non-performing loans are those not producing income, and loans are frequently considered as non-performing when principal or interest is due and remain unpaid for 90 days or more. Thus the non-performing loan portfolio is a very important indication of the bank's credit risk exposure and lending decisions quality.

2) Debt Securities

Besides lending, investment in debt securities exposes banks to credit risks. Debt securities are debt instruments in the form of government securities, bonds, notes, certificate of deposits, etc, issued by different parties to raise capital such as, governments and large corporations. The probability that the issuer of these instruments will default always exists, resulting in the loss of interest or even the initial investment to banks which can affect the solvency of the bank negatively.

b) Off-Balance Sheet Exposures

Since the 1980s, it has been witnessed rapid growth in banks' off-balance-sheet exposures such as, swaps, forward rate agreements, banker's acceptance, etc. This growth is related to the progress in Deregulation and Technology which produces new opportunities for banks but in the same competitive pressures had increase among financial and non-financial institutions and increased new types of credit risk from the possibility of default by the counterparty on banks. Credit risk in off-balance-sheet exposures refers to the possibility of loss that a bank may incur on account of default by the counterparty in performing obligations or honoring commitments under agreements or contracts (Ghosh, 2012). In this part, some of the off-balance sheet credit exposures will be presented:

1) Derivatives Contracts

A derivative is a financial instrument whose value is based on one or more underlying assets and this value is affected by the fluctuations of the underlying assets. The most common types of derivatives are futures, forwards, options, and swaps. Using derivatives contracts by banks could be for trading purposes (hedging) or as dealers (non- trading purposes) that act as counterparties in trades with customers for a fee. When banks involve in derivative trades as counterparties with clients for a fee, conditions credit risk is likely to exist when banks increase their positions in derivative contracts (Saunders and Cornett, 2006). Since the counterparty risk in a derivatives transaction arise when the counterparty default prior to expiration of a trade and will not therefore make the current and future payments required by the contract, leaves the bank un hedged and having to substitute the contract at today's interest rates and prices, or exchange rates, which may be relatively

unfavorable (Gregory, 2011). Also hedging against the future uncertainty of interest rates and exchange rates by using Derivative contracts could have a favorable impact on total bank's risk.

2) Guarantees and Acceptances

A bank guarantee is a guarantee issued by the bank to ensure that the liabilities of a debtor will be met, in case if the debtor fails to pay its debt, the bank will perform as guarantor and cover it. While a banker's acceptance is an obligation by a bank to pay the par value of a bill of exchange at maturity (Basel, 1986). Guarantees and Acceptances are regarded as direct credit replacement, and the credit risk resulted is equal to that risk of a loan, since the bank obligated himself for standing behind a third party (Basel, 1986). Upon that, it is clear that there is a full risk exposure in these off balance sheet activities.

3) Loan Commitments

A loan commitment agreement is a contractual commitment by a bank to loan to a customer a certain maximum amount at given interest rate terms. The commitment contracts also define the period over which the customer will be able to utilize his contracted loan. Despite The bank will generate fee income for making these commitments to the borrowers, but it will also exposed them to contingent credit risk by setting predetermined interest rate on a loan commitment (Basel, 1986).Risk is entailed because the bank is locked into lending to a borrower who might suffer a decline in creditworthiness that would otherwise dictate either a higher interest rate or no loan at all (Saunders and Cornett, 2006).

4) Interbank Transactions

Banks usually transfer the wholesale volume of money payments through transfer systems. The funds message sent on the CHIPS network within the day are temporary, and then settled at the end of the day. Therefore, when prime fraud is occurred and has been found out in the bank's book during the day, which may result in instant shutting down, in which the committed payment will not be received by the counterpart bank and may not be able meet the payment commitments to other banks, leaving a serious trouble.

SECTION FOUR
GENERAL PRINCIPLES OF SOUND CREDIT RISK MANAGEMENT

2.4 General Principles of Sound Credit Risk Management

2.4.1Introduction

Credit risk continues to remain the major threats to any bank's performance and the largest leading source of bank's failure (Greuning and Bratanovic, 2009). Therefore, a sound credit risk management framework is a vital and critical to a healthy and profitable banking institution. Also, as it has been mentioned before, the consultative paper issued by Basel (2000) (Principles for the Management of Credit Risk) reported that, lax of credit standards for borrowers and counterparties continues and remain to be the primary reason for dangerous banking problems. All such evidence demonstrate the extremely crucial role credit risk management function plays in the whole banking risk management approaches and the sustainable success of the financial institution. So the development and establishment of credit risk management system by the management of the institution is very important to ensure sound and suitable of a financial institution's business.

2.4.2 The Goal of Credit Risk Management

One of the major difficulties and threats facing financial institutions over years is continued to be poor credit risk management, including the following (Basel, 2000):

- Poor or absence of credit standards;
- Lack of focusing on the economic changes that may affect the financial position or the borrower's financial capacity;
- Improper risk pricing;
- Immoderate credit growth;
- Ineffective control to reveal any credit fraud;

- Failure in monitoring borrower financial position or collateral.

Effective credit risk management will help to eliminate most of the problems presently experience by financial institutions. Credit risk often does not occur in isolation. A risk event may cause both market and credit risks. For example, a rise in interest rates could weaken the Creditworthiness of the bond issuer thereby increasing the credit risk to an institution holding those bonds. At the same time, the fall in the value of the bond raises the market risk for the institution (issuer). An institution should therefore choose and follow a holistic approach to assessing credit risk and ensure that credit risk management is part of an integrated approach to the management of all financial risks. Any financial institution should develop a risk management framework to identify, monitor, measure and control credit risk effectively and sufficiently. Also it should keep adequate capital to meet potential credit risk, and comply with all effective and soundness rules and regulations (Monetary Authority of Singapore, 2006).

Therefore, the goal of credit risk management is to achieve the maximum risk adjusted rate of return by maintaining credit risk exposure within acceptable levels or parameters in order to provide a clear picture and framework of understanding the impact of credit risk management on banks profitability. An effective credit risk management is a crucial component of an extensive approach to risk management and essential to the long-term success of any banking organization (Basel, 2000).

2.4.3 Principles of Credit Risk Management

According to Colquitt (2007), the credit risk strategy adopted by financial institutions is extracted from its credit culture, by which how risks are managed and how the institutions risk tolerance are defined. This formulates the basis for how credit risk is monitored, controlled and responded to. This strategy must be clearly understood by everyone in the credit administration in order to pursue new business opportunities. The many strategies and methods followed or practiced by banks to manage their credit risk depend on the institution's strategic objectives, the diversity and complexity of their credit activities. Reviewing the general principles of credit risk management can provide an obvious picture

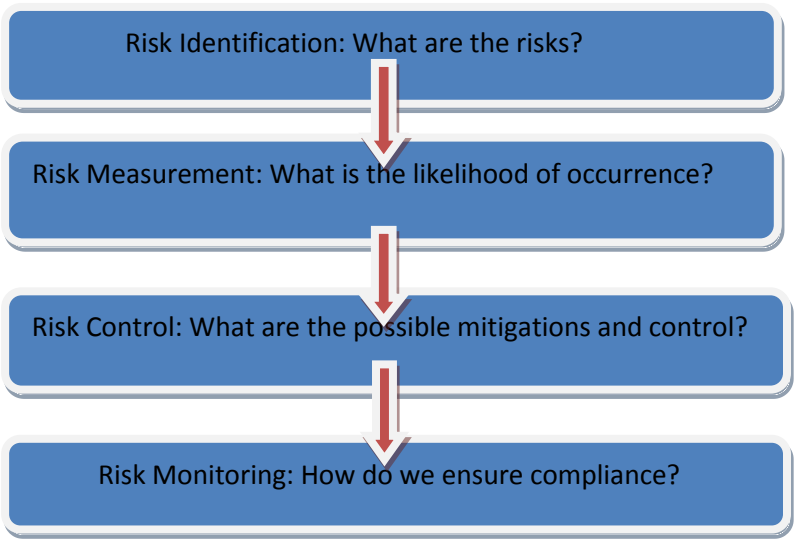
on how banks manage their credit risk. Therefore a complex or sophisticated credit risk management method is not necessarily suited to all financial institutions (Basel, 2000,).

This part of the dissertation is based on the consultative paper "Principles for the Management of Credit Risk" issued by Basel in September 2000 (see appendix 3). The sound practices set out in this document specifically address the following areas:
(1) Establishing an appropriate credit risk environment; (2) Operating under a sound credit granting process; (3) Maintaining an appropriate credit administration, measurement and monitoring process; and (4) Ensuring adequate controls over credit risk. A comprehensive credit risk management program will address these four areas, despite the different credit risk management practices followed by banks as mentioned before.

2.4.3.1 Establishing an Appropriate Credit Risk Environment

Credit risk management can be defined as "the process of identifying, measuring, controlling and monitoring credit risk" (Coyle, 2000).

Figure 2.7: **Credit Risk Management Process.**



Source: Zidan (the Author), 2013

Establishing proper credit risk management environment depends largely and primarily on suitable identification of credit risk and the development of inclusive credit risk strategy

and policies. The credit strategy of any bank should be a reflection to the bank's tolerance and appetite for handling risks and profitability levels the bank is expected to achieve. Approving and reviewing the credit risk strategy is the responsibility of the institution board of directors (Basel, 2000). This strategy includes number of aspects:

- Depiction of bank's tolerance toward credit risk;
- Ensure that bank's capital is maintained at sufficiently levels to meet bank's overall credit risk exposure;
- The implementation of sound credit principles to speed up the identification, measurement, monitoring and controlling credit risk;
- Identification of target markets, including levels of diversification and concentration tolerances.

The responsibility of implementing the credit risk strategy that established by the board is lies on the senior management, in accordance with establishing policies and procedures for identifying, measuring, monitoring and controlling credit risk. These policies should reflect credit risk in bank's activities; this includes the following aspects (Basel, 2000):

- Bank's credit-granting activity is conforming to the developed strategy;
- Procedures for implementation strategy should be written; -
- Clear identification of responsibilities for loan approval and reviewing process; -
- Bank's credit-granting and management function should have periodically internal assessment

Also the senior management of a bank is responsible for developing and establishing written credit policies as a part from the overall credit risk management strategy which reflects and express the bank's credit risk philosophy. This credit risk management strategy should be consistent with prudent practices, regulatory requirements, and adequate for the nature and complexity of the institution's activities concerning the conditions and guidelines for the granting, maintenance, monitoring and management of credit, at both the individual transaction and portfolio levels. To conclude, establishing an Appropriate Credit Risk Environment could be summarized in the following (Basel, 2000):

- Clear monitoring and controlling of credit risk management all over the bank;
- Risk origination and policy setting should have clear segregation;
- Top management should define and communicate risk strategy to all levels;
- Top management should has visible and strong commitment;
- Periodic employee training;
- Relationship between business units should be strong

2.4.3.2 Operating Under a Sound Credit Granting Process

Establishing a sound credit granting process requires the development of well-defined credit granting criteria in order to estimate the creditworthiness of the borrower or counterparties and pick up the preferred ones. A bank's credit criteria should be designed to define the types and characteristics of its preferred borrowers or counterpart and they should set out who are eligible for the credit and under what terms and conditions the credit can be granted (Basel, 2000).

In other words, making credit risk analysis by evaluating the credit-worthiness of the borrower or the counterparty, to have sufficient information to have an overall assessment of the true risk profile of them and to make an a appropriate credit-granting decision (Monetary Authority of Singapore, 2006).

Credit risk analysis is a crucial part of the banks ex ante credit risk management. This credit analysis process or credit assessment process major goal is to identify and control risks by determining the borrower's probability of repaying the debt. This is achieved through analyzing all factors surrounding the borrower's ability or capacity and willingness to repay the debt, such as, borrower's income, balance sheet, cash flow statements, the purpose of credit, payment capacity, adequacy of collateral and capital adequacy. Another major goal of credit analysis is to have an understanding of the borrower's primary source of funds and secondary source of funds to repay the debt (Colquitt, 2007).

Most banks have a separate credit risk analysis department. a good credit risk team will use qualitative and quantitative methods to assess credit risk. Qualitative approaches or models aim to determine to what extent the potential borrower is willing to repay its obligations on

time which is measured outside the financial statements on the one hand and quantitative approaches aim to determine the potential borrower's ability to repay its obligations on time which is measured through financial statements on the other hand (AL-Zubeidi, 2002). The use of different approaches and models will be determined by the information the bank can gather on the potential borrower and depending on the type of credit exposure and nature of the credit relationship to date.

These models are not mutually exclusive; the analyzer may use more than one to reach a credit pricing or loan quantity rationing decision. In general, if a bank is unable to obtain information on a potential borrower (for example annual financial reports), it is likely to adopt qualitative approach to evaluating credit risk or to evaluating the credit worthiness of the potential borrower, taking into account factors such as, the wealth of the borrower, employment history, earning volatility, borrower credit history, and future economic conditions if it will affect the borrower ability to repay (Heffernan, 2005).

A well known approach used by banks in retail loans as qualitative assessment of credit risk and analyzing the borrower creditworthiness what is so called "**5Cs**" of credit analysis (Al- Zubeidi, 2002)):

- Character: Is the borrower trustworthy with regard to repaying the loan and generating a return on the investment? (Reflects the degree of borrower willingness to repay the loan, taking into consideration variables such borrower education and experience...).
- Capital: What assets or capital does the borrower have? Represents the owner's investment in the business, the owner has to have a significant investment in the business. The loan officer will look carefully at the amount and quality of capital the owner has to offer.
- Capacity: Is the borrower has the ability to repay the loan? Refers to how and when you intend to repay the loan and from where? This is an indication of the amount of the borrower cash flows and the timing of cash flows with regard to repayment. Capacity also refers to the borrower credit history. Does the borrower have a good credit score?

- Collateral or Security: Can the borrower put up security, which will be owned by the bank in the event of default)? Collateral represent an additional form of security to the bank in case of default by the borrower. Collateral may be buildings, equipment, shares, account receivables owned by the borrower. Collateral may also include a guarantee by someone else that, in case the borrower cannot repay the loan, the other party will. Collaterals as credit risk mitigation technique will be discussed in details later.
- Conditions: What is the state of the economy? How robust will the borrower be in the event of a downturn? Conditions refer to the overall economic climate and external environment surrounding the bank and the borrower. During a recession or periods of tight credit, it is obviously more difficult for the borrower to repay a loan and more difficult for a bank to find the funds to loan. Also conditions refer to the intended purpose of the loan. Are you buying new equipment for expansion? Are you replenishing working capital to prepare for seasonal inventory buildup? Why do you need the money?

The use of this credit analysis approach in credit scoring, usually applied when there is inadequate information and data related to the borrower.

Quantitative approaches or methods to credit risk analysis requires the use of financial data and predict the probability of default by the potential borrower. Different models and approaches are used under credit rating (internal and external rating) and credit scoring models to measure and mitigate the obligor's credit risk. Either the credit scoring or credit rating in the form of qualitative or quantitative approaches is both aims to measure and mitigate credit risks (Crouhy, Galai and Mark 2006).These models will be discussed later in credit risk measurement section as a part from this thesis.

In addition, if the borrower or the counterparty dealt with a bank for the first time, the integrity and reputation of them should be taken into consideration as well as their legal capacity to assume the liability. But a bank should not grant credit simply because the borrower or the counterparty is familiar to the bank or has high reputation. In order to avoid dealing with parties engages in fraudulent activities rigorous policies must be in

place. This could be done in many ways, such asking for references from known parties and access credit registries.

Granting credit by banks exposes them to risks as well as generates profits, so Banks should estimate the risk-return relationship in any credit. To evaluate and determine the credit terms, banks need to estimate the risks versus expected return, taking into account other aspects such collateral and restrictive covenants. Banks should take into consideration in evaluation risks, the negative scenarios and their possible impact on borrowers or counterparties. One of the most problems facing banks is the possibility not to price credit properly which affect the expected return (Basel, 2000). During structuring credit facilities a bank should estimate the amount and timing of the cash flows as well as the financial position of the borrower and intended purpose of the funds to make sure that the credit is used for the purpose it was borrowed. It is extreme important that due consideration should be given to the risk reward trade –off in granting a credit facility and credit should be priced to cover all embedded costs. Relevant terms and conditions should be laid down to protect the bank's interest. Also the bank should not depend that much on collaterals / covenant. Despite the importance of collaterals held against loan, yet these should be considered as a shield (second-line of defense) providing protection in case of default, primary focus should be on the borrower's debt payment capacity and willingness to repay the loan (first-line of defense) (Basel, 2000).

To operate under a Sound Credit Granting Process, a bank should develop an effective risk measurement system such information systems and analytical techniques to measure risk inherent in credit requests and support accurate approval/rejection decisions (credit rating tools for corporate customers and behavioral score card for retail customers) consistent with the nature, size and complexity of the bank's activities. Effective measures of potential future exposure are essential for the establishment of meaningful limits.

In order to maintain a sound credit portfolio "Banks should have a clearly-established process in place for approving new credits as well as the amendment, renewal and re-financing of existing credits" (Basel, 2000). This achieved through establishing formal transaction evaluation and approval process for the granting of credits.

2.4.3.2.1Credit Limits and Credit Concentration

To ensure diversification in all areas of the bank‘s activities that involve credit risk, exposure limits are necessary to adopt by the bank. The establishment of exposure limits on single counterparties and groups of connected counterparties is considered an important element of credit risk management process. The size of the limits is influenced and depends on many factors such, the credit strength of the obligor, real requirement of credit, economic conditions and the bank’s risk tolerance. Appropriate limits should be set for respective products and activities.

2.4.3.2.2 Credit Concentration

Concentration within the bank’s credit portfolio remains and continues to be major source of credit-related problems in banks. Concentration risk arises whenever considerable number of credits has the identical risk characteristics, such as granting credits to a single borrower or group of borrowers have the risk characteristics and to enterprises in the same industry or related to the same economic sector. In other words, concentration of credit risk could arise when the bank's credit portfolio is concentrated in particular product, industry, social and economic sector.

The geographic location, lack of access to economically different borrowers and the commercial area of the bank could make credit concentrations difficult to avoid. But the bank should establish appropriate limits to minimize and reduce concentration risk at an acceptable level through continuous efforts of identifying and measuring the concentration risk in its credit portfolio. In general the common Ways or methods used to check on and reduce the credit concentration risks include the following:

- Adopting a pricing policy for additional risks.
- Increasing the capital kept to compensate for high levels of risks.
- Participation in loans
- Securitizing or bonding the loans
- Using credit derivatives

2.4.3.3 Maintaining an Appropriate Credit Administration, Measurement and Monitoring Process.

Ensuring appropriate documentation and approvals of credit are in place before the disbursement of financial facility is a significant element in maintaining validity and soundness of a bank (Basel, 2000). Credit administration function is essentially to support and control granting and servicing credit once it is granted. This function is performed by the business units and often with the help of credit administration support team, depending on the size and complexity of the bank activities. In large banks the responsibility of this function is allotted to various departments, in contrast to small banks where few employees might handle many areas of credit administration function. An ideal credit administration unit usually includes the functions of credit documentation, disbursement and monitoring; loan repayment; and maintenance of credit files, collateral and security documents

Credit monitoring is one of the most important functions which banks take to face credit risks and check on them. Setting up a monitoring system on credit operations, a system characterized by efficiency and effectiveness and applied by the bank, helps to reduce credit risks and provide protection for it from vulnerability to any of these potential risks Credit monitoring is defined as a tool or mechanism to review or audit credit and it includes credit auditing and checking to determine the extent of the match between existing and awarded credit and the policies and procedures approved to guarantee achievement of a number of objectives such as (Joseph, 2006):

- Continuous improvement of the quality and structure of the credit portfolios;
- Review and implementation of granting processes and verifying extent of their consistency with what has been approved;
- Getting feedback that guarantees verification of the extent of respect of legislations, laws and regulations effective in the field of credit;
- Estimating levels of credit portfolio risks.
- Receiving early warning signals concerning weak accounts, maintaining them and suggesting necessary solutions;

- Giving appropriate recommendations which guarantee corrective procedures, thus improving the quality and management of credit.

An effective credit monitoring system will include measures to (Basel, 2000):

- Making sure the bank has understood the present financial conditions of the borrower;
- Consistency of control with the financial aspects and operations pledges;
- Evaluation of guarantees in terms of their link with the present circumstances of the borrower and;
- Identifying the credit problems at the appropriate time and before something happens.

According to Basel (2000) twelfth principle, the maintenance of appropriate credit management and monitoring procedures and standards, banks must have monitoring system over the structure and type of the credit portfolio, taking into consideration the credit concentrations which occur as a result of the credit portfolio that have a high level of direct and indirect credit. In this respect, Credit monitoring or supervision should concentrate on some important aspects such type of credit facility, geographic area and type of guarantee. An important element of a sound credit risk management, involve taking into account the possibility of any changes in the economic situation when assessing credit portfolios, and also assessing credit risk exposure under stressful situations (Bas el, 2000).
Stress testing used as a tool to assess the impact of market disruption on the bank's credit portfolio and assessing the bank's ability to bear such changes. Three fields that banks can inspect: liquidity position, economic or industry recession and market-risk events.
The bank's stress testing policy should be documented after being approved by the board of directors and senior management. Tests results should be periodically reviewed by top management and proper action should be taken when tests results exceed agreed tolerances. In general, in the preparation of stress testing, the bank should take into consideration a number of aspects (Monetary Authority of Singapore, 2006):

- The availability of information and historical data for the bank credit portfolio in particular non-performing loans.
- To have robust management information system to support such stress testing, taking into consideration both market and operations risks.
- The availability of reliable and realistic database relied upon in the preparation of the stress tests.
- The survey of internal/external environment related to the credit portfolio in order to determine risks factors and sources to find solutions for such risks.

2.4.3.4 Ensuring Adequate Controls over Credit Risk

According to Basel (2000), Banks management must develop a system of independent and continues appraisal of the bank's credit risk management processes. The results of such review should be informed to board of directors and senior management. For adequate and sufficient credit supervision, banks management must ensure that credit-granting task is managed well and consistent with discreet standards and internal limits. To ensure that policies, procedures and limits are reported in a timely way to the suitable level of management for action, banks should develop, execute internal controls and other practices (Basel, 2000). This includes the following aspects:

- The type of credit (credit quality) must be determined at an early stage to allow more options to develop credit and macro portfolio.
- The bank must have preventive and regulatory procedures associated with specific events.
- The credit policy must be clear when it comes to the determination of the mechanism the bank has to adopt in tackling the credit management problems.

Credit risk management practices may be different among banks, depend on the nature and degree of complication of bank's credit activities, it still reflect a comprehensive credit risk management program.

2.4.4 Credit Risk Measurement

The measurement of credit risk is a crucial element in credit risk management. In recent years, a revolution has been brewing in risks as it is both measured and managed. With the dramatic development of technology during the last 20 years, new technologies and ideas have emerged among a new generation of financial engineering professionals who are applying their model-building skills and analysis to this area, credit risk measurement evolves greatly (Saunders and Allen, 2002).The question arises here, why credit risk measurement becomes so crucial in the area of credit risk management? There are many reasons for this sudden interest (Saunders and Allen, 2002):

- Structural and permanent increase in bankruptcies, accurate credit risk analysis becomes more significant and crucial than before.
- The expansion of capital markets (small and med-size firms have been included), increase risk levels, since small and weak credit ratings borrowers looking for financing left behind.
- The large completion in finance markets for low-credit borrowers that have been left behind, reduce the interest margin or spread which become very thin.
- Declining and volatile values of collateral. The weaker and the more uncertain collateral values are, the riskier lending is likely to be.
- The growth of off-balance-sheet derivatives increase the need for more credit analysis and credit risk measurement becomes critical.
- The technology revolution raises the opportunity to test high-powered modeling techniques.

Generally speaking, measuring risk is about an attempt to acquire several measures of the dispersion of potential future outcomes, and the concentration of risk measurement is often on negative or downside outcomes rather than the positive side of outcomes (Lowe, 2002). Based on that, risk measurements tend to focus on the likelihood of losses, rather than describing the entire distribution of possible future out comes. In the following part, tow

categories of methods for bank risk measurement, credit rating and credit scoring will be explained.

2.4.3.1 Credit Risk Rating

Since credit risk remains the main source of financial risk in the banking industry and exists in almost all income- generating activities, banks should have a policy to develop, review and implement a credit risk rating system where appropriate. Such a system should be able for the assessing and prediction the borrower creditworthiness that reflects the obligor probability of default. According to Moody's (Rating Agency), credit rating is a view of the credit quality of the individual commitment or the issuer credit worthiness.

But in order to determine the obligor ratings, banks are required to consider some aspects related and surrounding of the borrower such as (Bank of Pakistan, 2008):

- Financial status of the borrower such economic and financial situation, payment ability, profitability leverage and cash flows.
- Ownership structure and quality of internal controls and assessment of the willingness to pay.
- Nature and purpose of loan, structure of collateral and product type.
- Nature of collateral such quality, liquidity, market value and legal status of rights, Legal enforceability.
- Other aspects such Country risk, comparison to external ratings and credit information from other sources.

For banks, both the internal credit rating and the external one are involved in their credit risk assessment.

A) Internal Credit Ratings

After the development and expansion of banks activities, the number of their counterparties has significantly increase, and their credit-related businesses have become more diverse and complex, internal credit ratings has become an increasingly important element of credit risk management and reflect the risk properties of the bank loan portfolio (Treacy and

Carey, 2000). The internal ratings system becomes an important issue for banks, particularly after the latest recommendation by Basel II (2006).

For an effective credit management and monitoring procedures, banks have to establish and employ an internal risk rating. This system should be harmonious with the nature, size and complication of bank's operations. These procedures and standards include the following aspects (Basel, 2000):

- Internal rating systems of risks should achieve a number of objectives:

1- Differentiate between degrees of risks for different types of credit
2- Determining all traits and characteristics of the credit portfolio.
3- Determining concentration of risk areas.
4- Identifying the credit problems.
5- Proper credit pricing consistent with credit risk levels.

-Internal rating system must show a response to the potential risk indicators affecting credit.

-Frequent review and this must be at the beginning (upon approval of credit awarding); it must be regular and periodic (upon credit implementation) and whenever the borrower's circumstances change whether in a positive or negative direction.

-Link between responsibility of controlling and assuring work of ratings and credit control and review job.

-The credit review task is tested periodically through independent credit groups.

It should be mentioned that the institution's employee's judgment and there experience play crucial role than relying largely on any mathematical methodology used as internal rating systems.

B) External Credit Ratings

A credit rating agency serves as an information intermediary that provides simple and dependable estimates of the credit risk. Such information is highly valuable for various parties such as investors that save time and can invest according to their risk appetite. Most of these rating agencies provide a measure of the long-term view of 'strengths and

weaknesses, opportunities and threats' (SWOT) of firms (see table 2.5).This long-term perspective implies a lower sensitivity of their ratings to short-term fluctuations in credit quality changes (Altman and Rijken, 2004).

The external credit assessment institutions (ECAI) such as Standard & Poor, Fitch and Moody's play a key role in pricing credit, since in the standardized approach to credit risk of Basel II Accord (2006), suggests that banks are allowed to score or place assets into weighting groups according to ratings from qualified external credit rating agencies (see table 2.5) and they can act as a benchmarking partner to measure and evaluate the quality of the internal rating systems used by banks (Gestel and Beasens, 2007). Furthermore, Banks could rely on external credit ratings when they don't have enough information or data about debtors or don't have qualified and experienced personal.

It should be mentioned that both Bank of International Settlements (BIS) and the International Monetary Fund (IMF) have recently show the danger of overdependence on external credit agencies, related to the failure of these rating agencies to provide accurate, timely ratings. This overdependence was one of the primary causes of the latest international financial crisis (Woo, 2011).

Table 2.5: Comparison of long-term rating scales between credit rating agencies

Credit quality	Credit rating agency		
	Moody's	S&P	Fitch
		Investment grade	
Highest credit quality	Aaa	AAA	AAA
High credit quality	Aa1 to Aa3	AA+ to AA-	AA+ to AA-
Strong payment capacity	A1 to A3	A+ to A-	A+ to A-
Adequate payment capacity	Baa1 to Baa3	BBB+ to BBB-	BBB+ to BBB-
		Speculative grade	
Possibility of credit risk	Ba1 to Ba3	BB+ to BB-	BB+ to BB-
Significant credit risk	B1 to B3	B+ to B-	B+ to B-
High credit risk	Caa1 to Caa3	CCC+ to CCC-	CCC+ to CCC-
Default is likely	Ca	CC	CC
Default is imminent	C	C	C
In Default	-	D, SD	DDD, DD, D

Source: Basel Committee on Banking Supervision (2000) and websites of the three rating agencies.

2.4.4.2 Credit Scoring Systems

Credit scoring system is considered one of the first scientific, statistical, automated models and official approaches for prediction and estimation of credit risk for individual borrower. This approach comes out in response to the increased volume of applications of small loans (Marques, 2008). Most of financial institutions and insurance companies use these rating models to help them in evaluating and reducing risks associated with the submitted credit application.

The basic theory which these credits scoring system are based on is to discover a number of indicators and factors. Each indicator or factor is given a certain weight, thus helping these banks to evaluate the credit applications and enabling it to make the right lending decision (Rose and Hudgins, 2005).

The importance of the credit scoring system springs from being one of the ways used in evaluating clients' credit risks and predicting delinquent risks and default of payment. This system depends on historical data based, in its foundation, on a bank database which describes credit problems and risks which had faced the bank in the past (Rose and Hudgins, 2005). In the evaluation of borrowers' credit applications submitted, the credit scoring system depends on a number of variables such as age, sex, marital status, place of living, client's profession, time of work, extent of job security, house ownership or rent client is living in, borrower's credit rating, length of borrower's stay at current address, number of borrower's dependents, extent of borrower's keeping of credit balances, degree of commitment, previous experiences with the borrower and income at disposal (Rose and Hudgins, 2005).To conclude, credit scoring aim to quantify the forecasted values of probability of default (PD), in order to identify and to quantify the borrower's characteristics that determine which variables involve a higher default rate.

2.4.4.2.1 A classical Example of Credit Scoring: Altman's Z-Score.

The Altman (1968) **Z-score** model is derived from discriminate analysis and is used for larger corporations; based on financial/accounting ratios. Banks that employ Z-score model as prediction tool depend on that score, either the loan is granted or it is refused. The higher

the *Z* score, the lower the probability of default; if *Z* is lower than 1.81, the default risk is considered too high and no loan is made. If Z score is higher than 2.99, the default risk is considered too low and the corporate is healthy.

The model is based on the corporate accounting data by calculating the financial ratios used by analysts to assess and evaluate the solvency of the business firm to differentiate the healthy one from a high probability of bankruptcy:

Z- Score = Z= 0.717X1+ 0.847X2+ 3.107X3+0.420X4+0.998X5

The variables that best discriminated between healthy and bankrupt companies were:

$\mathbf{X_1}$ = Working Capital /Total assets.
$\mathbf{X_2}$ = Retained Earnings / Total assets.
$\mathbf{X_3}$ = Earnings before interest and tax (EBIT) / Total assets.
$\mathbf{X_4}$ = Market Value of Equity / Total liabilities.
$\mathbf{X_5}$ = Sales / Total assets.

2.4.4 Basel II Credit Risk Measurement

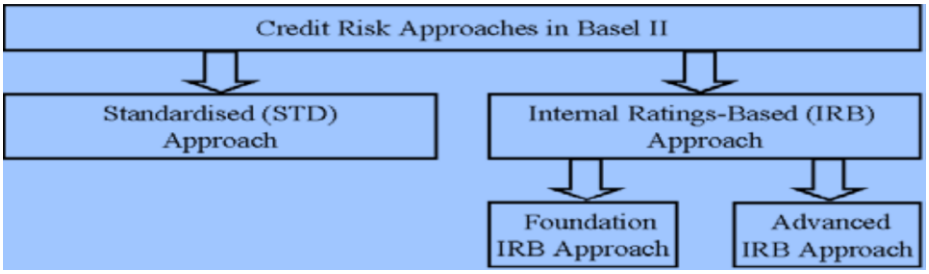
In response to Basel I's critics, Basel II in its first pillar which known as "minimum capital requirements" creates a more sensitive measurement of a bank's risk-weighted assets and tries to eliminate the ambiguity in Basel I that allow banks to take on additional risk while cosmetically satisfy to minimum capital adequacy requirements. Its first mandate is to broaden the scope of regulation to include assets of the holding company of an internationally active bank. This is done to avoid the risk that a bank will "hide" risk-taking by transferring its assets to other subsidiaries and also to incorporate the financial health of the entire firm in the calculation of capital requirements for its subsidiary bank (Balin, 2008).

The Basel II framework defines three different approaches for measuring of credit risk**:**

- **Standardized approach**
- **Internal ratings based approach: Foundation**
- **Internal ratings based approach: Advanced**

Each of these approaches offers different risk-sensitivity and complexity for the bank.

Figure 2.8: Credit risk approaches to credit risk in Basel II



Source: Benzin, et al., 2004.

2.4.5.1 Standardized Approach to Credit Risk

The standardized approach is the most simple and traditional among the three approaches in measuring credit risk. This approach increase the risk sensitivity of the capital framework by pointing out that the same credit category includes different risks. Based on that, banks are required to grade their credit risk exposures under different groups such corporate loan, retail loan and residential mortgage loan. In other words, providing a fixed risk weight for each group which supported by external credit assessment to enhance the risk sensitivity with respect to the weighting. (Sherwood Associates Limited, 2004).

2.4.5.2 Internal Ratings-Based (IRB) Approach:

Basel II proposes and encourages two alternative approaches toward risk-weighting capital, known as Internal Ratings Based Approach (IRB). These approaches are Foundation IRB approach and Advanced IRB approach. These approaches encourage banks to create their own internal systems to rate risk with the help of regulators.

Banks that use Foundation IRB approach have to retain capital in possession for operational risk, equal to a fixed percentage of the average total income in the last three years and exclude the year in which the total income of the bank is zero or a loss, the average is calculated for the last two years. And if the bank has a loss for two or more years of the last three, the second pillar of the agreement would be applied which entitled the Supervisory Authorities to determine the retained Capital Requirements to cover

operational risks (Balin, 2008). According to banks that the Advanced IRB approach, the bank's legal Capital equal to risk measures generated from the bank's internal system to measure operational risks, using advances quantitative and qualitative measures under Regulatory Authority Approval.

The use of the two IRB levels applies to corporate, sovereign and inter-bank exposures. For retail exposures only the Advanced IRB approach applies. Retail exposures are divided into three primary categories: (1) exposures secured by residential mortgages, (2) qualifying revolving retail exposures (such as credit card relationships), and (3) other retail exposures. A separate risk weight is specified for each category.

The Foundation and Advanced IRB approaches are based on four parameters, calculated by the bank's internal methods. The four input parameters are summarized in Table 2.6:

Table 2.6: Input Parameters for IRB Approaches to Credit Risk Measurement

Input Parameter	Foundation IRB	Advanced IRB
Probability of default (PD)	Provided by bank based on own estimates	Provided by bank based on own estimates
Loss given default (LGD)	Supervisory values set by the Committee	Provided by bank based on own estimates
Exposure at default (EAD)	Supervisory values set by the Committee	Provided by bank based on own estimates
Maturity	Supervisory values set by the Committee or At national discretion, provided by bank based on own estimates (with an allowance to exclude certain exposures)	Provided by bank based on own estimates (with an allowance to exclude certain exposures)

Source: Sherwood Associates Limited and Id Risk Limited (2004).

1) Probability of Default (PD)

Credit risk can be defined as the loss that results from borrower's inability to repay the loan. A major cornerstone in the credit risk modeling is the probability of default. "The probability of default (PD) per rating grade represents the average percentage of obligors that default in this rating grade in the course of one year" (Basel, 2006). In other words (PD) is the likelihood of a default (a loan will not be repaid and falls into default) over a particular time horizon. Generally speaking, the higher the default probability a lender estimates a borrower to have, the higher the interest rate the lender will charge the borrower (as compensation for bearing higher default risk).

Many methods are used to estimate the probability that a borrower will default. There are three main approaches to estimate an obligor's probability of default:

- Internal default experience (the analysis of borrower's financial statements can highlight problems of cash flows, profitability and liquidity, that can provide an early signs of default probability.
- External rating.
- Market prices (models based on market prices and the market value of the borrower's equity are used to measure PDs.

In the calculation of the PDs for the borrower or the counterparty some aspects should be taken into consideration by the bank or a lender such as, the historical data, risk profile & nature of investment, financing of counterparty and business cycle.

2) Loss Given Default (LGD)

LGD is a measure of the value of loss in the investment portfolio that accompanies the occurrence of tripping (Basel, 2001). In other words LGD is the possible size of loss on the exposure, expressed as a percentage of the exposure. Loss Given Default is determined in one of two ways:

1-Under the foundation methodology, Supervisory Authority impose specific percentage of losses that may arise from the borrowers failure in the repayment capacity. In determining the percentage of losses, the banks should take into account collateral value, which the bank can liquidate in case of borrower's failure (Basel, 2001).

2- Under the advanced methodology, the bank determines the losses arise from the borrowers failure for each loan individually, taking into account in calculating the size of loss that may result from non-payment (borrowers default) to use its own estimates, and be ready to meet the capital requirements at the discretion of the regulatory authorities. The size of losses for granted facilities is measured by the size of the principal (basic loan) minus the present value of recoveries of the loan.

3) Exposure at Default (EAD)

EAD is determined by the estimate value of exposure of syndication risk, calculated as:

For items On-Balance- Sheet: Take into account the exclusion of collateral in the form of deposits for granted credit.

For items Off-Balance-Sheet: Risks are calculated for items Off-balance-Sheet by multiplying each item by Credit Conversion Factor (CCF) which its value determined according to the type of credit facility.

4) Maturity

Used in some cases, when a clear system to modify the maturity of investments is available in the bank, and not reliance on maturity contractual when estimate the size of required capital.

To calculate the credit risk capital of financial institution, probability of default (PD) - along with loss given default (LPD) and exposure at default (EAD) are used:

Expected Loss (EL) = EAD*LGD *PD

Or, if expressed as a percentage figure of the EAD, as

Expected Loss (EL) = PD * LGD.

SECTION FIVE

CREDIT RISK MITIGATION AND TRANSFER

2.5 Credit Risk Mitigation and Transfer

2.5.1 Introduction

The major concern facing risk management over years is that counterparties will failure to repay their obligations. This concern and worry arise from the fact that credit risk still stays the major risk threats financial institutions. Credit institutions have always been busily looking for new innovative solutions in risk mitigation techniques.

The last step for any kind of risk management is to mitigate and transfer the risk in order to avoid or minimize losses resulted from this type of risk (credit risk) and reduce the costs of raising external capital that the bank need it in its operations (Basel, 2008. Basel II offers two wide forms of credit mitigation techniques, funded credit protection and unfunded credit protection.

While the concept of unfunded credit protection, includes an unsecured obligation of a third party. Under this concept as credit risk mitigation technique, creditworthy party more than the original borrower guarantees the transaction, this results in reducing credit risk the bank face. Unfunded credit protection includes guarantees and credit derivatives" (Basel, 2006).

In this context, many methods are available whether its traditional or newer methods adopted by financial institutions as credit risk mitigation techniques (Neal, 1996). In this section, all those essential ways for minimizing credit risk will be covered.

2.5.2 Traditional Methods for Controlling Credit Risk

1) Accurate Loan Pricing

One of the most crucial side of asset/liability management (ALM) is loan pricing, since the level of returns, credit risk and capital adequacy are largely affected by loan pricing decisions. Loan pricing is considered one of the major factors affecting the level of profits earned by the bank, that's why the bank's management must adopt and follow good pricing policy in order to achieve its goals. Upon the importance of loan pricing on the bank's success and profitability, the bank's board of directors establish a formal policy that directs and controls pricing decisions, this policy should be reviewed at least annually for adequacy and to ensuring it meets the bank's overall pricing objectives, earnings projections, and optimum capital levels. Monitoring may be completed on a broad, bank-wide basis, or may be focused on the pricing decisions made by individual loan officers.

According to Heffernan (2005), one of the most clear ways to minimize credit risk is that banks should ensure the price of a loan exceed a risk adjusted rate, and loans should be priced at a level sufficient to cover all costs. Specific consideration should be given in the process of pricing loans such as, the cost of funds, collateral (If there is any collateral or security backing the loan, the rate charged should be lower than in the absence of security), the cost of servicing loans, costs of operations, loan able funds (size of the credit), interest rate risks (IRR), the competitive environment and credit risks (the borrower risk premium that reflects his/her creditworthiness). Basically, the risk premium is higher for riskier borrowers (the riskier the borrower, the higher the premium and the higher the premium the higher the rate) and the loan rate should keep changing with the alteration of the loan risk profile.

2) Credit Limits

Another method for controlling credit risk is credit limits. A significant element of credit risk management (CRM) is the establishment of exposure limits for single obligor and groups of related obligors. The financial strength of the borrower (credit quality) and degree of bank's tolerance toward handling risks are major factors determining the size of

bank's credit limits. Financial institutions may establish limits for a specific industry, economic sector or geographic regions to avoid concentration of risk (Basel, 2000).

To ensure an appropriate credit limits policy, it should be reviewed on periodic basis, frequently once every six months.

3) Collateral (Tangible Assets Eligible for Sale)

One of the most, oldest and traditional techniques used by banks to mitigate credit risk is collaterals. Banks use collateral to reduce credit risk exposure. Collateral performed the asset that is pledged to secure the credit, which becomes subject to seizure in case of borrower's default. In other words it refers to the process of pledging or giving assets to a credit institution, by the borrower or a third party on behalf of the borrower. In technical terms, collateral gives the possibility to transform, at least partly, credit risk into other forms of risks like market risk or liquidity risk. Collateral may include business or personal assets, such as cash, gold, government bonds, rated financial securities, and equity ….

In general, collaterals represent an additional form of security to the bank (lender) in case the borrower fails to pay back the loan or its obligations. However, banks look at collaterals as second line of defense in case of borrower's default, first line of defense for banks and credit decision rely on (not the collateral as primary source of repayment) is the borrower ability to generate cash flow(the borrower's financial strength and debt-servicing capacity) to repay the debt (primary source of funds) (AL-Zubeidi, 2002). In other words what really matters is actually whether the borrower has continuing access to sufficient cash flow when needed, not merely an existence of the collateral.

Generally speaking, banks ask for collateral for three major reasons (Blazy and Weill, 2006):

1) A bank tends to ask for collateral to reduce loan loss in the case of default by the borrower.
2) Collateral may find the answer for the problem of adverse selection that arise from the better information owned by the borrower in comparison to the bank before the lending decision.

3) Collateral can minimize the moral hazard problem that could be arise by the borrower after having the loan, by reducing the incentives of the borrower to invest in riskier projects or minimize its effort to ensure the success of the project for which loan was granted (aligning the interests for both the bank and the borrower).

The suitability of any asset to be used as collateral should have a number of conditions and characteristics such (AL-Zubeidi, 2002):

- Standardization (ease of evaluation): Some items particularly merchandise have been graded or classified to reflect or express its quality or standards in order to facilitate its use in trade transactions and/or as collateral. These collaterals should be evaluated periodically at a minimum of every six months.
- Marketability (ease of liquidation): Ease of converting collateral into cash to repay the debt in case of borrower's default such as gold and short-term debt securities traded in money markets.
- Stability of value: Security or collateral should have stable value over time; this value is not subject to a severe shortage and sharp price fluctuations or inversely correlated with the commitment value since Lenders would prefer or love collateral which market values are not likely to depreciate or drop significantly during the life of the loan.
- Coverage: Collateral or security value should cover the full value of the loan or the commitment plus safety margin (no less than 25% of the loan value) in case of market value reduction of the security. That's what called a haircut. A haircut is the amount by which the collateral exceeds the principal of a loan. Haircuts are applied to the market value of various types of collateral. The size of the haircut will vary with the perceived riskiness of the collateral. For example, if a 1% haircut is applied to Treasuries, then Treasuries are valued at 99% of their market value and if you have an asset that has a value of $1,000, and you want to put it up as collateral for a loan, but the lender will only give you $900, you are getting a 10% haircut.
- Safety of legal documentation for the collateral (the bank must has the legal right to liquidate or take legal custody of the collateral that has been pledged or

transferred to the bank, at the right time, in case of the default, insolvency or bankruptcy). In other words the bank should ensure that there is no prior claim or claim of equal ranking, by another party on the collateral and should secure their control of the collateral prior to the drawdown of credit facilities. For example, they should obtain customers' authorization to transfer the legal title to the pledged asset to them.

- In order for collateral to be eligible and suitable as protection tool, the credit quality of the counterparty and the value of the collateral must not have a material positive relationship.

Since collateral reduces the bank's risk, it should reduce the cost of borrowing to the borrower or the counterparty by charging lower rates to collateralized debt Vs uncollateralized debt.

4) Guarantees

There are two essential parties in the credit process provided by banks, the first party is the bank and the second party is the beneficiary of the credit. Personal guarantees are contractual obligations of a third party (natural or legal entity), and they act as if they were external collateral. However, they do not give the lender a specific claim on particular assets, and change the actions he could take in the case of the borrower's bankruptcy. In other words a third party (guarantor) is committed to the bank (creditor), in addition to the primary debtor (borrower) to pay the value of the debt in case of borrowers default, so that the bank will deal with the guarantor in parallel to the debtor in terms of the claim and prosecution until the full payment. Since no specific asset is available by way of security in the context of guarantees (unfunded credit protection), the bank (lender) will focus on;

- The creditworthiness and reliability of the provider.
- The validity and enforceability of that party's obligations (the contractual arrangements provides adequate protection).

For guarantees to be credit risk mitigation tool, it should fulfill the following criteria (Basel, 2006):

- "the guarantee should represent a direct claim on the guarantor;

- the guarantee should be unconditional and irrevocable;
- the guarantee should be properly documented and legally enforceable;
- the guarantee should remain continuously effective until the facility covered by the guarantee is fully repaid or settled; and
- the financial strength of the guarantor should be thoroughly assessed and considered as adequate for discharging the obligation under the guarantee".

5) Diversification

Diversification is a very common concept in the area of credit risk management, and primary tool in the area of credit risk mitigation. Diversification strategies spread the credit risk in order to avoid a concentration in credit risk problems. The overall risk faced by credit and investment portfolios is a reflection of systematic risk on the one hand and unsystematic risk on the other hand. In other words, the sources of credit risk within the whole portfolio include two types of risks, are (Joseph, 2006; Bodie, et al., 2005):

1-Unsystematic risk or called firm specific risk, unique risk and diversifiable risk: this kind of risk represents the portion of an asset's risk that is associated with unplanned causes that can be removed through diversification. It's attributable to firm-specific events, such as strikes, lawsuit, changing in customer traits and regulatory actions or due to factors related to the industry or a company like labor unions, product category, research and development, pricing, marketing strategy etc.

2-Systematic risk or called market risk and non-diversifiable risk: Systematic risk is due to risk factors is due to risk factors that impact the whole market such as, recession, inflation, taxation and some socio/economic factors. It cannot be reduced or removed through diversification. Systematic risk is beyond the control and some times forecasting of such risks by investors and banks management and cannot be mitigated to a large extent. In contrast to this, the unsystematic risk can be mitigated through portfolio diversification. Bothe systematic and unsystematic risks are called total risk. The concepts associated with

the diversification of credit portfolio are varied; the following are the most important of these concepts:

Diversification is considered a risk management mechanism by combining or mixture of various types of investment within a portfolio. The reason behind this mechanism or technique is to maximize returns at a lower risk levels, since a portfolio of different kinds of investments will, achieve on average higher returns, than other individual investment within the portfolio. In other words, diversification can offset or compensate the additional volatility created from an increase in the number of risky loans (Investopedia). Diversification of the portfolio included investments in variety of assets, which the revenues are not moving together (not correlated), the overall risks are minimal compared to the individual assets, and allows the financial institutions to reduce operational costs compared with compilation of the credit portfolio (Mishkin and Eakins, 2006).

Since the banking industry has become more competitive and less profitable, commercial banks must take into consideration improving the efficiency and quality of their financial services. Banks in recent years have started increasingly to move and depend on into areas that yield Non-interest income – into activities that earn fees rather than interest after the income from traditional activities in which interest income were squeezed because of declining in interest rates. In other words, banks might need to increase and diversify the sources of incomes from traditional and non-traditional activities.

Deregulations, innovation in financial services products and improvements in technology are the main reasons and incentives for banks to increasingly adopt non-traditional activities. Since the 1980s, because of the three above tracks, incomes from the non-traditional activities, which are classified as non-interest incomes, have played a more important role in operating incomes. A diversified portfolio, composed of different assets with small mutual correlations, is less risky because the gains of some of the assets more or less compensate the loss of the others (Bouchaud and Potters, 2003).

In other words, banks should follow and adopt an investment strategy whereby its portfolio is comprised of investments across different geographic areas if applicable, economic

sectors, industries and different companies and individuals. The strategy is expected to reduce risk exposures.

-Modern Portfolio Theory (MPT) and Diversification Policy

MPT is considered one of the most effective and important economic theories in finance and investments. MPT propose that investors should not look at risk/return trade off alone but they should diversify their investments by investing in more than one investment within their portfolio, this will enable them to increase returns at particular level of risk. In other words do not putt all of your eggs in one basket. The basis of MPT theory is the needs for careful selection of investments make up the portfolio, taking into account the correlation or the movements between the return on those investments, the more was this relationship is inverse or independent or no relationship the lower the risk of portfolio return, will be less than if there was positive and direct correlation between the return on those investments (The lower correlations are between assets of a portfolio, the lower the risk is of the portfolio) (Bodie, et al., 2005).

6) On-Balance-Sheet Netting

In order to minimize counterparty risk is to combine the exposure under the diverse transactions entered into with a particular counterparty through the use of netting mechanism. This can be achieved by entering into a master agreement with each counterparty providing for appropriate netting arrangements.

Netting agreements is a legally binding contract between two counterparties that in the event of default of one of them, allows aggregation of transaction between these two counterparties (Bielecki, et al., 2011). Upon that, netting agreements nets the amounts to be exchanged between counterparties, which future credit exposure can be greatly reduced. For banks, netting agreements are mostly applied to interbank transactions.

2.5.3 Newer Methods for Credit Risk Transfer

The last two decades have witnessed the development of new efficient methods and less costly financial instruments, to address risks arise from credit activity, which make credit risk more manageable. An increasing number of banks became active in off-balance sheet

(OBS) business to enhance their profitability. OBS instruments generate fee income and do not appear as assets or liabilities on the traditional bank balance sheet such as derivatives and securitization and alternative risk transfer. In the following part, those methods will be described individually.

1) Asset Securitization

Securitization is, likely, one of the most newly influential financial instruments that happen in recent years and had significant change in the commercial banking industry. It allows banks to ensure the continued flow of liquidity from transforming illiquid assets that could not be sold in the liquid markets into marketable securities. Securitization also is a risk management technique by which ownership and/or risks associated with the credit exposures of a bank are transferred to other parties. It is used to spread risk across diverse 'baskets' (not putting all one's eggs in a single basket) and to enhance financial stability (Basel, 2006). Asset securitization is about turning traditional, non-marketed balance sheet assets into marketable ones and moving them off balance sheet (Twinn, 1994).

For a bank, securitization requires it to set aside a bundle of incoming-earning assets and to sell securities versus those assets in the open market, which means transforming loans into public traded securities in effect(such as bonds, commercial paper and asset- backed securities) (Rose and Hudgins 2008).

Some studies point out that bank regulation as one of the motives to securitize. Securitization allow banks sell a part of its loans (in particular that of better quality) and with the proceeds, lend to riskier borrowers so as to increase the expected returns of their portfolio with no change in capital requirements. By this way securitization alleviates the regulatory burden (Ambrose, et al., 2005)

2) Loan Sales

Not only loans can be sold as collateral in the securitization, but bank loans themselves can be sold in entirety to a new owner. Under loan sale, the bank originates and services the loan for few years and then sells it to the buyer, and such a bank loan sale occurs when a bank originates a loan and sells it either with or without recourse to an outside buyer (Saunders and Cornett, 2006).

The popular type of loans sales is that the original contract between the bank and the borrower leftover the same, in which the bank remains to collect payments, monitor the collateral and check the books. In many cases the client or the borrower has no idea that his loan has been sold. Another major type of loan sales, but less common than the prior type is the transfers of the bank- borrower relationship to new buyer, giving the buyer some rights to have some action against the borrower.

Loan sales have existed for many years already and their use has been increasingly recognized as an important tool in a bank manager's portfolio of credit risk management techniques, especially when the secondary market for mortgage loan (loan sale) allows originator of a mortgage to easily sell them. It is also enabling financial institutions to invest (buy) in mortgage without necessary originating loans. In addition, it allows buyer to liquidate them prior to maturities.

3) Credit Derivatives

The continuous development of credit risk transfer techniques brought credit derivatives to existence many years ago. Despite credit derivatives are relatively new compared to other derivatives (having been developed as recently as the mid-1990s) participation is already widespread in higher growth rates.

A derivative instrument can be defined as a financial instrument which derives its value of some other financial instrument or variable. Credit derivatives are "bilateral (having two sides) financial contracts that transfer credit default risk from one counterparty to another" (Choudhry, 2004). Its value is derived from the value of an underlying price, rate, index, or financial instrument.

The increasing demand for hedging and credit risk diversification by commercial banks and other financial institutions, credit derivatives arose in response with increasing pace. The result of this is that the form of credit has changed from illiquid risk that was not considered suitable for trading to a risk that can be traded much the same as others. In other words credit derivatives can help banks to manage the credit risk by insuring against adverse movements in the credit quality of the borrowers. The major types of credit derivatives are credit default swaps, credit options and credit-linked notes.

To conclude, Risk-taking is an inherent element of banking and cannot be completely avoided. Actually, profits are in part the payoff for successful and effective risk taking in banks. Also it should be mentioned that the series of financial crisis has resulted in discovering and developing new techniques for mitigation of credit risk. The reliability of much of these techniques like securitization (collateralized debt obligations) and some credit derivatives (asset put options, total- return swaps, credit-linked notes) used for credit risk assessment and transfer have become suspicious and made the financial word more complex and even not transparent (Angkinand et al., 2010).

Credit risk does not tend to be systematic in the banking system. The failure of one bank will drive other banks to the end, through reputation effects and connection with each other.

To promote the achievement of bank's strategic goals, banks must adopt and implement strong and healthy risk mitigation measures and techniques. In other words, banks management should develop and implement an effective credit risk management strategy, which is fundamental for long-term success.

SECTION SIX

CREDIT POLICY AND CONTROLS THAT GOVERN THE PERFORMANCE OF PALESTINIAN BANKING SYSTEM

2.6 Credit Policy and Controls that Govern the Performance of Palestinian Banking System

2.6.1 Introduction

The credit policy of any commercial bank should include standards and general trends, which credit departments must work within the framework, regardless of its regulatory level, with the need for a consensus and consistency with the offshore banking environment in terms of consistency with the rest of bank's internal policies. Taking into account, that these policies different from one bank to another, depending on the banks long term strategic objectives, organizational structure, and bank's capital size.

To study the reality and trends of commercial banks credit policy, we should analyzed deposit attracting policies from one side, and the policy of granting credit facilities adopted by Palestinian commercial banks from the other side. In the fact, that credit policy is reflected in these indicators, and thus, can be used as primary indicators to large extent, in measuring the impact of credit policy on the performance of the banking sector. Each commercial bank aims to find the best possible ways for the optimal use of its available resources to support its competitiveness and raise the level of the performance of its operational efficiency, when establishing and placing its credit policies. Through these policies the bank is working to meet the market credit needs, taking into account, the economic conditions at the sectoral levels and/ or geographical where bank's activities are concentrated and thus, this policy will have a clear impact in type, size and maturity of credit facility. The Palestinian banking environment, where Palestinian banks operate is unfavorable and unnatural environment like other environments in other countries surrounding banking business. This situation is due to the lack of political and economical stability surrounding Palestine, which raises investments risks levels.

2.6.2 Overview of the Palestinian Banking Sector

The banking sector is one of the most important components of the Palestine Financial system and the most influential factor in financial stability in general, as it is the major funding channel for the private and public sector. Therefore, the changes witnessed by the banking sector have direct and indirect impact on the overall economic activity.

The Palestinian financial sector faced systematic destruction of its infrastructure as all other sectors, after the Israeli occupation to the Palestinian territories in 1967. Under the Military Order (MO #7), Israel closed all the bank's branches operate in West bank and Gaza Strip, frozen and transferred all accounts to the Israeli Central Bank. In 1967, there were 38 Jordanian, Egyptian and foreign banks operate in West bank and Gaza Strip. The banking law in the Palestinian territories has been changed under many Israeli's MO's. The closure of Arab banks operates in Palestine cut the direct financial relationship with Arab countries. As a result, Israeli currency was declared to be the legal currency in West Bank and Gaza Strip.

After the PNA's (Palestinian National Authority) creation in 1994, after Oslo peace agreement between Israel and Palestinian Liberation Organization, many economic laws has been established and formulated with the objective of organizing the operations of various economic sectors and the financial sector including the banking sector.

The Palestinian Monetary Authority (PMA) act as the central bank of Palestine, in which established by presidential decree in 1994 following the Oslo Agreement. The PMA has been able to operate in a difficult environment that uses multiple currencies, establishing a financial sector that offers most services, such as banking, a securities market, and insurance. Seventeen banks operated in Palestine at the end of 2012 with a total of 230 branches and offices, 170 in the West Bank and 42 in the Gaza Strip. Seven banks are locally owned (seven of which are listed on the Palestine Exchange, five are commercial banks, the other two are Islamic banks.) and operate 121 branches and offices. Ten foreign banks maintain 109 branches. The banking sector employed 4,679 staff, 2,331 in local banks and 2,348 in foreign banks, with total assets reaching USD 10,051.9 million,

deposits of US$ 7.5 billion and credit facilities of US$4.2 billion at the end of year 2012 (PMA, 2012).

Figure 2. 9: Local banks in the Palestinian banking sector, end of 2011

Founded		No. of branches
1960	Bank of Palestine P.L.C	46
1994	Palestine Commercial Bank	6
1995	Palestine Investment Bank	13
1995	Arab Islamic Bank	10
1995	Palestine Islamic Bank	15
1995	Al Quds Bank	21
1996	Arab Palestinian Investment Bank	1
2006	Al Rafah Microfinance Bank	6

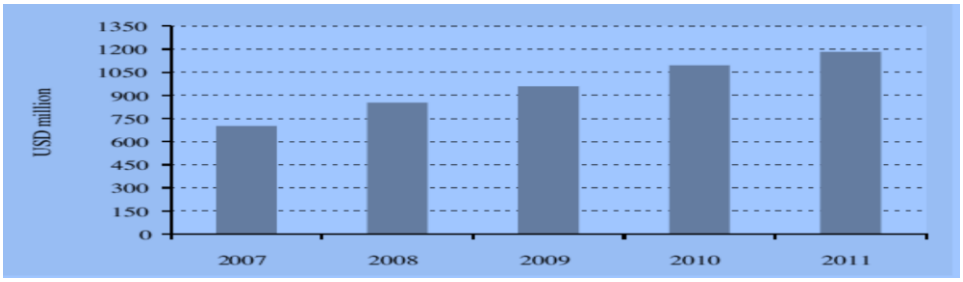
Source: Palestinian monetary Authority (PMA), 2011.

Figure 2.10: Banking assets during 2009-2010

Source: Palestinian Monetary Authority (PMA), 2011.

Equity is the main source of internal funds, which represent the first line of defense against any shocks that banks may face. Thus, any improvements in equity, whether through increasing profits or strengthening capital, are considered crucial for enhancing banking stability and an indication of its progress. At the end of 2011 the paid-up capital reached US$ 1184.5 million at the end of year 2011.

Figure 2. 11: Banks (net) equity during 2007-2011



Source: Palestinian Monetary Authority (PMA), 2012.

2.6.3 Credit Policy and Controls that Govern the Performance of the Banking System in Palestine

As it has been mentioned before, the means and control tools of credit supply, determine the framework of the credit policy since it considered the mirror That explain the reality and performance trends in the areas of banking credit to attract the one hand, and the policy of granting credit facilities on the other hand.

2.6.3.1 Risks and Controls Governing Credit Policy

When talking about the credit policy and the scope of credit in the banking sector in Palestine, we note, the fact that this policy is influenced by the level of risk and uncertainty, which imposes on the banking system to diversify its facilities, services and banking activities making each credit represents a stand-alone operation. Credit risks are considered one of the most important risks a among all kind of risks because of the economic, political, social and legal conditions that limit the supply of bank credit in Palestine, due to the Fluctuations of the economic implications of the limited potentials, following the Israeli economy and its inability to build bridges of complementary or interoperability with neighboring markets or foreign market for objective reasons.

Not to mention the political instability and weak legal structures and legislative, whether to the lack of legislation and laws that can meet the requirements of modernity and future, and even to be found, there is a lack of capacity and / or safety of the application and implementation. With regard to the risks associated with the borrower activity whether its

productivity - technical or marketing risks, it is clear and evident in the inability of the Palestinian product to develop its relations with foreign markets which enhance its competitiveness while it is difficult to operate freely in the local market. This will raise the production costs or lead to the freezing of capital in the form of goods that is not realizable, which led many institutions to shift to commercial sectors or real estate, or close their doors. These conditions led banks to increased cautious policies when dealing with such institutions, which would deepen the credit risk related to the financial situation of the client.

Due to the novelty of the Palestinian banking system and the weakness of experience and expertise in the Palestinian market, some banks especially the National one has faced in the early stages high degree of operational risks arising from bank's errors and non-compliance with the standards and banking norms but due to the control and supervision tools by Palestinian Monetary Authorities led to the improvement of the level of control on these risks, through the developments and strengthen internal and external controls of the credit.

2.6.3.1.1 External Credit Controls

External Credit controls can be defined as those supposedly controls that must be commitment and compliance by the banking system whether it represented by banking norms and standards accepted or were regulations and instructions imposed by the regulatory authorities or the concerned authorities regarding organizing and controlling of the banking business (Alhamzawi, 1997). This definition reflects the role of this type of controls in shaping the determinants of credit supply and the main factors that control its size and trends, such as the general rules of credit, regulations and procedures audit carried out by the supervisory authority, and the extent of their ability to achieve consistency between monetary and credit policy with the rest of the tools of economic policy on the one hand and between the instruments of monetary policy and credit used by the monetary authorities and regulators. To achieve its objectives, it uses variety of quantitative and

qualitative tools and methods which have without doubt a significant impact on the display size and trends of credit.

One of the most important task undertaken by the Palestinian Monetary Authority (PMA), is the task of supervisory and regulatory of banks, since the other traditional functions did not fall within the scope of its functions because of the Palestinian conditions and circumstances which has hampered the efforts that aim to take the PMA intention of the functions of the Central Bank in full. Centered policies and tools that are adopted by Monetary Authority including reserve requirement policies, licensing policies and other activities to do the job, is the basis for solid future sound banking system.

These tasks directly related to the credit policy and influence through its implementation directly and indirectly on the size and direction of credit facilities in accordance with the contents of the terms of the authority of law: the Palestinian Monetary No. (2), 1997:

1- Regulating banking activities, issuance and cancellation of licenses of banks and financial companies and control and supervision.
2- Development, organizing and implementation of monetary and credit policies, and policies for dealing in foreign currency and in accordance with the provisions of the laws and regulating that.
3- Development and implementation of regulations, decisions and instructions to ensure an effective, safe and sound banking system. Also monitoring and controlling of banks in order to ensure the safety of its financial position and protect the rights of depositors.
4- Regulate the amount, quality and cost of credit, to respond to the requirements of economic growth and monetary stability in accordance with the banking provisions and laws banking. So PMA like other monetary authorities and central banks are adopting quantity and quality surveillance methods and tools within its policy framework towards the achievement of its various objectives and functions.

2.6.3.1.2 Most Important International Quantitative Monitoring Tools and the Extent of their Application in Palestine

The changing policy of the of reserve requirements ratio, liquidity ratios and ceilings credit actually used by the Palestinian Monetary Authority, which have a real direct and indirect impact on the size and trends of the credit facilities, which are levied features of the credit policies of commercial banks operating in Palestine:

The policy that change the ratio of mandatory cash reserve is an important tool used by the central banks in directing and developing its monetary and credit policies and considered one of the appropriate tools to developed countries which is characterized by shortness of securities markets and the limited effect of discount rates as is the case in Palestine. According to this policy, commercial banks are required under banking legislation to keep a certain percentage of cash balance at the central bank as a percentage of its deposits. The article (37) of the Palestinian Banking act no. (2), 2002 stipulated on the right of the Monetary Authority in determining the reserve requirements for banks and deposit these funds with the Monetary Authority in accordance with the instructions issued for this purpose.

The Palestinian Monetary Authority headed to use the liquidity policy ratios and ceilings credit following the example of other central banks that they use, as a tool for the control and adjusting bank credit, and thus control credit supply. According to the article of (34) of the Palestinian banks Act (2) for the year 2002:

Entitled to PMA, determining the rules of calculating ratios and other criteria of risks to be on each bank observed, with respect to capital, assets, liquidity, the components of capital and provisions to be retained in the light of the circumstances of each bank and the discretion of the authority of the risks inherent in its banking operations. As given by the Article (35) of the same law, PMA has the right to determine appropriate rules relating to ceilings and credit costs. With respect to liquidity, the article (36) of the Act referred to the right to specify percentages related to the extent of liquidity in line with the activities carried out by the bank with the determination of the minimum liquid assets or categories specified there in and the method of calculating the liquidity ratio.

These ceilings are usually done on the basis of comparative measurement of the credit ratio to one banking variable as the size of deposits, assets or capital, and is sometimes used as an absolute credit ceilings as maximum or minimum limit should not skip, including:

1-Capital Adequacy: it represent one of the requirements banks must follow and committed to, by demanding to keep enough level of its private capital, to protect depositors from losses and meet the growth in bank assets, by forcing banks to follow credit policy based on the diversification of assets and distributed according to the weighted risk, or raise the level of capital to maintain a minimum capital adequacy ratio which is reflected on the quality and quantity of credit facilities.

As instructed by the PMA, capital adequacy ratio shall not be less than10% for commercial banks and 12% for other banks (They ratios exceed the requirements of Basel I which recommended a minimum of at least 8%, while it is consistent with the recommendations of the Basel II identified by 12% for the developed countries that experiencing its banking and financial instability low level of development (Altony, 2003).

2-Liquidity: Whether the bank has excess liquidity or lack of liquidity, it should make balance between them, since Liquidity has a direct and indirect impact on the quantity of bank's credit facilities offered. Under instructions issued by PMA has committed banks to have at least4% of cash in its vaults as a percentage from its total liquid commitments, as well as it demanded the banks to have no less than25% of total liquid assets as a percentage from its total liquid commitments. The ratio was in Jordan, 30% of the total deposits, in Egypt, 20% on local currency deposits and 25% on foreign currency deposits.

3-Credit Concentrations: This concept can be defined as, to what extent bank's credit portfolio focused in particular sectors or limited individuals, which may lead to exposing the portfolio to risk in the event of failure or a setback in one of these sectors or individuals, therefore the credit policy should move towards risk diversification, which gives the opportunity for different sectors and individuals concerned with equal access to opportunities to obtain credit facilities on equal terms without discrimination or misuse of depositors' money and more importantly, mitigation of risk that may be exposed to the

bank. Under the Article (16) of the Banking Act No. (2) for the year 2002, obliging banks not to extend credit to a person or group of persons, including more than 10% of the bank's capital base without obtaining a prior written approval by the Palestinian Monetary Authority, in all cases, the value credit granted must not exceed of 25% of the bank's capital is not subject to any obligations. In addition to the restrictions on the provision of credit facilities to customers who have a direct or indirect relationship with the bank, who has business interests, financial or own 5% of the bank's capital or 10% for a person or group of persons who work together or to any legal person have a stake in the bank capital to relevant and influential in the management of the bank.

2.6.3.1.3 Internal Credit Controls

The internal policy of commercial banks plays an important role in determining the size and trends of credit facilities of both qualitative and quantitative terms. It draws its credit strategy and operational policies according to the change in economic conditions and in line with the general economic objectives through the alignment between potential and existing and projected needs. Confirming that, the Palestinian Banking Act No. (2) for the year 2002 in Article (21) of item (3) pointed to the need "each bank should develop its internal systems that ensure the proper functioning, but inconsistent with the contract inception and its statute, so that senior management represented by the board of directors issued the general instructions and the plan fiduciary and technical instructions for the banking activity and foremost credit policy. The Palestinian Banking Act determine the role of the Board of Directors of licensed banks, to develop policies, regulations and control over the activities of the Bank in accordance with laws and regulations and instructions in force as well as the responsibilities entrusted to him under the internal regulations of the Bank, with an emphasis on the necessity of forming the Committee on Internal Audit of the members of the Council, which is essential in risk management and credit according to the principles of sound and technology professional management in order to ensure that there is to exercise control over the operations, management, control and oversight audit and ensure that there are regulations for loan classification. Article of

41 of the above-mentioned law, banks appoint committee Review from the members of the Board of Directors to review the financial reports and recommendations of internal and external auditors to determine the level of performance of the executive management and the extent of restriction laws and regulations and internal policies that constitute the framework and internal controls for the activities of the bank, including credit activity.

Upon that, the extent of the integrity of internal controls at the bank determines the efficiency of banks use to financial resources and using them to achieve a balance between business profitability and social development, through the rational allocation of bank's resources by achieving the highest possible efficiency at the level of management information systems developed and customization and effective operation of credit management. Where it was noted that each stage of the credit decision-making affected by three sets of factors, to varying degrees, and even get to the stage of deciding on loan application either acceptance or rejection:

The general rules in the granting credit.

- Factors related to the bank: this include, objectives of the bank, nature of its activities, quality of banking services practiced, credit policy and its potential physical, human, technical, contribution rate of the bank in the banking market, competitiveness strategic espoused by this regard and considerations of liquidity.
- Factors related to the quality of credit facilities provided: They relate to the purpose of the credit, credit size, style, source of repayment, its compatibility with the credit policy and the nature of the risks that entails, and then the balance between revenue and costs.

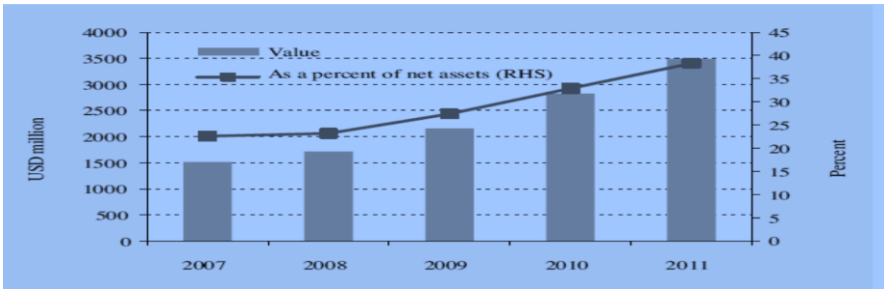
Finally, one can say for sure that the size and quality of credit supply is determined mainly on how decision-making based on credit standards and general guidelines laid down by the bank's credit policy.

2.6.4 Credit Facilities in the Palestinian Banking System

The role of Palestinian banking system still weak in financing various economic sectors, compare to other developing countries. This is due the instability of both economic and

political environment. The percentage of facilities granted to private and public sector has been remarkably improved during the period 2005-2011 as shown in figure 2.13 below.

Figure 2.12: Direct credit facilities, 2007-2011



Source: PMA's financial Stability report, 2012

In 2005 credit facilities wasUSD1790.3 million then increased gradually until it reached USD 3490.1 million at the end of 2011, as shown in table 2.7.

Table 2.7: Credit facilities in the Palestinian banking system (%) during 2005-2011

Credit Facility (USD millions)	2005	2006	2007	2008	2009	2010	2011
Palestinian Banks (study sample)	352.3	408.05	408.8	521.9	623.5	931.9	1220.1
	19.68	21.4	27.1	30.5	28.9	33.1	34.9
Foreign Banks	1437.9	1495.2	1103.9	1194.7	1534.6	1891.9	2270.8
	80.02	78.6	72.9	69.5	71.1	66.9	65.1
Total	1790.3	1903.2	1512.7	1716.6	2158.1	2823.6	3490.9

Source: Palestinian Bank's Annual Reports, 2012

Table 2.7 shows that Palestinian commercial banks share from the total credit facilities granted is very low comparable to the foreign banks operate in Palestine, reaching 19.68% in 2005 up to 34.9% in 2011. This weakness or declining role played by local banks (Palestinian banks) could be attributed to the low percentage of customer deposits in comparison to the foreign banks operate in Palestine. This low percentage of customer deposits in local banks, despite the continuous increase during past years, where customer

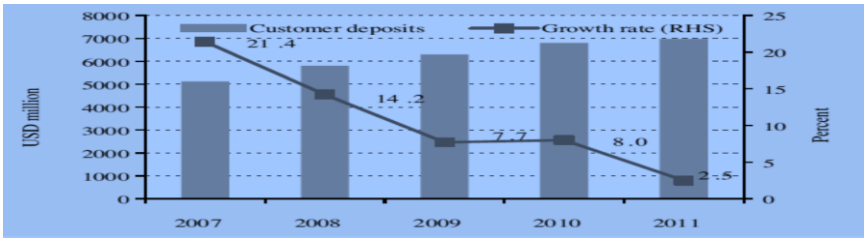
deposits have reached USD 6972.7 million by the end of 2011(see figure2.12) could be attributing to many reasons, as:

-Local banks capital is considered very low compared to many foreign banks operate in Palestine, and thus inability to compete with.

-Lack of customer confidence in local banks compared to big names of foreign banks.

-Lack of efficiency and experience in attracting customer deposits by local banks, since it's newly established and still in the development stage.

Figure 2.13: Customer deposits, 2007-2011



Source: PMA's stability report, 2012

Despite the low share by Palestinian banks in credit facilities granted, the percentage of facilities granted to total customer deposits is higher than that in foreign banks operate in Palestine as shown in table 2.8 next page.

Table 2.8: percentage of credit facility to customer deposits (%) of the period of 2005-2011

Banks	2005	2006	2007	2008	2009	2010	2011
Palestinian Banks (study sample)	61.4	63.1	44.3	50.5	28.7	51.7	64.2
Foreign Banks	39.7	42	26.8	24.8	37.1	37.8	44.7

Source: Palestinian Bank's Annual Reports, 2012

From table (2.8), it showed the following:

-The high percentage of facilities granted to total customer deposits, which exceed the demand of PMA for 40% rate of customer deposits.

- Weakness of foreign banks in granting credit facilities despite the acquisition of higher volume of deposits in the Palestinian banking market comparable to local banks. This weakness is probably due to (Abu Moammar, 2010):

1- Lack of appropriate investment climate in Palestine, and direct investment abroad.

2- Lack of political and economic stability in Palestine.

3- The inability of customers or counterparties to provide the necessary guarantees for credit facilities such as, collaterals.

4- Slow processing of bad debts through law, since Palestine does not have specialized commercial courts.

On the other hand, facilities extended in the West Bank were 87.4 percent of total credit facilities (USD 3191 million), against 12.6 percent (USD 300 million) in Gaza Strip.

This decline in the relative importance of credit granted in Gaza Strip during this period is attributed to several reasons including the suffocating siege on Gaza Strip and its negative impact on overall economic, social and political conditions.

Generally speaking, the role of banks operate in Palestine, whether it's national or foreign remain low in comparison to countries close to Palestine, like Jordan for example, the ratio of loans to customer deposits was 64.2% in 2010(PMA, 2012).

It should be mentioned that credit facilities in the West Bank are concentrated in the cities of Ramallah and Al-Bireh with a share of 64.5% of total credit granted in the West Bank. This is due the fact that Ramallah is the center of economic activity in the West Bank, and the seat of the official centers and ministries of the PNA.

Also the Total facilities granted to the public sector in 2011 increased by 31.5% from the previous year, reaching USD 1101.1 million, and resulting in a higher share to 32% compared with 31% of total customers deposit in 2010 which represent 31% from the total credit granted by Palestinian banks (PMA, 2011).

2.6.5 Palestinian Banking System and Credit Exposure to Public Sector

The major source of revenue for most commercial banks is granting credit activity, an activity that poses a risk to earnings and capital in the same time. Diversification of bank's activities and investments is considered an important concept in banking industry, since most of bank's failures have been due to credit risk concentration in one way or another. Credit risk exposure to a single borrower or group of related borrowers have the same risk characteristics, when measured as a percentage of capital, contain or raise a serious threat to the bank or lending institution's safety and soundness. Because a concentration of credit tends to have large risk, threaten the bank's safety and the soundness, regulators have imposed a limit on such exposures. In its efforts to strengthen bank's capital to face risks exposures of credit resulting from the high degree of concentration of credit, Palestinian Monetary Authority (PMA) has issued several laws to face this type of risk such:

- Resolution Act No. 9 of 2010, define the term "exposure" is defined as: (all forms of direct and indirect credit granted per person, bonds and debt instruments issued by the same person and purchased by the bank, in addition to the investments of the bank in that person, whether in the form of equity rights, or any other investments).
- The Banking Law of 2010, credit concentration is defined as: (total exposure per person or group of persons acting together or brought together by a common interest or family relationship to the second degree, and as determined by the PMA instructions).
- According to the PMA instructions number (5 / 2008) (paragraph 5/6/1), the rate of credit granted (outstanding) to any economic sector should not exceed 20% of total credit granted (outstanding).
- According to the PMA instructions number (20/1997), the rate of credit granted per customer does not exceed 10% of bank's capital base, and this ratio can be raised to 15% of bank's capital base after obtaining a predetermined approval of monitory authorities.

Despite all of those regulatory and instruction issued by the PMA to strengthen the stability of the financial system in Palestine, still the public sector's(Palestinian National Authority)(PNA) share from the Palestinian banking credit portfolio reached high levels. In light of liquidity pressures that the PNA suffers, the public sector's (PNA) debt to

commercial banks rose from $0.5 billion in 2008 (62 percent of banks' equity)to $1.1 billion at end-2011 (93 percent of banks' equity) which represent 31 percent of total banking credit portfolio, against 69 percent left to private sector. This debt continues to rising reaching $1.2 billion (99 percent of banks' equity) by end-June 2012 and 33.5% of total banking credit portfolio, because of the high financial crisis experiences by the Palestinian government (see table 2.9 next page).

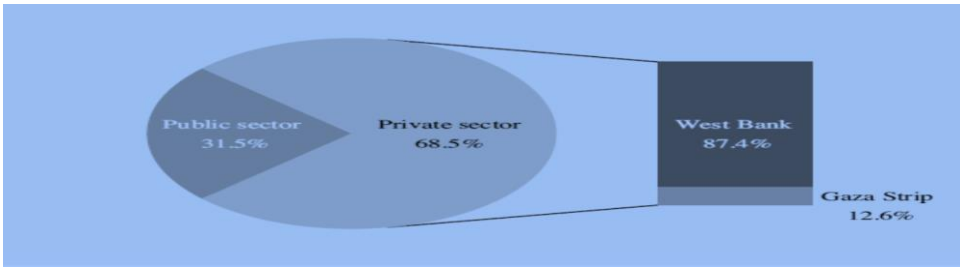
Table 2.9: The relative distribution of the credit (%) granted to the public and private sectors according to the nationality of the bank from 2008 to 2012:

Bank	Beneficiary sector	2008	2009	2010	2011	2012	Average period
Local banks	Private sector	62.1	72.4	70.9	69.3	67.9	68.5
	Public sector	37.9	27.7	29.1	30.7	32.1	31.5
Foreign banks	Private sector	77.6	70.9	71.1	68.7	65.8	70.7
	Public sector	22.4	29.1	28.9	31.3	34.2	29.3
Total banks	Private sector	70.9	71.5	71	69	66.5	69.8
	Public sector	29.1	28.5	29	31	33.5	30.2

Source: Palestinian Monetary Authority Annual Report, 2012

Table 2.9 shows the Increasing trend of public sector's share of total credit granted by banks operating in Palestine through time. This indicates a high degree of risk and banks exposure to this crisis, since credit granted to the government exceed banks equity to total banks. As a precautionary measure to reduce these risks, Monetary Authority called on banks to deal with extreme caution on the subject of credit provided to the Palestinian government.

Figure 2.14: Sect oral distribution of credit facilities for 2010 & 2011



Source: PMA's Annual Report, 2012

2.6.6 Credit Risk Extended to Household Sector and Companies

At the level of private sector loans, notes the high proportion of personal loans to 38.6% of the total credit granted by banks in the year 2012, Compared with 35.5% in the previous year, at the expense of the decline in the credit granted to companies to 24.3% compared with 28.9% in 2011.The percentage of personal loans granted by domestic banks to around 35.4% in 2012 compared with 32.3% in the previous year, while the this percentage in foreign banks about 41.5% of the total credit granted by foreign banks, compared with 37.9% for the same period of comparison. As for to the credit granted to companies from domestic banks has fallen from about 31.7% of the total credit granted to them in 2011 to 28.5% in 2012, as the decline in foreign banks from 26.7% to 20.6% for the same period of comparison (PMA, 2012). Personal loans are loans granted to guarantee a mortgage, car loans, educational loans and other consumer, and these loans granted secured by multiple guarantees and collaterals reduce the size of the potential risks. While the facilities granted to companies in investment loans and short - term loans (Overdraft facilities) which represent approximately 20.1 % of the total credit facilities granted to companies by local banks, compared to 22 % by foreign banks. It is worth mentioning that the overdraft facility riddled with relatively higher risk than loans risks, so the Monetary Authority puts specific controls to this type of facilities, are the most important, not to exceed 30% of total bank credit (PMA), 2012).

Table 2.10: Facilities granted to (%) according to the nationality of the bank from 2008- 2012:

BANK	Credit type	2008	2009	2010	2011	2012
Local banks	Personal loans	35.8	42.2	47.2	32.3	35.4
	Corporate credit	20.6	22.9	18.2	31.7	28.5
	Credit cards	1.6	1.6	2.5	1.8	1.7
Foreign banks	Personal loans	48.2	24	36.4	41.5	41.5
	Corporate credit	12.9	35.4	30.5	20.6	20.6
	Credit cards	.5	.4	2.5	.5	.5
Total banks	Personal loans	42.8	31.1	40.9	38.6	38.6
	Corporate credit	16.2	30.9	25.4	24.3	24.3
	Credit cards	1	1.2	1.3	1.1	1.1

Source: Palestinian Monetary Authority's Annual Report (PMA), 2012.

One of the indirect inclusion of PNA's financing difficulties, has been temporary disregarding by public sector employees (borrowers) on their loan payments, resulted from delaying their salaries. Based on that, public sector employees increased their orientation for bank's loans as preventive procedure, which raise bank credit portfolio of public sector employees from $0.3 billion at the end of year 2010 to $0.6 billion by mid-2012.

The PNA's persisting domestic payment arrears and wage payment delays could lead to liquidity difficulties by private sector suppliers and public sector employees, which in turn could lead to a rise in banks' non-performing loans.

Upon the data mentioned a above, the PNA debt and PNA's employees debt together since they have the same credit risk characteristics or connected to each other by employees salaries which represent the only source of repayment to their bank's debt to commercial banks or to the Palestinian banking sector reached almost $ 1.8 billion by the mid- 2012 representing about 50 percent of Palestinian banking credit portfolio.

The overstated lending to the public sector in view of flow hardship the government suffers might have many direct consequences to the stability of the banking system, the most significant of which is the increase to incidents in which the government temporarily defaults on its loans, and by the worst scenario, like any unexpected political incident of resolving the Palestinian National Authority (declared many times by the president and other Palestinian political leaders), will lead to harmful or damage the banking system and

particularly small banks will suffered more particularly national or local banks compared to foreign banks operate in Palestine since all bank's equity would not cover the credit facilities extended to the PNA and its employees.

Another direct implication of the PNA's financing difficulties and high levels of borrowing in what's so called crowding out. Crowding out effect occurs when governments borrow funds from the credit market to finance government spending usually through expansionary fiscal policies. This is of concern because the government is overspending; revenue that is collected from taxes and other relevant transactions is less than the amount put forward in the budget. The borrowed funds by government reduce the amount of available for credit to private sector and thereby drive up interest rates because an increase in demand for loans, hence pushing up the prices. Higher interest rates, in turn, tend to reduce or "crowd out" aggregate investment expenditures and consumer expenditures that are sensitive to interest rates.

SECTION SEVEN
PREVIOUS STUDIES

2.6 Previous Studies

2.6.1 Introduction

The importance of factors affecting bank's profitability has attracted the concerns of many parties such academics, bank's management and investors. The literature classifies the determinants of commercial bank's profitability as internal and external. The internal determinants contain factors that cannot be controllable by institution management or called bank specific factors such as bank size, liquidity and risk management. Those factors are influences by the bank's management decisions and policy objectives.

External determinants include those factors which are uncontrollable by management of these institutions such as interest rates, inflation rates, market growth and market share.

The objective of this review is to examine and explore the main empirical results of related studies which examine the variables particularly that concern of the internal determinants of commercial bank's profitability. Credit risk variable, and mitigation techniques used by banks to minimize credit risk will be the most highlighted, since credit risk is the most significant current and prospective variable affects the bank's earnings or capital. The review will also include how the literate measure profitability of banks.

2.6.2 Related Studies

1-Astudy by Arif et al. (2012) entitled" Credit Risk and Shareholders' Value in a Developing Economy: Evidence from Pakistani Banking System". The study inspects the role of credit risk in value creation process in the banking system of Pakistan. The study establishes a model with three credit risk indicators, loss provisions, advances and capital adequacy ratio. The study employs Return On Equity (ROE) and Market Return on shares

as indicators to the value creation. The study collects data from 20 banks from the period 2004-2009. Results revealed that credit risk plays a minimal role in value creation process.

2-A study by Ramadan, et al., (2011) entitled "Determinants of bank profitability: evidence from Jordan". In this study, a panel data set of Jordanian banks was used for the aim of investigating the nature of the relationship between banks profitability and the characteristics of internal and external factors. For this purpose, 100 observations of 10 banks over the period 2001-2010 were covered. The study employs two measures of profitability, Return On Equity (ROE) and Return On Assets (ROA). The results of study suggest that the characteristics of Jordanian banks describe important part of the variation in bank profitability. Capitalized banks, low credit risk, high lending transactions, effective cost management tend to have high profitability.

3- A study by Almazari (2011) entitled "Financial Performance Evaluation of Some Selected Jordanian Commercial Banks". The study tests the financial performance of Jordanian banks. The dependent variable, Return On Assets used as performance measurement and bank size, asset management, operational efficiency as independent variables. The results showed a strong negative relationship between Return on Assets and bank's size, a strong positive relationship between ROA and asset management ratio and a negative weak correlation between ROA and operational efficiency.

4-The study by Flamini et al. (2009) entitled "The Determinants of Commercial Bank Profitability in Sub-Saharan Africa". The study tests bank's profitability in Sub-Saharan Africa. Using 389 sample banks in 41 Sub-Saharan Africa from 1998-2006. Return On assets employed as profitability indicator, loans to deposit ratio and short-term funding resources used credit risk indicators. The results suggest that larger banks, activity mix (diversification of activities) and banks with private ownership have higher return on assets. Also study results proposed that bank's profitability are affected by macroeconomic variables.

5- A study by Bakar and Tahir (2009) entitled" Applying Multiple Linear Regression and Neural Network to Predict Bank Performance". The study judge bank's performance in Malaysia using Return On Assets (ROA) as performance measurement, and liquidity,

credit risk, cost to income ratio, size, concentration ratio as independent variables. The data is collected from 2001-2006 for thirteen banks. The study employs multiple linear regression method for analysis.

6- A study by Keasey and Veronesi (2008) entitled “Lessons from the Northern Rock affair". The study explain that when the competitive environment among financial institutions is high and the economy is in good situation and growing, there be a high competition in the credit industry and banks try to offer various types of products with low prices. The risk arises in this condition by issuing a loan to low creditworthiness borrowers. In other words, granting loans to high default clients which increase bank's credit risk and affect the shareholders’ value.

7- A study by Eng and Nabar (2007) entitled “Loan Loss Provisions by Banks in Hong Kong, Malaysia and Singapore". The study examines the behavior of loan loss accounting disclosure of banks in Hong Kong, Malaysia and Singapore covering the period from 1993 through 2000. The study found that loan loss provisions are positively and significantly related with both of beginning loan outstanding and change in non-performing loan. This suggests that firms increase their provisions in response to an increase in credit risk.

8-A study by Al-Haschimi (2007) entitled “Determinants of Bank Spreads in Sub-Saharan Africa". The study tests the determinants of bank profitability in 10 Sub-Saharan Africa countries, by employing accounting analysis methods and panel regression tool. The results stated that bank’s profitability with big variation is affected by credit risk and market forces. Also the study find out that macroeconomic risk has weak and limited effect on bank’s profitability and loans are the major source of bank’s revenues, affecting profits positively.

9-A study by Vong and Chan (2006) entitled “Determinants of Bank Profitability in Macau”.The study examined the impact of bank characteristics, macroeconomic variables and financial structure on the performance of banks in Macau. The results of the study showed that the strength of bank’s capital is the most important in influencing profitability. A well-capitalized bank is discerned to be of lower risk that leads to higher profitability. The study also revealed that, the quality of assets, as measured by loan-loss provision

affects the performance of banks negatively. In addition, banks with a large retail deposit-taking network do not achieve a level of profitability higher than those with a smaller network. Finally, inflation as macroeconomic variable, showed a great relationship with the performance of banks.

10-A study by Tarawneh (2006) entitled" A Comparison of Financial Performance in the Banking Sector: Some Evidence from Omani Commercial Banks". The study tests the performance of Omani commercial banking system, using ROA and interest income as performance indicators (dependent variable) and bank size, asset management and operational efficiency as independent variables. The study finds out a positive strong correlation between financial performance and operational efficiency and medium relationship between return on assets and bank size.

11-Astudy by Kristiansen (2006) entitled "Bank Monitoring and Firms Debt Structure". This study investigated the relationship between reducing bank control on credit, versus credit and contract agreement, and terms and understanding imposed on the borrower and borrower's credit. The final result is which area is a good quality of credit portfolio? This is attributed to credit contrasts and agreements and undertakings imposed on borrowers, thus forcing them to decide on the structure of debt or appropriate financing for them. This increases the effectiveness of self-banking control, provision of protection for the bank from unexpected credit changes. The study concluded that audit reduces bank's expected losses. Audit practices, by linking them to credit contracts and agreements, as well as strict conditions and undertakings on borrowers, will have benefit for all parties, including the banks, in reducing credit risks. They also helps the borrowers by allowing them to benefit from reduction of financing operation costs since they choose the debt structure appropriate to them.

12- A study by Cannata and Quagliariello (2006) entitled "Capital and Risk in Italian Banks: A simultaneous Equation Approach". The study investigates the relationship between capital and risks, using the annual data of Italian banks during the period of 1994-2003. The study found a significant and negative relationship between change of capital level and bank's risk for banks whose relative capital ratio is close to the regulatory

minimum, but it is not for banks with a large capital level. This indicates that well capitalized banks maintain starting capital buffers, whereas the poor capitalized banks reduce risk when capital increases in order to create suitable capital reserve.

13-A study by Buehler & Gunnar (2004) entitled "The Business Case for Basel ll". This study examined the details pertinent to Basel ll Accord and some banks' willingness to implement the accord at the end of 2006 and the first track within the minimum limits of capital requirements in particular. Only a few banks have started to provide compliance with these requirements, comprehensive program provision, in addition to development of classification systems for them. The study touched a little on credit risk mitigating techniques and instruments and the importance of the presence of a work plan and a crisis management to face unexpected events.

14- A study by Bher and Lee (2004) entitled "The Effect of Credit Transfer on Bank Monitoring & Firm financing". This study examined the relationship between the effect of credit risk transfer tied to the bank credit portfolio on the extensive and strict control carried out by the bank, on one hand, and whether the credit risk transfer has an impact on the value of financing presented to companies, on the other hand. The study model dwelt on the importance of diversification as one rational decision in credit transfer. The study was conducted on two banks which had strict control and a large amount of available financing in the economy. The strategy of credit risk transfer which some banks take might have effect on their business strategy and other bank operations. The study concluded that the credit risk transfer can serve the diversification of credit portfolio of the bank and may decrease some of bank control motives on borrowers.

15-A study by Bauer and Ryser (2004) entitled "Risk Management Strategies for Banks". This study dwelt on the optimal strategy in bank risk management through the use of hedging instruments and techniques and their direct impact on maximization of equity. Hedging usually takes place in the bank's different activities. These activities include credit facilities management or indebtedness, liquidity management, fluctuation in assets, margin between the paid interest rate and the paid interest on deposits. The study's basic model was expanded to include risks of the other party through the use of future contracts as one

instrument of hedging. The study was built on a group of hypotheses and equations and the one-interval model or cross section. It was also based on the explanation of the relationship between the market, which has two risky assets, and the importance of hedging in the field, on one hand, and the bank through its direction towards realization of the shareholders interest by maximizing the value of equity, on the other hand. When the capital is put, the bank has to choose a hedging strategy after the deposits have increased. The study concluded that the use of hedging strategies are an important instrument in reducing the bank's macro risks and have an impact on maximization of equity.

16-A study by Bichsel and Blum (2004) entitled "The Relationship between Risk and Capital in Swiss Commercial Banks: A panel Study". The study investigates the relationship between changes in risk and change in leverage of Swiss banks covering period of 12 years between 1990 and 2002 using a sample of 19 publicly traded Swiss banks. The study found a positive and highly significant correlation between change in capital and risk. An increase in the capital ratio of 1 percent is associated with an increase of 1.2 percent in volatility of the bank's assets on average. This indicates that banks with capital base could engage in risky activities.

17-A study by Li (2003) entitled "The Asian Financial Crisis and Non-performing Loans: Evidence from Commercial Banks in Taiwan". The study investigates the factors affect non-performing loans in Taiwan. He used panel data of 40 Taiwanese commercial banks for the period 1996-1999. The study found a significant and negative relationship between the bank's loans and non-performing loans. When banks loans increase, non-performing loans increase at diminishing rate. Also the study found a significant and negative relationship between the bank's sizes measured by the total assets and non-performing loan ratio. This suggests that large banks have more resources to evaluate and process their loans, which improves the quality of loans and thus reduces the rate of non-performing loans.

18-A study by Raspanti and Szakal (2002) entitled "Creating Value through Credit Risk Mitigation". The study examined the impact of the trend of using credit risk mitigations and techniques to improve the quality of revenues and their impact on the value of the bank

in normal and bad conditions. A number of factors have been studied: the use of pre-preparedness to mitigate the risk, commercial credit insurance and the bank's strategy in the degree of accepting or rejecting the portfolio risk and determination of what type of credit risk mitigations is being adopted and the effect of these factors combined on the value of the bank. The study concluded that the availability of preparedness by the bank for hedging and reducing credit risk is important. It also stressed the importance of the availability of an appropriate strategy to deal with the risks, choice of an appropriate mitigation instrument and the impact of the bank's continuity and improvement of the bank's profitability image and value.

19- A study by Altman (2002) entitled "Managing Credit Risk, A Challenging for the New Millennium". This study sought to highlight the importance of credit risk management which was not as important as the current high default rates and rates of bankruptcy cases. Law makers, supervisors and practitioners in the securities markets show interest in proper practices and applications in this field. This is attributed to several considerations such as increasing emphasis on appropriate techniques in credit risk management, variable legislative environment based on Basel Accord, and credit classification systems, namely the scoring systems, creation of databases based on credit deterioration and defaults, re - coverage, dealing with bank loan guarantees, development of techniques that work as mitigations to reduce and transfer credit risks like credit derivatives, credit securitization, credit insurance products and credit portfolio management techniques. The study reported an increase in the transfer of credit institutions of their risky assets to the other party. This factor has helped to provide an incentive that is in line with a number of important components in terms of company and management, evaluation, techniques, structure of assets of credit products and credit portfolio management approaches. This is in addition to interest in comprehensiveness, appropriate databases and expansion in credit derivatives, and hedging structure. The changes came from default levels and losses due on company bonds, payments and loan market, thus requiring effecting changes in appropriate capital allocation for credit assets, according to Basel Committee guidelines, and the importance of credit portfolio diversification. The study concluded that the new millennium is

experiencing giant steps to create more advanced techniques that contribute to the mitigation of vulnerability of credit risk values. These include credit derivatives as one hedging and protection instrument, transfer of risks pertinent to defaults and credit deterioration. A significant growth has been reported by the banks in the market of credit derivatives. The importance of these derivatives lies in the fact that their sellers are provided with insurance against any events and any fluctuation which might happen to the assets.

20- A study by Pyle (1997) entitled “Bank Risk Management: Theory". This study, presented at Haas Business School, University of California, examined the importance of risk management, foundations of contemporary risk management with emphasis on two types of risks: credit risks and market risks. The study argued that there are two ways to measure market risks: scenarios and value-at-risk. It also argued that there are several ways to measure credit risks. These include scoring system, rating system, and credit committees to assess credit eligibility of the counter party.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

In this chapter, the researcher presents the methodology he used in the study. It consists of the research design as well as the population of the study and participants in the study. It also includes data collection and instruments used for data analysis. It concludes with the models and the components of the models; dependent and independent variables.

3.2 Research Approach

To achieve the aims and objectives of this research, a combined methodology of both quantitative and qualitative approaches was applied. The quantitative approach in this research was mainly used to answer the first two research questions. In order to get a general understanding of the major Palestinian banks' credit risk management level of their lending decision quality performance, within the study period, ratio analysis was adopted. That is, the researcher used the regression model to analyze the data collected from the annual audited reports of the Palestinian banks, Association of Banks in Palestine and the Palestinian Monetary Authority (PMA). Based on the result of regression output and feedback from the research questions, an analysis was conducted and research questions were answered. The major hypothesis for testing was whether credit risk policies and techniques adopted by Palestinian banks affected their profitability. The researcher selected five major commercial banks in the country which submitted their annual reports to the PMA from 2005 - 2011.

For that reason, the researcher made 35 observations in the regression analysis. Theoretically, the number of observations should be 20:1 (20 observations per one independent variable) in the regression analysis and as low as 5:1.(as cited by Princeton University.).

The qualitative study part in this research provides can actually be viewed as a collective case study, which, as defined by Silverman (2005), a number of cases are studied in order to examine some general phenomenon and answer the third question of this study. As to the techniques chosen for this part of the research, textual analysis was employed and a comparison method was also used. It is believed that these methods are suitable for this part of the research because through analysis of the performance reports of sample banks, access to all the available information needed in the research can be acquired and estimation can be made, providing both a separate evaluation and generalization on the sample banks' credit risk management practices.

3.3 Sample Population and Participants

Palestinian commercial banking sector has been chosen for the purpose of this study; however, two Islamic banks have been excluded from this study. In other words, five Palestinian commercial banks comprised the study sample (see Table 3.9). The necessary data were collected from each bank's annual audited financial statements, the Association of Banks in Palestine and from Palestinian Monetary Authority (PMA)'s Annual Reports, for sake of comparison. Those data covered 2005 to 2011, and were used to do the regression analysis.

Table 3.11: Selected data for the sample banks for the year 2011 in USD millions

No	Bank	Total Assets	Total Equity	Customer Deposits	Net Loans
1	Bank of Palestine(P.L.C)	1653.9	194.4	1242.7	720.15
2	Al-Quds Bank	467.6	54,5	315.7	288.38
3	Palestine Commercial Bank	168.8	28	105.8	56.5
4	Palestine Investment Bank	242.1	63.5	118.9	78.8
5	Al-Rafah Bank	247.3	29.2	115.9	76.3

Source: Palestinian Bank's Annual Reports, 2012

3.4 Data Collection

The primary data used for the study were from Annual Reports from 2005-2011. The study necessitates looking into credit risk management disclosure, financial statements and notes to financial statements in the annual reports of the sample banks. In Palestine, banks must submit their annual reports to the PMA, so it's easy to get all annual reports of selected banks from the PMA and online .The researcher interviewed the credit risk control departments' officers in the study sample banks except Al-Rafah Bank. The interviews helped to increase knowledge of the policies and practices adopted by the sample banks. The interviews' answers, however, were not used to make analysis or draw conclusions. The data collected were classified into two categories:

a. Quantitative Data

The quantitative data were five financial ratios measuring the five independent variables of the study. They are related mainly to banks' credit risk policies and management. The description of the five ratios was explained in the part about the procedural definitions of variables and measurement.

b. Qualitative Data

The qualitative data needed in this research mainly came from the five audited banks' annual reports and other published results. After examining all the reports, it was found that some of them had independent review sections on credit risk management. Those reports outlined items such as banks' credit risk management policies, structures and exposures. Besides, the interviews that have been made with the credit risk control departments' officers of the sample banks provided the information necessary to complete this part and achieve the research objectives. The consultative papers issued by Basel (2000) also played an important role given their updated and detailed requirements on banks' credit risk management which served as the benchmarks in achieving the research objectives.

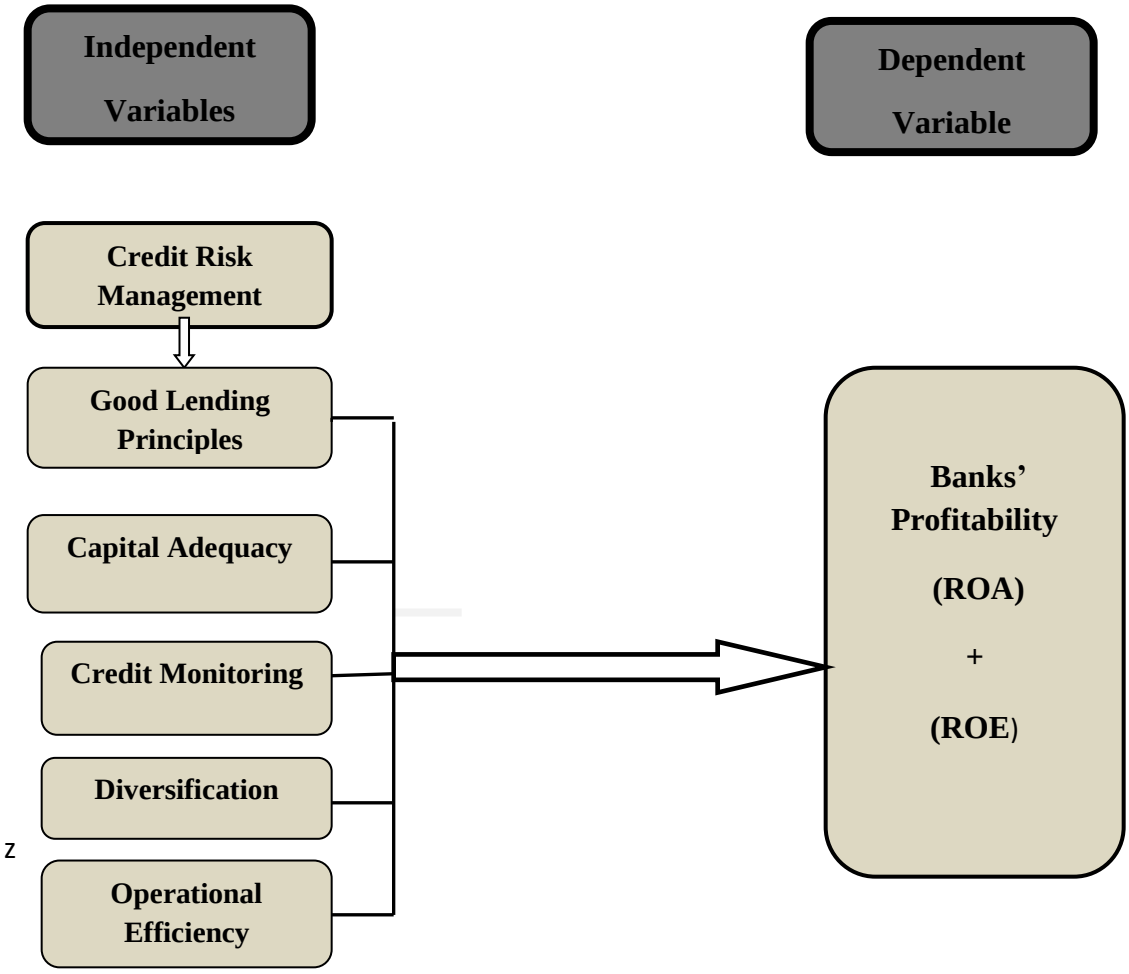
3.5 Data Analyzing Instruments

The researcher used multiple regressions to analyze the data collected from banks. This means there was a dependent variable and five independent variables in the model. The regression outputs were obtained by using SPSS.

3.6 Applied Regression Model

In the light of the elements and the dimensions of the problem, the researcher built two study models on the basis of the relationship between the independent variables of credit risk management (expressed in terms of Good Lending Principles, Capital Adequacy, Credit Monitoring, Income Diversification and Operational cost efficiency on the one hand and the dependent variable (Bank's Profitability) on the other hand (see Figure 3.15). Based on that, the researcher used multiple regression models with one dependent and five independent variables in this study.

Figure 3.15: Study Model



3.6.1 Procedural Definition of Variables and Measurement

In the regression model, the researcher considered the following:

3.6.1.1 Dependent variable

The researcher used Return on Assets (ROA) and Return on Equity (ROE) as profitability indicators in the regression analysis because the former and the latter ROE have been widely used in previous research.

1-ROA: ROA ratio explains the relationship between net income and total assets. The reason for selecting this ratio as profitability measurement is attributed to the fact that using net income for funding purposes forms an incentive and goal for institution's management to increase their return on investment. ROA has been used in most of the studies for the measurement of the profitability of the banks. ROA measures how much the company earned as a profit per dollar of assets and reflects how well bank management uses the bank's real investments resources to generate profits (Naceur, 2003; Alkassim, 2005; Bashir, Abdel Hamid, (2003; and Laeven and Majnoni, 2003).

ROA= Net Income after Tax/ Total Assets

2-ROE: Return On Equity (ROE) is an indication to the company profitability by comparing its net income to its average shareholders' equity. ROE measures how much the shareholders earned from their investment in the company. The higher the ratio is better for shareholders, since it's an indication of companies' management in utilizing their funds.

This ratio is intended to measure the risks to which the commercial banking are subjected through depending on money borrowed for financing its assets. Regarding this area, a lower indicator means that the bank depends on borrowed funds for financing its assets, thereby increasing capital risks. ROE ratio has been widely used in previous researches (Bikker and Metzemakers (2004), Davis and Zhu (2005) and Abu rime, Toni Uhomoibhi (2008).

ROE = Net Income after Tax/ Total Equity

3.6.1.2 Independent Variables

The researcher chose credit risk management as a explanatory variable which is measured by five financial independent variables namely Good Lending Principles, Capital Adequacy, Credit Monitoring, Income Diversification and Operational Cost Efficiency. These variables are indicators of credit risk management and affect the profitability of banks. These variables were measured, using financial ratios available in the financial statements of Palestinian commercial banks. These ratios are NPLR, EQTA, LLPI, NIDR and OPNI. These financial ratios are indicators of credit risk management affecting bank's profitability (see table 3.12). The first ratio, NPLR is incorporated as a proxy of good lending principles. EQTA ratio is incorporated as a proxy of Capital Adequacy. LLPI ratio is incorporated as a proxy of credit monitoring after issuing the credit. NIDR ratio is incorporated as a proxy of diversification of bank's income. Finally OPNI ratio is incorporated as a proxy of operational cost efficiency in controlling overhead costs.

Table 3.12: Summary of the independent variables employed in the study

Variable	Measurement	Description
Good lending Principals	Non-performing Loans to Gross Loans Ratio	NPLR
Capital Adequacy	Equity to Asset Ratio	EQTA
Credit Monitoring	Loan loss Provisions to Net Interest Income	LLPI
Income Diversification	Total Revenue-Interest Income to Total revenue	NIDR
Operational Cost Efficiency	Non- Interest Expense to Net Interest Income + Noninterest Income	OPNI

Source: Zidan (Auther), 2013

A. Good Lending Principals

The use of good lending principles mitigates the portfolio credit risk to minimum levels, and maintains levels of returns up, which positively affects the bank's value. The reliance on good lending principles in the credit risk mitigation takes several forms, including:

- Safety (the money will definitely come back): The bank ensures that the money advanced to the borrower goes to the right type of borrower and is utilized in such a way that it will not only be safe at the time of lending but will remain so throughout, and after servicing a useful purpose, it is repaid with interest.
- Liquidity: Liquidity as good lending principle is an indication to the bank's ability in bringing back the loaned money on demand, upon the agreed terms of repayment. And the bank also must identify source of repayment by the borrower.
-Purpose: The purpose of the loan is considered an important factor in the credit analysis process. The loaned funds must be invested or used in a productive way and provide a definite source of repayment. Also the bank analyze wither credit funds is employed in investments that comply with the bank's strategy, for example, some banks does not credit money used in real state.
-Profitability: Since commercial banks are profit-earning institutions, they must utilize their funds in profitable investments and activities. In other words earn sufficient funds (profits) after covering all its interests and meeting different other establishment expenses.

Good lending principles (Asset quality) are one of the most critical areas in determining the overall condition of a bank. The quality of the credit portfolio and credit administration function is the fundamental factors affect the total asset quality. Loans are usually the largest of the asset items and can also hold the greatest amount of potential risk to the bank's capital account.

Several ratios can be used for measuring lending principles; however, not all information on the loans is always available. The researcher chooses one ratio, namely NPLR, because this ratio is the major indicator of asset quality (credit risk management) which affects the profitability of banks. NPLR: This is one of the most important criteria to assess the quality of loans or asset of a commercial bank. It measures the percentage of gross loans which are

doubtful in bank's portfolio, the lower the ratio of NPLR is, and the better the asset / credit profitability of a commercial bank is. The credit profitability of the banks moves adversely with this ratio.

To calculate this ratio, the researcher used the data provided in the annual report of each bank. From 2005 until 2011, NPL amount had been presented using different names: impaired loans, problem loans, doubtful claims and loan allowances. However, the definitions of those are similar to the definition of NPLs. NPLs amount is provided in the notes of financial statements under loans section. The researcher collected the loan amount provided in the balance sheet of the banks in their annual reports. Thus, calculation of the NPLR was accomplished in the following way:

NPLR= Non-performing Loans/ Total Loans

B. Capital Adequacy

Capital adequacy refers to "the sufficiency of the amount of equity to absorb any shocks that the bank may experience" (Kosmidou, 2009). Capital adequacy is a measure of the financial strength of a bank; it is commonly expressed as capital to its assets ratio. Capital ratios are based on a set of key items in both assets and liabilities of banks. They reflect the readiness of the capital of banks to withstand some of the expected and unexpected risks that may arise, or risks that may face the banking industry at large, especially because the capital represents the first line of defense in such situations.

Several ratios can be used for measuring Capital Adequacy. The researcher chose the ratio of EQTA (Total shareholder's equity/ Net assets). This has been used as an indicator of capital adequacy.

EQTA ratio: It measures equity capital as percentage of total assets; EQTA measures the total bank's ability or capacity to absorb for potential loan asset losses. In other words, it indicates the ability of a bank to absorb losses and handle risk exposure with shareholders. This ratio is expected to have a significant positive effect on ROA and ROE.

EQTA= Total Shareholder's Equity/ Total Assets

C. Credit Monitoring

Usually the monitoring process starts after loans are disbursed. The primary purpose of credit monitoring process is to identify any changes or possible changes on the borrower's financial position or its repayment capacity of the credit funds. These may be weaknesses in the borrower's industry, financial condition or performance, changes which could impact the borrower's capacity to repay the loan in accordance with the credit agreement.

Receiving continues financial statements, close review and contact with the borrower are an important and effective credit monitoring key. The analytical framework analyzed and developed in the early stage should be used to path borrower's performance. Credit officer should monitor any negative changes and weakness and inspect any identified decline in the borrower strengths. Also the bank must have clear and close attention to the borrower's ability to repay the loan by continues checking of sources of repayment and collateral.

This variable was measured through financial ratios available in the financial statements of Palestinian commercial Banks. The ratio of loan loss provisions to net interest income (LLPI) was used as proxy of credit monitoring.

LLPI: It is a measure of credit quality, which indicates high credit quality by having low numbers. It's an indicator of the quality of the bank's loan portfolio and, therefore, it can be seen as a proxy of credit risk. This variable is considered in the analysis in order to examine whether there exists a systematic relationship between the levels of credit risk and ROE borne by Palestinian banks. It is a ratio which measures the credit risk provision relative to net interest income, indicating the respective subjacent effect of credit risk in both numerator and denominator.

LLPI = Loan Loss Provisions / Net Interest Income

D. Income Diversification

The mixture of banks activities is an important indicator of the overall level of risk the bank engages in. For commercial banks as financial intermediary, the concept of diversification is crucial for the bank as risk management technique, in which the risks involved in the bank's operations spread over various numbers of borrowers, industries and sectors. The bank may find it difficult to apply geographic diversification technique, if the

country where the bank operates is small or its capital is weak or constrained. Since Palestine is a small country and Palestinian banks do not have strong capital, the researcher has focused on bank's diversification of its income (activity mix). In other words, the concentration was on non-traditional activities (fee-based services). The diversity of bank's activities is considered an important indicator of the whole risk level performed by the bank, since various sources of return are characterized by different levels of credit risks.

The ratio of non-interest income to total income (NIDR) was used as an indicator of activity mix. Therefore, the NIDR was used as proxy of diversification.

NIDR ratio: This ratio measures the rate of non-interest income as a share from the bank's total income (such as fees and commissions). Although fee-based services add income to banks, those services in general generate less profit when compared to loans. When banks depend largely on non-interest income services, bank's profitability may decline. Therefore, the ratio is expected to have a negative effect on profitability.

NIDR = (Total Income - Interest Income) / Total Income

E. Operational Cost Efficiency

A major contributor to insufficient level of profitability is a weak or poor expense management (Sufian and Chong, 2008). In the literature on bank performance, operational expense efficiency is usually used to assess managerial efficiency in banks. One of the significant and major objectives for bank's management is the efficiency and effectiveness of utilization of resources.

In response to the increasing competition from nonbank institutions and from banks expanding into new markets, banks should improve their return and to control costs. The concept of efficiency had different meanings and definitions in the literate. The most common, seems to be cost efficiency management, which indicate to bank's ability to avoid dispensable costs (Weill, 2004). This efficiency concept has often been used as the only definition. This variable was measured through financial ratios available in the financial statements of Palestinian commercial banks. The ratio of Non-interest expense divided by Net interest income plus Noninterest income (OPNI) is expected to have a

negative significant effect on the bank's profitability, in which a lower ratio is the better for the bank's efficiency.

OPNI= Non- Interest Expense / (Net Interest Income + Noninterest income)

3.6.3 Regression Analysis Explained and Hypothesis Development

The regression analysis was conducted to find out the following:

- The relationship between credit risk policies and profitability in five banks: the researcher used 7 year period (2005-2011) for five banks with a total of 35 observations.
- Credit Risk Management Techniques and Practices at Palestinian commercial banks and their effect on bank's profitability.

In the light of study objectives, the present study sought to test the following hypotheses; Hypotheses can be classified into one major hypothesis subdivided into five sub-hypotheses:

Major premise: There is no significant relationship between credit risks management and banks' profitability. A sub-hypothesis emerges from the major one.

H0 1: There is no significant relationship between asset credit quality (good lending principles) and bank's profitability.

Ho 2: There is no significant relationship between capital adequacy and bank's profitability.

H0 3: There is no significant relationship between credit monitoring and bank's profitability.

H04: There is no significant relationship between income diversification and bank's profitability.

H0 5: There is no significant relationship between bank's operational cost efficiency and bank's profitability.

Based on that, and in the light of the elements and the dimensions of the problem the researcher employed the multivariate regression model (presented below) to highlight the relationship between the independent variables (lending principles, credit monitoring, capital adequacy, income diversification and operational efficiency) on the one hand and

the dependent variable (return on equity) on the other hand. The following mathematical equation illustrates the model:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + \varepsilon$$

Where:

Y: Return on Assets (ROA)

Y: Return on Equity (ROE)

(x1): Good Lending Principles

(x2): Capital Adequacy

(x3): Credit Monitoring

(x4): Diversification of Income

(x5): Operational Cost Efficiency

Standard	**Our application**
Y – the value of dependent variable; α – the constant term; *X* – the value of independent variables: β - the coefficient of the function; ε – the disturbance or error term.	Y: ROA+ ROE- profitability indicator X_1: NLPR –credit risk management indicator X_2: EQTA–credit risk management indicator X3: LLPI–credit risk management indicator X4: NIDR–credit risk management indicator X5 :OPNI_credit risk management indicator

Thus the regression equations become:

Model I

$$ROA = \alpha + \beta 1\,(NLPR) + \beta 2\,(EQTA) + \beta 3\,(LLPI) + \beta 4(NIDR) + \beta 5(OPNI) + \varepsilon$$

Model II

$$ROE = \alpha + \beta 1\,(NLPR) + \beta 2\,(EQTA) + \beta 3\,(LLPI) + \beta 4(NIDR) + \beta 5\,(OPNI) + \varepsilon$$

3.6.4 Statistical Methods Used in the Study

SPSS statistical software was used in the analysis process for the following purposes:

1-The Multiple Linear Regressions was used since there were several independent variables.

2-The T- Distribution test for the proposed hypothesis was used to examine the relationship between the dependent and independent variables. The null- hypothesis can be tested using Sig- T). If it is > 0.05 the null- Hypothesis will be accepted and if it is < than 0.05 the alternative hypothesis will be accepted.

3-The F-Test was used to examine the appropriateness of the model as a whole. The F-value was calculated as (R2/1)/((1-R2/n19-2)) and associated P-value shall be looked at to measure the effect of the group of independent variables on the dependent variable. The resulting F value should be compared to the critical F-value (Fv1, v2) which is taken from the F distribution table. For instance, in our case, we had four independent variables and 35 observations. Then V1=4, and V2=n-k-1=35-4-1=30 (N represents the number of observations and k represents the number of variables). Thus, the critical value of F (2.689) can be found in the distribution table accordingly. If the resulting F-value exceeds the critical F-value, it can be said that the regression as a whole is significant.

4-The Variance Inflating Factor (VIF) was used to examine the overlap (relationship) between the independent variables. It's a measure of the amount of multicollinearity in a set of multiple regression variables. Statisticians agree that this factor should be less than 10 (Gujarati, 2003).

5-Durbin- Watson test was used. Durbin-Watson (DW) statistics is the ratio of sum of squares of successive differences of residuals to the sum of squares of errors. As a rule of thumb, if the DW statistic is less than 2, there is evidence of positive serial correlation (Büyüksalvarcı and Abdioğlu, 2011). Statisticians agree that if this factor is close to 2, then there will be no serial correlation between independent and dependent variables.

CHAPTER FOUR
EMPIRICAL FINDINGS AND ANALYSIS

4.1 Introduction

In this chapter, the researcher presents the results of the regression models that measure the independent variables (Good Lending Principals, Capital Adequacy, Credit Monitoring, Income Diversification and Operational Cost Efficiency and the dependent variables Return on Assets (ROA) and Return on Equity (ROE), the profitability measurements by using financial ratios. We analyzed the results, to accept or reject the hypothesis related to the effects of independent variables on dependent variable, describe the impact of credit risk management on profitability, trend analysis of sample bank's profitability and the independent variables used in the study from 2005 - 2011 will be presented.

4.2 Trend Analysis of Dependent and Independent Variables

This part of the study aimed at establishing the general trend of profitability (ROA), (ROE) and the five banking-sect oral factors (Nonperforming Loans (NPLR), Capital Adequacy (EQTA), Loan Loss Provisions (LLPI), Income Diversification (NIDR) and Operations Costs (OPNI) in the five sample commercial from 2005 - 2011.

4.2.1 *Trend Analysis of Profitability*

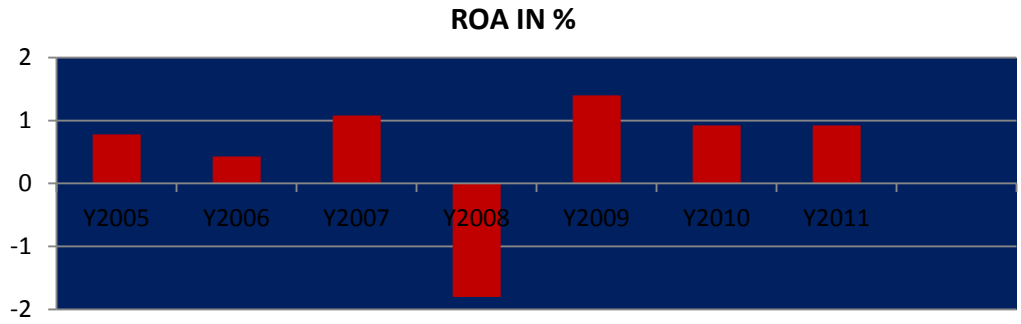
Tables 4.13 reported the mean scores of ROA for study sample over the study period from 2005-2011.

Table 4.13: The annual values and mean scores (%) of profitability (ROA) from 2005 to 2011

	2005	2006	2007	2008	2009	2010	2011
Bank of Palestine	2.4	2.3	2.43	2.25	2.1	1.9	2.1
ALquds bank	.-4	-1.17	0.4	-2.3	0.80	1	1
Palestinian Investment bank	1.8	1.79	1.67	1.37	1.19	.60	1
Palestinian Commercial bank	-.2	-0.40	0.06	.14	1.50	1	.30
ALrafah bank	.3	-0.33	0.83	-3.25	1.10	.10	.20
Mean	.78	.43	1.08	-1.8	1.4	.92	.92

Source: Research Data, 2011

Figure 4.16: Return on Assets (ROA) from 2005 till 2011 in (%)



The reported results in table 4.13 indicated that ROA (profitability measurement) in the five sample banks, increased 18% from 2005 - 2011(.78% to .92%). This rising was due to the increased of good profits earned by Bank of Palestine during the study period in particular, which is considered the largest Palestinian commercial bank. Despite the positive improvement, still the sector comparable to industry international standards less efficient and having weak performance (ROA of more than 1.5% indicates good performance (Flamini et al, 2009)).The mean score of ROA for the whole sector (five banks) was .74%, therefore, this means that the performance of the five sample banks were less comparable to international standards particularly in the year 2008, which had the lowest ROA (-1.08%), that's attributing mostly to the loss achieved by AlQuds and AlRafah banks (-2.3 and -3.25 respectively). also the declined rate of profitability in that year could be due to instability of political and economic conditions surrounding Palestine, however, the mean score of ROA for the whole sector (five banks) reached the peak in 2009 (1.4%) that's attributing to high profitability by Bank of Palestine (2.1%) and Palestinian Commercial Bank (1.5%), the ratio has increased(-1.o8 to 1.4%) by almost 260% in that year.

According to Return on Equity (ROE) as profitability indicator, there was a negative and fluctuation trend in ROE. The reported results in table 4.14 indicated that the profitability, which measured by Return On Equity (ROE) of the five sample banks had slightly visible decline since 2005 till 2011 in the five sample banks, however, in 2009, as well as ROA, ROE increased has increased by 220%. (.4% to 8.8%). The mean score of ROE for the five

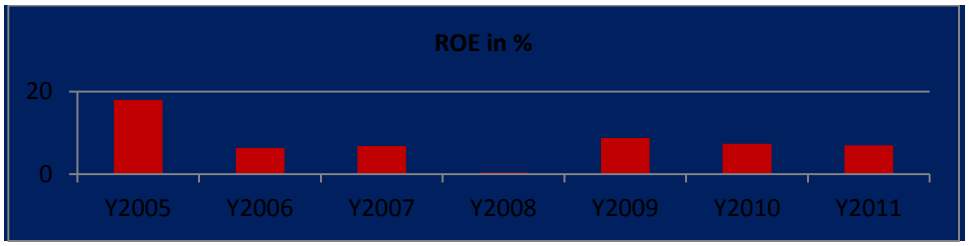
sample banks reached the peak in 2005 (18%) that's were attributing to high profitability achieved by Palestinian Investment Bank and Bank of Palestine (51% and 33% respectively) which related to stable economic and political conditions in the Palestinian market at that time and then declined to 6.98% in 2011 showing decrease of almost 200%. In the year 2008, the mean of ROE was the lowest during the study period (.4%) since AlQuds and Alrafah banks, had the lowest ROE (-13.56 and -12.47 respectively) in that year comparing with the other banks as well. This was due to the economic downturn, and the uncertainties on the Equity market which related to unstable of economic and political conditions in Palestine. ROE of more than 15% indicates good performance (Flamini et al, 2009). Therefore, this means that the performance of the sector was lower than international standards and has weak performance despite the decreasing rate of Nonperforming loans and an increasing rate of credit. This decline could be attributing to the increase of bank's Equity more than the increase rate of net income for most of studied banks, in response to Palestinian Monetary Authority (PMA)'s instructions for commercial banks to raise their Capital base to minimum fifty million USD dollars. It should be noted that bank of Palestine (PLC) is the largest bank among the rest, and achieved the best performance (the mean of ROE during the whole period is 22.7%). It depicts that the larger banks are better placed than smaller banks in harnessing economies of scale in transactions to the plain effect that they will tend to enjoy a higher level of profits.

Table 4.14: The annual values and mean scores (%) of profitability (ROE) from 2005 to 2011

	2005	2006	2007	2008	2009	2010	2011
Bank of Palestine	33.6	24.74	22.8	19.17	17.9	18.4	17.5
ALquds bank	2.8	-3.9	2.1	-13.59	5.7	8.7	8.4
Palestinian Investment bank	50	6.44	6.82	4.8	4.8	2.5	4
Palestinian Commercial bank	7.5	-2.1	0.39	.58	7.6	6.4	2.1
ALrafah bank	-4.9	-0.53	2.64	-12.2	6.4	.70	1.9
Mean	18	6.33	6.82	.40	8.8	7.4	6.98

Source: Research Data, 2013

Figure 4.17: Return on Equity (ROE) from 2005 till 2011 in (%)



Source: Data Analysis, 2013

4.2.2 *Trend Analysis of Nonperforming Loans (NPLR)*

From the previous studies it is clear that commercial bank's profitability mainly depends on assets quality held by the bank, and the assets quality depends on the financial strength of the borrower. In the literate many indicators have been used as asset quality measurement. One of the important and major information's provided by a bank is loans (Yike et al., 2011). However, only one simple indicator – Nonperforming loan ratio was used to measure the lending principals adopted by banks which affect the quality of assets being held by them.

Table 4.15 showed the mean scores of Nonperforming Loans to Total Loans (NPLR) from 2005 - 2011. The non-performing loan to gross loan ratio was decreasing for the five sample banks, which was a good sign of loan quality improvement in those banks. NPLR between1.5- 6% indicates good performance. By analyzing the ratios of each bank individually (see Appendix 5), it was found that most banks had improvement in dealing with nonperforming loans particularly after year 2008. The mean score of NPLR for the whole sector (five banks) reached the peak in 2005 (19.1%) that's attributing to instability of political and economical conditions in previous years (Intifadah). Another major reason for that bad rates achieved, was the weakness of credit policies adopted by most banks at that time and lack of credit standards followed, since most of study sample banks are newly established. Despite the decreasing trend of NPLR which is a good sign of improvement, still there were a high level of defaults among borrowers in Palestine (the average mean

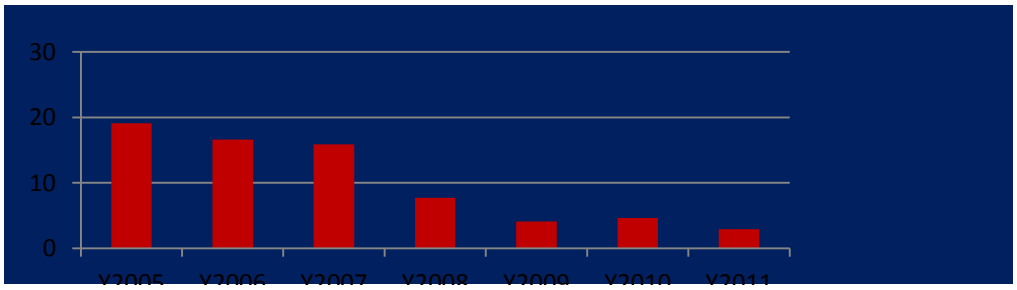
score of NPLR is 10.13%), which is higher than international standards (around 1.5- 3 %%). This could be due to macroeconomic factors. High credit risk indicators in particular, non-performing loans, were due to macroeconomic instability.

Table 4.15: The annual mean scores (%) of Nonperforming Loans (NPLR) from 2005 – 2011.

Variable	2005	2006	2007	2008	2009	2010	2011	Average Mean
NPLR	19.1	16.6	15.9	7.72	4.11	4.62	2.92	10.13

Source: Research Data, 2013

Figure 4.18: Nonperforming Loans (NPLR) from 2005 - 2011 in (%)



Source: Data Analysis, 2013

4.2.3 *Trend Analysis of Capital Adequacy (EQTA)*

Table 4.16 showed the mean scores of Total Equity to Total Assets. The Capital Adequacy results suggest that about 20% of total assets held by the sector were financed by Shareholders funds while the remaining 80% were financed by other sources, particularly deposit liabilities. The high leverage is not surprising because the business of banking is to mobilize more deposits from customers. The PMA stipulates that banks must keep Core Capital of no less than 8% of total deposit. This implies that Palestinian banks on average operated above minimum statutory levels.

Table 4.16 showed some fluctuation from year to another in the five sample banks, EQTA was the highest in 2006 (30%), after that it continued declining till 2011 where reached the

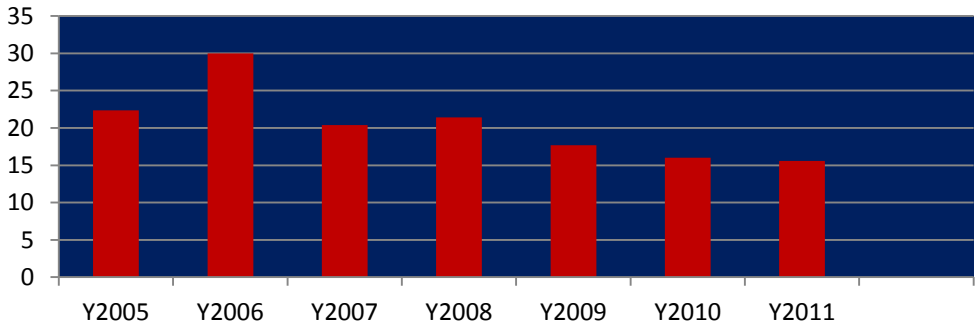
lowest (15.6%). This declining was attributed to the increasing trend of Bank's Assets (particularly from the continuous increasing rate of credit facilities as a major component of the banks' assets) more than the increasing rate of Shareholder's Equity. Generally speaking, despite the declining trend, the ratio still higher than neighbor countries as Jordan and Egypt (around 13%)

Table 4.16: The annual mean scores (%) of Total Equity to Total Assets from 2005-2011

Variable	2005	2006	2007	2008	2009	2010	2011	Average Mean
EQTA	22.36	30	20.4	21.4	17.7	16	15.6	20.5

Source: Research Data, 2013

Figure 4.19: Capital Adequacy from 2005 till 2011 in (%)



4.2.4 *Trend Analysis of Non Interest Income (NIDR) (Income Diversification)*

Table 4.17 reported the mean scores of Noninterest Income to Total Income (NIDR). The results suggested that about 32% of the total income of the sample banks were from Noninterest Income while the remaining 68% were from interest products. Figure 4.20 showed that Palestinian banks still largely depend on interest income in generating their income with fluctuation trend of noninterest income activities, since the major revenue generated by commercial banks comes from lending activities. The mean score of NIDR for the five sample banks reached the peak in 2009 (40%) which was reflected in the increased rate of ROA and ROE in that year by 190% and 8.4% respectively. This increase

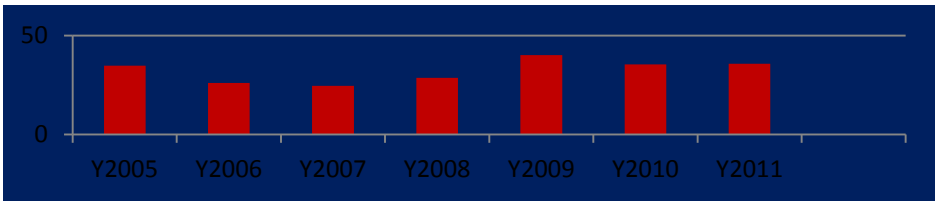
was attributed to the financial crisis hitting the word in 2007- 2008, in which banks became conservative in their lending operations that depend largely on fee based services.

Table 4.17: The annual mean scores (%) of Noninterest Income to Total Income of 2005-2011

Variable	2005	2006	2007	2008	2009	2010	2011	Average Mean
NIDR	34.8	26	24.6	28.5	40	35.3	34.7	32

Source: Research Data, 2013

Figure 4.20: Noninterest Income from 2005 till 2011 in (%)



4.2.5 *Trend Analysis of Loan loss Provisions (LLPI)*

Table 4.18 below, reported the mean scores of Loan Loss Provisions as a Share of Net Interest Income. The results suggested that Loan Loss Provisions represent about 16% of Net Interest Income which is around the industry standards.

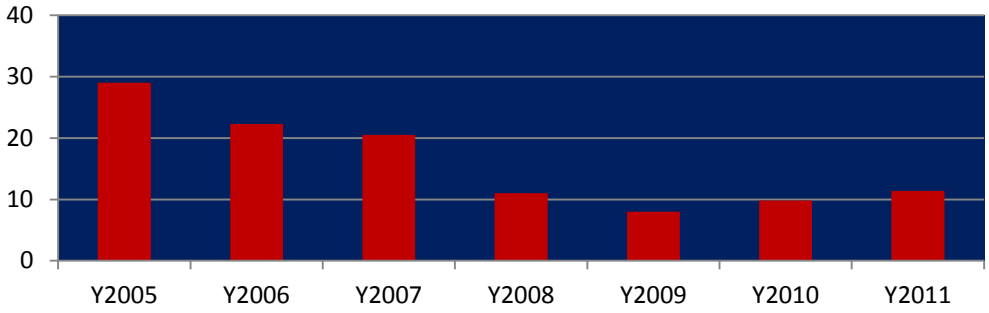
Figure 4.21 showed significance decline in LLPI from 2005 - 2010 particularly in the year 2009. This decline could be attributed to the significance decline in nonperforming loans and to the improvements in net interest income. However, in 2011 the ratio raised, because of the high loan loss provisions related to the Palestinian commercial bank (19%).

Table 4.18: The annual mean scores (%) of Loan Loss Provisions to Net Interest Income, 2005-2011

Variable	2005	2006	2007	2008	2009	2010	2011	Average Mean
LLPI	29	22.3	20.5	11	8	9.8	14.4	16

Source: Research Data, 2013

Figure 4.21: Loan Loss Provisions to Net Interest Income (LLPI) from 2005 - 2011 in (%)



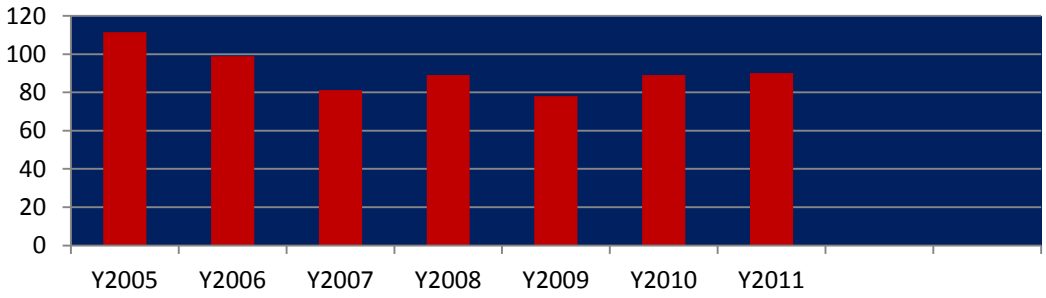
4.2.6 *Trend Analysis of Operational Costs (OPNI)*

Table 4.19: The annual mean scores (%) of Non Interest Expense to Net Interest Income plus Noninterest Income from 2005 -2011.

Variable	2005	2006	2007	2008	2009	2010	2011	Average mean
OPNI	111.5	99	81.2	89	78.3	89	90	91.14

Source: Research Data, 2013

Figure 4.22: The annual mean scores (%) of Non- interest Expense to Net Interest Income plus Non-interest Income from 2005 -2011:



Source: Data analysis, 2013

Table 4.19 reported the mean scores of Non-Interest Expense to Net Interest Income plus Non-interest Income. It is a measure of how effective a bank is in using Operational Expenses including salaries, benefit costs, occupancy expenses and other operating

expenses in generating revenues. An efficiency ratio of 50 percent, for example, means that a bank is spending 50 cents to generate a dollar of income. Other things being equal, a decrease in the efficiency ratio is viewed as a positive while a rising efficiency ratio is generally undesirable. According to the five sample banks there were a steady trend in the operational expense from 2005 till 2011. The ratio declined by 19% (111.5% in 2005 to 90% in 2011). Looking at each bank separately, we can see that there is an increasing trend in operational expenses year after year. The average mean of the ratio for the sample banks was (91%), much higher than industry standards (around 60%). It should be mentioned, that bank of Palestine is the only bank had good control on its operational expenses.

4.3 Multiple Linear Regression Analysis

One of the functions of multiple linear regression that examines the strength of the relationship between independent variables and dependent variable, In addition to that it works on framing this relationship in a mathematical model used for prediction .(Gujarati, 2003).

This part will present the results of multiple linear regression analysis for the two models and the results will be divided into five parts based on the five independent variables that were measured by financial ratios of the five sample banks.

4.3.1Correlation and Regression Results for Model I

4.3.1.1. Correlation Matrix

The Correlation among the explanatory variables (independent variables) and the dependent variable (ROA), bank's profitability ratio, were tested by using Person Correlation, which is presented in appendix 5. Results showed that:

- Medium negative correlation between the dependent variable ROA and the independent variable good lending principals, measured by nonperforming loans to total loans (NPLR) ratio (-.535). This means that, when NPLR decreased ROA increased.

- A negative correlation was found between ROA and capital adequacy, measured by total equity to total assets (EQTA) ratio. This means when equity decreases profitability increase (-.399).
- Medium negative correlation between the independent variable ROA, profitability measure and loan loss provisions (LLPI) ratio. This means when LLPI decrease profitability (ROA) increase (-.569).

- Weak positive correlation between the dependent variable (ROA), profitability measure and income diversification (NIDR) ratio. This mean when NIDR increase profitability increase (+.201).
- A strong negative correlation between the dependent variable (ROA), profitability measure and operation cost efficiency (OPNI) ratio. This mean when operational expenses increase profitability decrease (-.673).

4.3.1.2. Multiple Regression Results

This part aimed at establishing the relationship between the profitability of the five sample banks measured by Return On Assets (ROA) and the five explanatory variables of credit risk management (independent variables) (see Appendix 5 in full details), the F-Test to examine the appropriateness of the model as a whole, the R Square analysis, the Multicolinearity test and the relationship between each independent and dependant variable.

4.3.1.2.1The Relationship between Credit Risk Management and Profitability (ROA) in All Banks

The equation below, referred to the linear regression equation of dependent (ROA) and independent variables based on the regression analysis (see Appendix 5 in full details);

ROA= 2.205 – 0.024 NPLR – 0.022 EQTA – 0.015 LLPI + 0.010 NIDR – 0.007 OPNI + ε

T (4.427)	**T (-2.925)**	**T (-2.362)**	**T (-2.403)**	**T (1.099)**	**T (-2.343)**
Sig (.000)	**(.007)**	**(.025)**	**(.023)**	**(.281)**	**(.026)**

The results showed that NPLR affected ROA negatively. NPLR β coefficient was -.024 which means that one unit increase in NPLR decreases ROA by 2.4% unit while the rest of

variables are held constant. The statistical significance of NPLR on ROA is.007 which is less than 0.05.This means that NPLR predicts effect on ROA with 99.3% probability. According to EQTA, it also had a negative effect on ROA with β coefficient of -.022. This indicates that one unit increases in EQTA will decrease ROA by 2.2% units, holding the other variables constant. The statistical significance of EQTA is .025 which is less than 0.05. It implies that EQTA predicts ROA with 97. % probability.

According to LLPI and its effect on ROA, the results showed that LLPI affected ROA negatively. LLPI β coefficient is-.015 which means that one unit increase in LLPI decreases ROA by 1.5% unit while the rest of variables are held constant. The statistical significance of LLPI on ROA is -.023 which is less than 0.05. It implies that LLPI predicts ROA with 97.7% probability.

NIDR as a proxy of income diversification affected ROA positively. NIDR β coefficient is .010 which means that one unit increase in NIDR increases ROA by 1% units while the rest of variables are held constant. The statistical significance of NIDR on ROA is .281 which is a sign of relatively low significance. It implies that NIDR predicts ROA with 71.9% probability.

Finally OPNI as a proxy of operational costs efficiency affected ROA negatively. OPNI β coefficient is -.007 which means that one unit increase in OPNI decreases ROA by .7% units. The statistical significance of OPNI on ROA is .026 which is less than 0.05. It implies that OPNI predicts ROA with 97.4% probability.

To conclude the analysis of the relationship between profitability which measured by (ROA) and credit risk management in the five sample banks in Palestine, NIDR as a proxy of income diversification contributed positively and insignificant with banks profitability (ROA). While NPLR (Nonperforming Loans), EQTA (Capital Adequacy), LLPI (Loan Loss Provisions) and OPNI (Operational Expenses) were negatively significant with ROA at 5% level. The findings and the previous analysis revealed that credit risk management had significant effect on profitability in the five sample banks.

4.3.1.2.2 Goodness- of –Fit Tests

According to the table of F-distribution, the critical value of F distribution at the 5% significant level was 2.545. In Table 4.18 the statistic value of F is 13.94 which exceed the critical value of F (2.545). Hence, the regression as whole is significant; this means that NPLR, EQTA, LLPI, NIDR and OPNI predict ROA. Furthermore, the significance is 0.000 which also indicates that ROA is predicted with 100% probability by NPLR, EQTA, LLPI, NIDR and OPNI together and shows a statistically significant relationship among them. Therefore, the F value proves that there is a significant relationship between the profitability, measured as ROA and credit risk management which measured by NPLR, EQTA, LLPI, NIDR and OPNI ratios

Table 4.20: Goodness- of –Fit Tests for Model 1

ANOVA(b)

Mode		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.924	5	3.385	13.945	.000(a)
	Residual	7.039	29	.243		
	Total	23.963	34			

a Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI
b Dependent Variable: ROA

4.3.1.2.3 R Square Analysis

R^2 represents the prediction level of variance in return on assets (ROA) by nonperforming loans (NPLR), capital adequacy (EQTA), loan loss provisions (LLPI), income diversification (NIDR) and operational expenses (OPNI) which is 0,706 as shown in table 4.19 below. This means that 70.6% of ROA can be predicted from the independent variables mentioned above

Table 4.21: Results of R square analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.840(a)	.706	.656	.49267	1.932

a Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI
b Dependent Variable: ROA

Adjusted R2 (65.6) avoids the overestimation effect of adding other variables as independent variables to the model. Therefore, adjusted R differing by 5% (70.6%-65.6%=8.7%).

Durbin-Watson (DW) statistics is the ratio of sum of squares of successive differences of residuals to the sum of squares of errors. As a rule of thumb, if the DW statistic is less than 2, there is evidence of positive serial correlation (Büyüksalvarcı and Abdioğlu, 2011).The Durbin-Watson statistic was 1.932; it means that there was no serial correlation between independent variables and ROA.

4.3.1.2.4 MulticollinearityTest

By analyzing variance inflation factor in ROA model, it can be said that all independent variables had tolerance value bigger than 0.1. The results can prove that all variables had VIF value less than 10.This finding suggests that multicolinearity was not a problem when selected explanatory variables were used to develop the predicted model in the logistic regression analysis and to validate the evidence presented in correlation matrix (see table 4.20 below). To assess the significance of each independent variable on the dependent variable ROA, we consulted table 4.22 which contains the t-test with the significance factors (see Appendix 5).

Table 4.22: Multiple Linear Regression Matrixes for model 1

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.205	.498		4.427	.000		
NPLR	-.024-	.008	-.346-	-2.925-	.007	.725	1.378
EQTA	-.022-	.009	-.269-	-2.362-	.025	.780	1.283
LLPI	-.015-	.006	-.311-	-2.403-	.023	.604	1.655
NIDR	.010	.009	.139	1.099	.281	.636	1.573
OPNI	-.007-	.003	-.311-	-2.343-	.026	.576	1.738

a. Dependent Variable: ROA

4.3.1.2.2The Relationship between Profitability (ROA) and Nonperforming Loans (NPLR)

Table 4.22 showed that NPLR affected ROA negatively. NPLR β coefficient is -.024 which means that one unit increase in NPLR decreases ROA by 2.4% unit while the rest of variables are held constant. The statistical significance of NPLR on ROA is.007 which is less than 0.05.This means that NPLR predicts effect on ROA with 99.3% probability (significant relationship).

It is clear that there was significant negative relationship between poor asset quality and profitability. This means the commercial banks, which failed to monitor their credit loans tend to be less profitable than those which paid particular attention to the assets quality. This is consistent with the theory that increased exposure to credit risk is normally associated with decreased bank profitability (Jha and Hui, 2012); Felix and Claudine (2008).This means local banks need to improve their processes of screening credit customers and monitoring of credit risk.

Therefore, the null hypothesis will be rejected and accept the alternative one:

H 1: There is significant relationship between asset credit quality (good lending principles) and bank's profitability.

4.3.1.5 The Relationship between Profitability (ROA) and Capital Adequacy (EQTA)

The results presented in table 4.22 indicate that the Capital Adequacy Ratio (EQTA) was negatively related to (ROA), the profitability measure. The β coefficient was -0.022 which indicates that the effect of Equity Capital on ROA was weak. This indicates that one unit increases in Equity Capital (EQTA) will decrease ROA by 2.2% units, holding the rest of variables constant. The statistical significance of EQTA was 0.025 which was a sign of significance relationship. It implies that EQTA predicts ROE with 97.5% probability. Based on this result, we can tell that Banks that use more debt are better able to increase their profitability than banks that do not. This is because of the added discipline and interest tax shield that high debt brings to the banking business.

However, it is clear that the negative relationship was due to the volume of negative reserves of banks which produce poor profitability results, furthermore, it depicts that the

larger banks such as Bank of Palestine are better placed than smaller banks in utilizing economies of scale in transactions to enjoy a higher level of profits. This negative relationship also attributes to the weak capital base by most of commercial in the study sample, since many banks still away from minimum capital requirements by PMA. The result is consistent to previous findings of Bikker and Hu (2002) and Goddard et al. (2004). Therefore, the null hypothesis will be rejected and accept the alternative one:

H 2: There is significant relationship between capital adequacy and bank's profitability.

4.3.1.6 The Relationship between Profitability (ROA) and Loan Loss Provisions (LLPI)

The results presented in table 4.22 indicated that Loan Loss Provisions to Net Interest Income Ratio (LLPI) which is a proxy of credit monitoring process is negatively related to (ROA), the profitability measure. The β coefficient was -0.015 which means that one unit increase in LLPI decreases ROA by 1.5% units while the other variables are held constant. The statistical significance of LLPI on ROA is 0.023 which is less than 0.05 which is a significant relationship. This means that LLPI predicts effect on ROA with 97.97 % probability. The result is consistent to previous findings of(Demirgiic-Kunt, 1999).

Therefore, the null hypothesis will be rejected and the alternative one will be accepted:

H 3: There is significant relationship between credit monitoring and bank's profitability.

4.3.1.7 The Relationship between Profitability (ROA) and Income Diversification (NIDR)

The results presented in table 4.22 indicated that Income Diversification Ratio (NIDR) was positively related to (ROA), the profitability measure. The β coefficient was .010 which means that one unit increase in noninterest income increases profitability by 1% units while the other variables are held constant, which indicates a weak effect of NIDR on ROA.

The statistical significance of NIDR on ROA is 0.281 which is more than 0.05 which is insignificant relationship. This means that NIDR predicts effect on ROA with 71.9 % probability. The positive insignificant relationship, indicating that the more banks generate their income from different activities, the more profitable they become. This positive relationship is supported by the results shown in the previous part, when ROA and ROE reached the peak in year 2009; NIDR reached the peak (40%) in the same year. While fee based services represent about the third (32%) of the total income generated by banks of study sample, still Palestinian banks depend largely on interest income in generating their income, since the major revenue generated by commercial banks comes from lending activities. The result is consistent to previous findings of Yang and Wu, 2011and Hackethal and Holzhauser (2010). This means banks that diversify their source of revenue between, interest income, non-interest income and others, are profitable than those that largely depend on a single source of income.

Therefore, the null hypothesis will be accepted:

H0 4: There is no significant relationship between product diversification and bank's profitability.

4.3.1.8 The Relationship between Profitability (ROA) and Operational Cost Efficiency (OPNI)

The results presented in Table 4.22 indicate that the operational expenses ratio (OPNI) was negatively related to (ROA), the profitability measure. The β coefficient was -0.007 which indicates that the effect of operational expenses on ROA is very weak. This result indicates that one unit increases in (operational expenses (OPNI) will decrease ROA by .07% units, holding the rest of variables constant. The statistical significance of OPNI is 0.026 which is less than 0.05 implies sign of significance relationship. It implies that OPNI predicts ROE with 97.4% probability. This result is not surprising, as the issue of high operative expenses was covered extensively in the literature review and the descriptive analysis showed that operating costs are higher in the sector. For example Alquds bank in the year 2008 had a high ratio of operating costs to income (169%) and as a result made an aggregate loss

(ROA was -2.3), whilst bank of Palestine that year was the lowest (64.2%) and made a profit (ROA was 2.3). This finding is consistent with the findings of Olweny and Shipho, 2011. It is therefore obvious that a lot needs to be done to reduce Operational Expenses such staff wages and administrative costs in the sector to improve profitability.

Therefore, the null hypothesis will be rejected and accept the alternative one:

H5: There is significant relationship between bank's operational cost efficiency and bank's profitability.

4.3.2 Correlation and Regression Results for Model II

4.3.2.1 Correlation Matrix

The relationships among the study variables depicted in model II were tested using Person correlation with ROE and determinants of the bank's profitability ratios, which is presented in Appendix 5. Results show that:

- Weak negative correlation between the dependent variable ROE and the independent variable good lending principals, measured by nonperforming loans to total loans (NPLR) ratio (-.229). This means that, when NPLR decreased ROE increased.
- A negative correlation was found between ROE and capital adequacy, measured by total equity to total assets (EQTA) ratio. This means when equity decreases profitability increase (-.261).
- Medium negative correlation between the independent variable ROE, profitability measure and loan loss provisions (LLPI) ratio. This means when LLPI decrease profitability (ROE) increase (-.400).
- Weak positive correlation between the dependent variable (ROE), profitability measure and income diversification (NIDR) ratio. This mean when NIDR increase profitability increase (+.328).
- A strong negative correlation between the dependent variable (ROE), profitability measure and operation efficiency (OPNI) ratio. This mean when operational expenses increase profitability decrease (-.508).

4.3.2.2. Multiple Regression Results for Model II

This part aimed at establishing the relationship between the profitability of commercial banks measured by Return On Equity (ROE) and the five explanatory variables of credit risk management (independent variables) for all banks together, the F-Test to examine the appropriateness of the model as a whole, the R Square analysis, the Multicolinearity test and the relationship between each independent and dependant variable (see Appendix 5 in full details).

4.3.2.2.1The Relationship between Credit Risk Management and Profitability (ROE) in All Banks

The equation below, referred to the linear regression equation of dependent (ROE) and independent variables based on the regression analysis;

ROE= 11.03 - .090 NPLR - .080 EQTA - .213 LLPI + .322 NIDR - .094 OPNI + ε

T (1.094)	**T (-.527)**	**T (-.418)**	**T (-1.639)**	**T (+1.651)**	**T (-1.450)**
Sig (.283)	**(.602)**	**(.679)**	**(.112)**	**(.110)**	**(.158)**

The results showed that NPLR affected ROE negatively. NPLR β coefficient was -.090 which means that one unit increase in NPLR decreases ROE by 9% unit while the rest of variables are held constant. The statistical significance of NPLR on ROE was .602 which is more than 0.05. This means that NPLR predicts effect on ROE with 39.8% probability. According to EQTA ratio, it also had a negative effect on ROE with β coefficient of -.080. This indicates that one unit increases in EQTA will decrease ROE by 8% units, holding the other variables constant. The statistical significance of EQTA was .679 which is more than 0.05. It implies that EQTA predicts ROE with 32.1% probability.

According to LLPI ratio and its effect on ROE, the results showed that LLPI affected ROE negatively. LLPI β coefficient was -.213 which means that one unit increase in LLPI decreases ROE by 21.3% unit while the rest of variables are held constant. The statistical significance of LLPI on ROE is -.112 which is higher than 0.05. It implies that LLPI predicts ROE with 88.8% probability. NIDR as a proxy of income diversification affected ROE positively. NIDR β coefficient was .322 which means that one unit increase in NIDR increases ROE by 32.2% units while the rest of variables are held constant. The statistical

significance of NIDR on ROE is .110 which is a sign of relatively low significance. It implies that NIDR predicts ROE with 89% probability. Finally OPNI as a proxy of operational efficiency affected ROE negatively. OPNI β coefficient was -.094 which means that one unit increase in OPNI decreases ROE by 9.4% units. The statistical significance of OPNI on ROE was .158 which is higher than 0.05. It implies that OPNI predicts ROE with 84.2% probability.

To conclude the analysis of the relationship between profitability (ROE) and credit risk management in the five commercial sample banks, NIDR as a proxy of income diversification contributed positively and insignificant with banks profitability (ROE). While NPLR (nonperforming loans), EQTA (capital adequacy), LLPI (loan loss provisions) and OPNI (operational costs) were negatively insignificant with ROE at 5% level, the findings and the previous analysis revealed that credit risk management had significant effect on profitability in the five sample banks.

4.3.2.2.2 Goodness- of –Fit Tests

According to the table of F-distribution, the critical value of F distribution at the 5% significant level is 2.545. In Table 4.23 the statistic value of F was 3.963 which exceed the critical value of F (2.545). Hence, the regression as whole was significant; this means that NPLR, EQTA, LLPI, NIDR and OPNI predict ROE. Furthermore, the significance was 0.007 which also indicates that ROE was predicted with 99.3% probability by NPLR, EQTA, LLPI, NIDR and OPNI together and shows a statistically significant relationship among them. Therefore, the F value proves that there was a significant relationship between the profitability, measured as ROE and credit risk management, measured by NPLR, EQTA, LLPI, NIDR and OPNI ratios.

Table 4.23: Goodness- of –Fit Tests

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2069.308	5	413.862	3.963	.007[a]
	Residual	3028.382	29	104.427		
	Total	5097.690	34			

a. Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI

b. Dependent Variable: ROE

4.3.2.2.3 R Square Analysis

R_2 represents the prediction level of variance in Return On Equity (ROE) by Nonperforming Loans Ratio (NPLR), capital adequacy (EQTA), loan loss provisions (LLPI), income diversification (NIDR) and operational costs (OPNI) which was 0,406 as shown in table 4.22 below. This means that 40.6% of ROE can be predicted from the independent variables mentioned above.

Table 4.24: Results of R square analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.637[a]	.406	.304	10.21895	1.884

a. Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI

b. Dependent Variable: ROE

Durbin-Watson (DW) statistics is the ratio of sum of squares of successive differences of residuals to the sum of squares of errors. As a rule of thumb, if the DW statistic is less than 2, there is evidence of positive serial correlation (Büyüksalvarcı and Abdioğlu, 2011).The Durbin-Watson statistic was 1.884; it means that there was no serial correlation between independent variables and ROA.

4.3.2.2.4 Multicolinearity Test

By analyzing variance inflation factor in ROE model, it can be said that all independent variables had tolerance value bigger than 0.1. The results can prove that all variables have

VIF value less than 10. This finding suggests that multicolinearity was not a problem when selected explanatory variables which used to develop the predicted model in the logistic regression analysis and to validate the evidence presented in correlation matrix (see table 4.20 below).

To assess the significance of each independent variable on the dependent variable ROA, we developed next part, aimed at establishing the relationship between the profitability of commercial banks (ROE) and the five explanatory variables of credit risk management (independent variables) as shown in table 4,25 (see Appendix 5).

Table 4.25: Multiple Linear Regression Matrixes for model 2

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	11.303	10.334		1.094	.283		
NPLR	-.090-	.171	-.089-	-.527-	.602	.725	1.378
EQTA	-.080-	.192	-.068-	-.418-	.679	.780	1.283
LLPI	-.213-	.130	-.302-	-1.639-	.112	.604	1.655
NIDR	.322	.195	.296	1.651	.110	.636	1.573
OPNI	-.094-	.065	-.274-	-1.450-	.158	.576	1.738

a. Dependent Variable: ROE

4.3.2.2.5 The Relationship between Profitability (ROE) and Nonperforming Loans (NPLR)

Table 4.25 presents regression results for the profitability equation for model 2, discussed in methodology part, where ROE is dependent variable. It showed that NPLR (the ratio that measure the independent variable of good lending principals) affected ROE negatively. NPLR β coefficient was -.090 which means that one unit increase in NPLR decreases ROE by 9% units while the other variables are held constant. The statistical significance of NPLR on ROE was 0.602 which is above than 0.05. This means that NPLR predicts effect on ROE with 39.8% probability. Since, NPLR ratio was negative but insignificant. It is clear that there was a negative relationship between poor asset quality and profitability.

NPL was insignificant because of the result of poor credit policy including weak or lack of appraisal, inadequate strong credit policy and supervision of loan distribution. This indicates, that banks which were unsuccessful in credit monitoring process tends to be less profitable than those which given more concern on asset quality. The result is consistent to previous findings of Bikker and Hu (2002) and Goddardet al. (2004).

Therefore, the null hypothesis will be accepted:

H0 1: There is no significant relationship between asset credit quality (good lending principles) and bank's profitability.

4.3.2.2.6 The Relationship between Profitability (ROE) and Capital Adequacy (EQTA)

The results presented in table 4.25 indicated that the Capital Adequacy Ratio (EQTA) was negatively related to (ROE), the profitability measure. The β coefficient was -0.080 which indicates that the relationship may not be very strong. This indicates that one unit increases in EQTA will decrease ROE by 8% units, holding the rest of variables constant. The statistical significance of EQTA was o.679 which is a sign of relatively low significance (insignificant). It implies that EQTA predicts ROE with 32.1% probability. However, it is clear that the negative relationship was due to the volume of negative reserves of banks which posted poor profitability results, furthermore, it suggests that the larger banks are better placed than smaller banks in utilizing economies of scale in transactions to the normal effect that they will tend to have a higher level of profits. The capital base of many banks in the study (Alquds, Alrafah and Palestinian commercial bank) still was a long way to achieve minimum capital requirements by PMA. These results provide reasonable evidence to the consistent view that, the higher the capital levels, the higher the profitability. The result is consistent to previous findings of Athanasoglou et al. (2006).

Therefore, the null hypothesis will be accepted:

Ho 2: There is no significant relationship between capital adequacy and bank's profitability.

4.3.2.1.7 The Relationship between Profitability (ROE) and Loan Loss Provisions (LLPI)

The results presented in table 4.25 indicated that Loan Loss Provisions to Net Interest Income Ratio (LLPI) which is a proxy of credit monitoring process was negatively related to (ROE), the profitability measure. The β coefficient was -0.213which means that one unit increase in LLPI decreases ROE by 21.3% units while the other variables are held constant. The statistical significance of LLPI on ROE was 0.112 which is above than 0.05 which is a significant relationship. This means that LLPI predicts effect on ROE with 88.8% probability.

Therefore, the null hypothesis will accepted:

Ho 3: There is no significant relationship between credit monitoring and bank's profitability.

4.3.2.1.8 The Relationship between Profitability (ROE) and Income Diversification (NIDR)

The descriptive analysis in table 4.25 showed that revenue diversification in the sector was average and positively related to (ROE), the profitability measure. The β coefficient was 0.322 which means one unit increase by NIDR increase ROE by 32.2% units. The statistical significance of NIDR on ROE was 0.110; this means that NIDR predicts effect on ROE with 89% probability, and higher than 0.05 which is a sign of insignificant relationship, indicating that the more banks generate their revenue from different activities, the more profitable they become.

Therefore, the null hypothesis will be accepted:

H04: There is no significant relationship between income diversification and bank's profitability.

4.3.2.1.9 The Relationship between Profitability (ROE) and Operational Costs (OPNI)

The results presented in table 4.25 indicate that the Operational Expenses Ratio (OPNI) is negatively related to return on equity (ROE), the profitability measure. The β coefficient is

-0.094 which indicates that the effect of operational expenses on ROA is weak. This result indicates that one unit increases in (operational expenses (OPNI) will decrease ROA by .9.4% units, holding the rest of variables constant. The statistical significance of OPNI is 0.158 which is higher than 0.05, implying an insignificance relationship. It implies that OPNI predicts ROE with 84.2% probability. This result is not surprising, as the issue of high operative expenses was covered extensively in the literature review and the descriptive analysis showed that operating costs are higher in the sector. For example Alquds bank in the year 2008 had a high ratio of operating cost to income and as a results made an aggregate loss (ROA was -2.3), whilst bank of Palestine that year was amongst the lowest and made a profit (ROA was 2.3). This finding is consistent with the finding of Olweny and Shipho, 2011.

Therefore, the null hypothesis will be accepted:

H05: There is no significant relationship between bank's operational costs efficiency and bank's profitability.

To sum up, through the quantitative part of the research on the five major Palestinian commercial sample banks, it found that all sample banks had followed the similar decreasing trend in ROA and ROE, as profitability measures in the last three years in particular, on which it indicates a weak profitability performance and less than industry standards except for bank of Palestine (BOP) which done well enough in the last three years and meet the international industry standards, this could be due to its size (the largest local bank). Despite, the decreasing of Nonperforming Loans (NPLR) and Loan Loss Provisions(LLPI) Ratios for all banks, which implied improved control of Nonperforming Loans (Credit Quality), still the mean score of NPLR ratio (10.5%) for sample banks higher than the industry standards (3%). According to Operational Efficiency which measured by OPNI ratio, it is confirmed that the five sample banks ratios are higher than the international standards and had increasing trend related to this aspect. Banks should have more control on their operational expenses to improve their profitability. Finally, despite the positive relationship between Noninterest Income and banks profitability, the NIDR ratio had declining trend in the past three years.

In ROA model, the results showed that Nonperforming loans Ratio (NPLR), Capital Adequacy Ratio (EQTA), Loan Loss Provision Ratio (LLPI) and Operational Efficiency Ratio (OPNI) had negative significant effect on ROA, profitability measurement while Income Diversification Ratio (NIDR) was not significant with positive effect. For that reason, hypothesis 1, 2, 3 and 5 have been rejected and accept the alternative one which have a significant impact on profitability of the commercial banks in Palestine. While hypothesis 4 has been accepted, since it was not significant with bank's profitability (ROA).

In ROE model, interesting but quite surprising results showed that all variables, Non-performing Loan Ratio (NPLR), Capital Adequacy Ratio (EQTA), Loan Loss Provision Ratio (LLPI), Non-interest Ratio (NIDR) and Operational Efficiency Ratio (OPNI) were not significant. Therefore, the null hypothesis 1, 2, 3, 4 and 5 has been accepted.

4.4 Credit Risk Management Techniques and Practices at Palestinian Commercial Banks

After getting a full general picture of the credit risk management performance in the major Palestinian commercial banks from 2005 – 2011, by analyzing how different aspects of credit risk policies adopted by banks which affected their profitability, it moves to the stage for analyzing the current policies and practices of the sample banks, which is particularly important to get an understanding on how Palestinian commercial banks manage their credit risk. Before we go further in detailing the policies adopted by Palestinian commercial banks in managing their credit risk, we should have a brief explanation of the consultative papers issued by Basel (2000) that shows the principles on credit risk management. A brief explanation will be given below. Because of unavailable data for AL-rafah bank, it will be excluded from the analysis in next part of this study.

-Best Practices for Credit Risk Disclosure

The Basel paper issued in 2000 provided sufficient guidance for banks to reveal information that can facilitate reliable assessments of their credit risk profiles. And that is the reason why the contents in this paper are important and significant to this research.

-Recommendations on Credit Exposures

The recommendations on Credit exposures put assurance on three areas--- credit concentration, segment exposure information and risk mitigation techniques. Information about significant credit exposure concentrations should be revealed; Segment exposure information requires bank's credit exposures in to be classified according to business line, types of counterparties and geographical areas respectively; while the disclosure about credit mitigation techniques includes the use and effect of collateral, guarantees, credit insurance, securitization, netting agreements and credit derivatives.

-Recommendations on Credit Quality

Regarding credit quality, it is suggested that information about a bank’s internal rating process and certain doubtful assets conditions be mentioned. Credit exposures on which inflows or outflows of cash are stopped and the amounts and changes in allowances should be disclose.

-Recommendations on Credit Risk Management

Besides the two previous aspects, the recommendations on credit risk disclosures should include sources of credit risk and its nature, credit risk management framework, credit scoring techniques, credit rating systems and credit risk policies, practices, techniques for managing credit risk. By following all of those recommendations, a picture can be drawn on a bank's credit risk management process, which allows both clear understanding and evaluation.

4.4.1 Credit Risk Management Techniques and Practices at Bank of Palestine (BoP) and Al-Quds bank

A. Credit Risk Management Governance

Both at BOP and AL-Quds bank, the risk appetite and philosophy, which indicate the strategic directions, plans and limits on controlling risk, are set by the Board, and there exist various sub-committees carrying different tasks.

At BoP, the Credit Committee is responsible for credit proposals approval and the delegation of authority to divisional credit committees, and it is supported by the Risk Management Committee. Besides, the Credit Committee is responsible for:

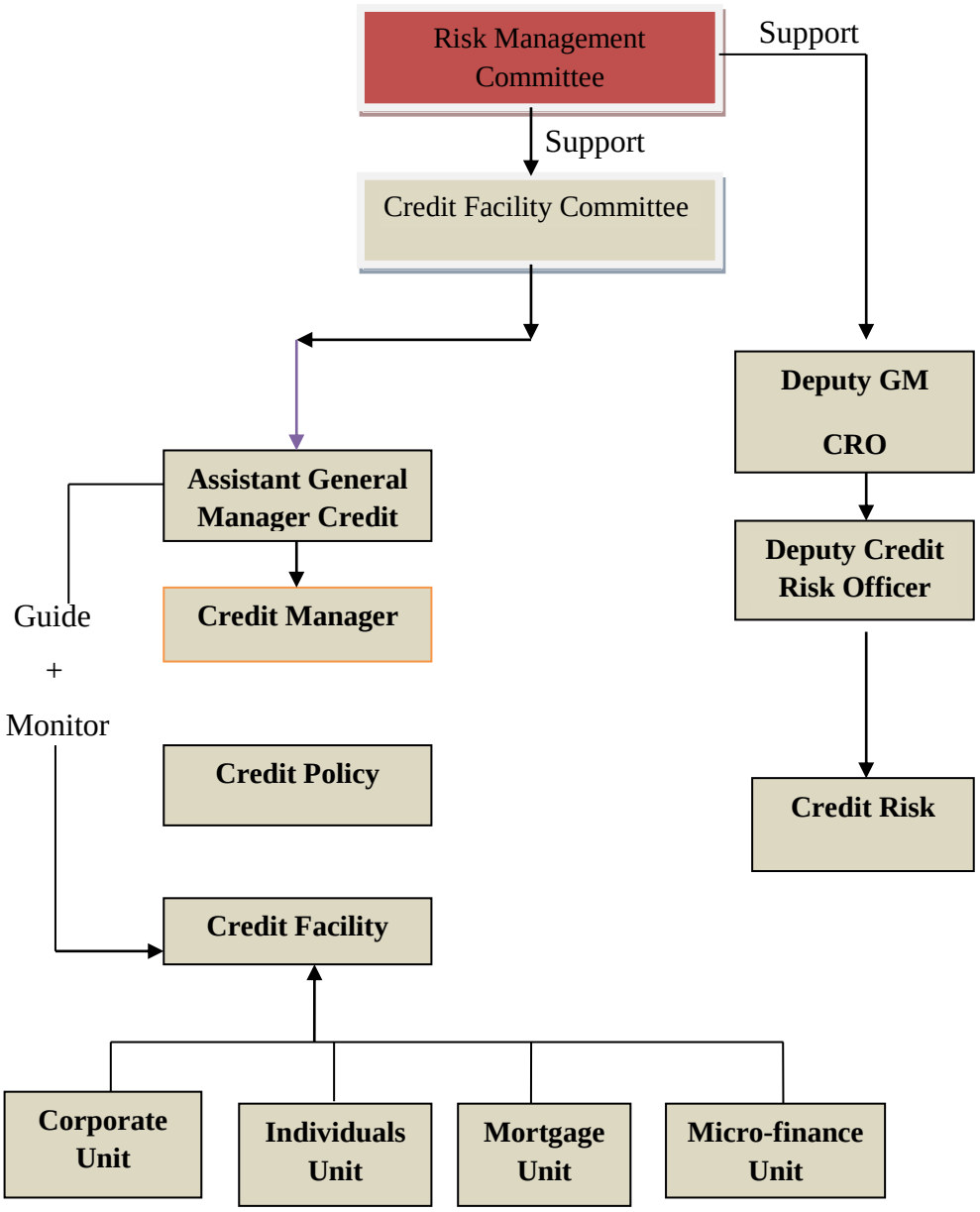
- Establishing credit policies and credit limits, that should be approved by the board and comply to financial laws and PMA instructions. Also the committee is responsible to review and update credit policies in response to any change in the political and economical environment (BoP Annual Report, 2012).

- Study and review credit applications for approval that exceed the executive credit committees' limits after the recommendations of all executive credit committees. While the responsibility of the Risk Management Committee is approving the whole risk management policies developed by the board and ensures that there is an efficient institution risk management framework. At divisional level, credit risk management is managed by credit units, responsible of developing maintenance individual credit risk management framework that consistent with the institution policies. While at AlQuds bank, the board Risk Management and Compliance Committee is responsible for

Reviewing the Bank's risk management policies and strategies including credit and credit concentrations risks, before they are finally approved by the Board. While the Risk management responsibilities include:

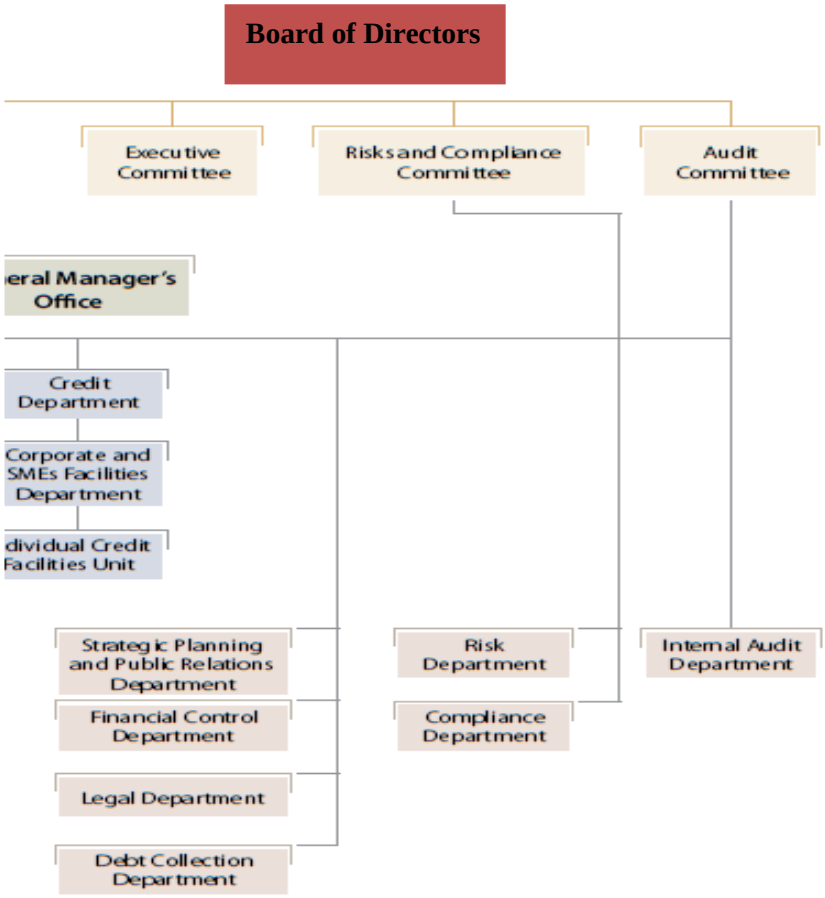
- Develop a risk policy, covering all types of risk, and submit to the Board for approval.
-Analyze all risks, including credit risks, market risks, liquidity risks and operational risks.

Figure 4.23: Credit risk management organizations at BOP



Source: Bank of Palestine's Annual Report, 2012

Figure 4.24: Credit risk management organizations at AlQuds bank



Source: AlQuds bank's Annual Report, 2012

B. Credit Granting Process

Before the approval of the credit exposures, an assessment and analysis of the borrower's credit risk and credit facilities is undertaken at BoP, which includes a review of the purpose of the credit, sources of repayment. The affordability tests will be carried out, the repayment history, repayment capacity, sensitivity to economic and market developments as well as the risk-adjusted return are all examined. At AL-Qudsbank, the granting of credit facilities is the responsibility of the credit facility committee in the bank and it conducts its

work in accordance with the requirements of the credit policy which agrees with limits of applicable authorization. The committee studies each credit request separately from the reality of data provided by the client requesting the facility such as the audited financial statements, the statements of other explanations on the financial solvency of the client, guarantees which is attainable, economic feasibility studies for projects subject for financing and the size of required credit.

C. Quantitative Credit Risk Measurement

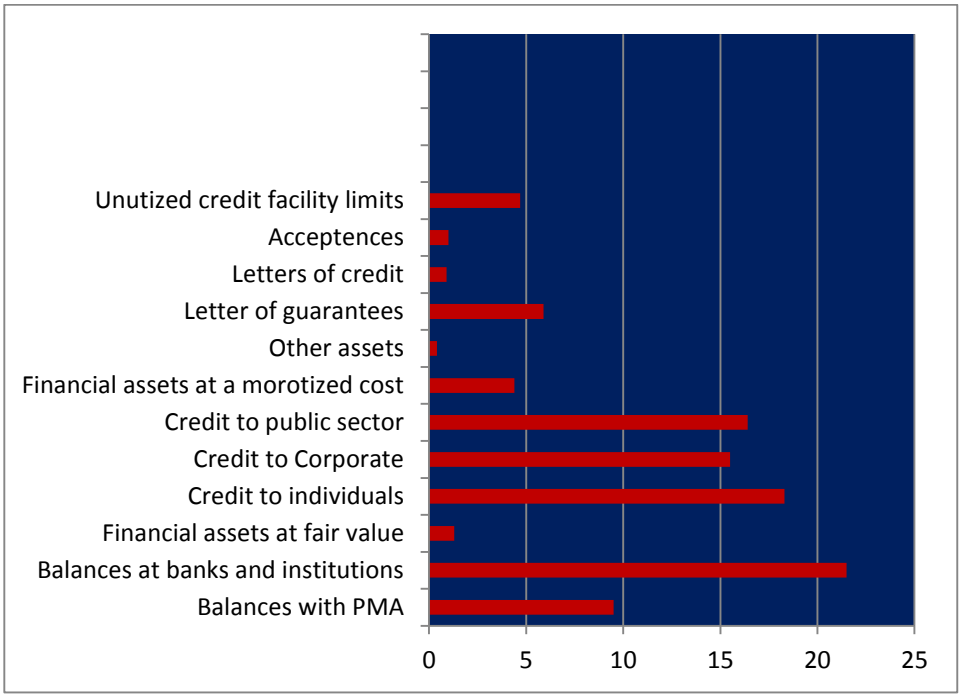
-Internal Credit Rating system

The internal ratings used inside bank of Palestine (BOP) for assessing borrower credit quality, which based on the results from the Probability of default (PD) models. All the customers are assigned credit ratings from 0% (lowest PD)) to100% (highest PD), which then are mapped into a bank level rating scale from 1 to 8 degrees as reflection for asset quality. Bank of Palestine (BOP) risk ratings from 1- 3 rated as low risk borrower, while 3-5 rated as acceptable risk borrower and 5-8 high risk borrower. Besides the information on asset quality grading and the distribution of assets according to this grading is also provided by BOP, as shown in table 4.25.while AL-Quds bank, the internal rating system assigned for assessing credit quality of borrowers is ranged from 1 (low risk) to 10 (high risk). The rating from 1-5, rated as low risk, from 6-8 is rated as acceptable (medium) risk and from 8-10 is rated as high risk as shown in table 4. 26.

D. Credit Risk Exposure Management

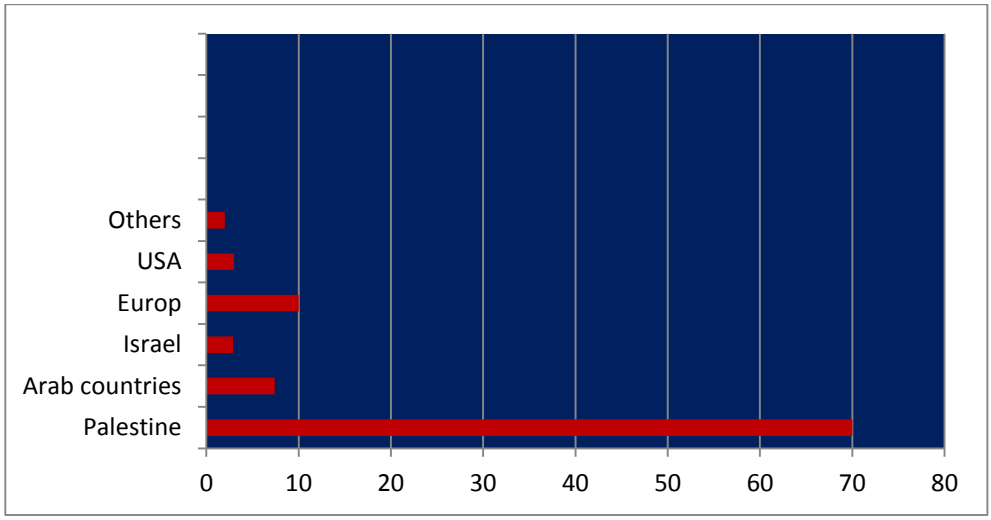
BoP has a very clear definition about the credit risk it will manage and has adopted "credit risk assets" as an internal measure of the bank's exposure to its customers, which consist of loans and advances, installment credit, debt securities and other traded instruments. Regarding the credit risk assets distribution, BoP has very comprehensive understanding and provides a detailed report according to industry sector, geographic areas and product as well as customer type respectively, which are shown in the following figures:

Figure 4.25: Exposure to credit risk at BoP



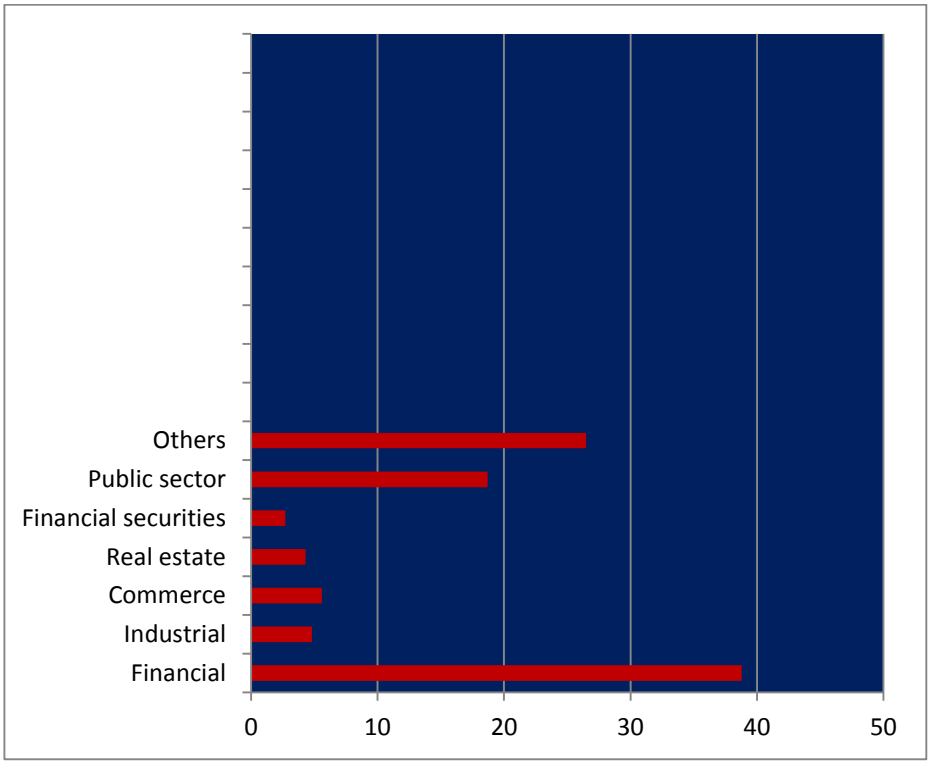
Source: PoB's Annual Report, 2012

Figure 4.26: Concentration of risk exposures according to the geographical area is as follows:



Source: PoB's Annual Report, 2012

Figure 4.27: Concentration of risk exposures according to economic sectors is as follows:



Source: PoB's Annual Report, 2012

To assess the potential concentration risk that arises from within the loan portfolio, industry, geography and product as well as customer type, analysis plays a very important part since credit concentration issue is given particular attention at bank of Palestine, where relevant information can be found in an independent part of their annual report named "Credit Concentration". From the prior figures, some facts and numbers about the bank's risk exposure distribution can be generated. For instance, considering geographical areas, the largest exposures are in the local market (Palestine) about 60% of total risk exposures are in Palestine. And through differentiating credit risk assets by products and customer type, it is shown that credit risk exposures through direct credit facilities to individuals, corporate and public sector are 36%, 31% and 32% respectively. It should be noted that, according to PMA instructions investment or lending in each economic sector must not

exceed 20% of the total bank's credit portfolio. For instance, considering economic sector, the bank is largely exposure to public sector with 32% of the credit portfolio. Besides, BOP also includes maturity analysis on its assets and liabilities according to their maturities, as shown in the following table.

Table 4.26: Distribution of assets according to maturity at PoB

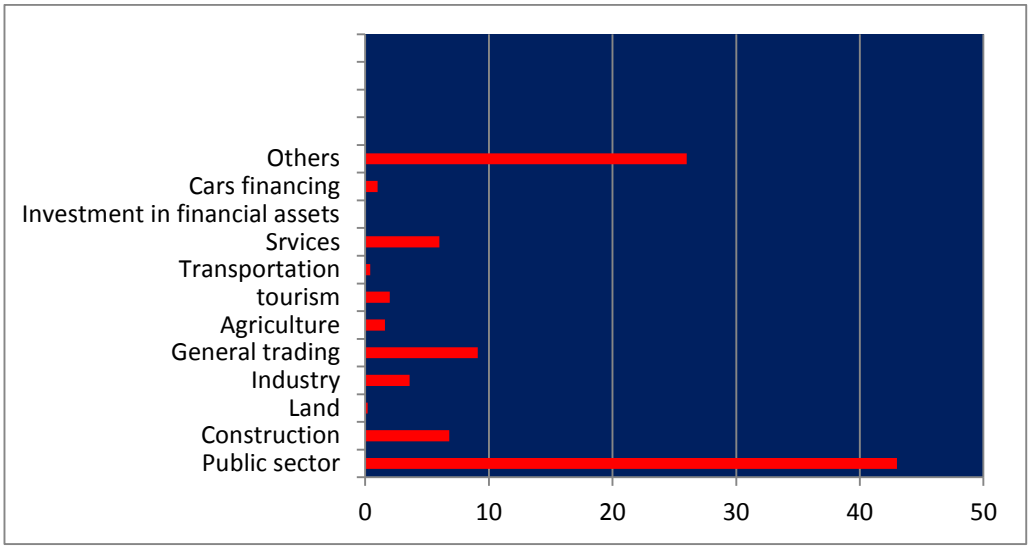
December 31, 2012	Up to 1 year U.S.$	More than 1 year U.S.$	Without maturity U.S.$	Total U.S.$
ASSETS				
Cash and balances with PMA	268,691,805	-	127,963,908	396,655,713
Balances at banks and financial institutions	415,255,368	-	602,110	415,857,478
Financial assets at fair value through profit or loss	-	25,224,350	8,203,971	33,428,321
Direct credit facilities	678,808,779	297,586,149	-	976,394,928
Financial assets at fair value through other comprehensive income	-	-	25,761,983	25,761,983
Financial assets at amortized cost	25,518,962	61,215,812	-	86,734,774
Investment in an associate	-	-	11,524,968	11,524,968
Property, plant and equipment	-	-	38,827,061	38,827,061
Project in progress	-	-	5,040,203	5,040,203
Other assets	7,079,626	-	7,189,040	14,268,666
Total Assets	1,395,354,540	384,026,311	225,113,244	2,004,494,095

Source: BoP's Annual Report, 2012

While at AL-Quds bank, credit risk, especially together with the sub-types of market risk and liquidity risk is well recognized within the bank. The board is responsible for identifying and controlling risks that have been developed by risk committee, while the duty of managing and monitoring the bank's risk lies on different units. The risk management covers a wide range including customer loans and advances, loan

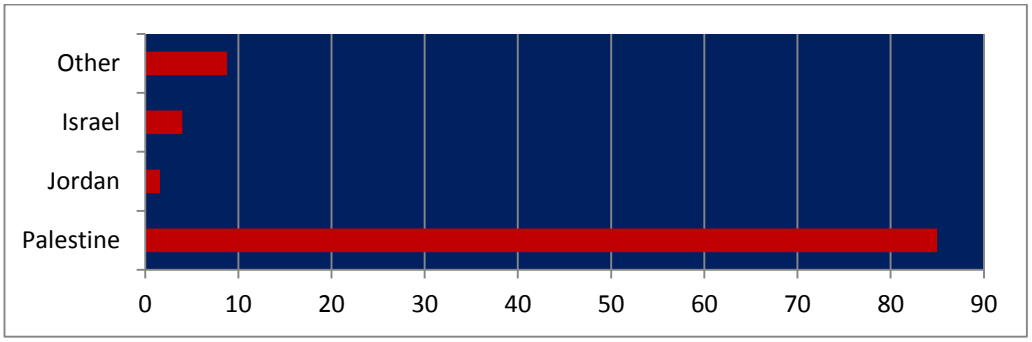
commitments, debt securities and other exposures in trading activities, and clear explanation as well as differentiation is given to the credit risk nature of these exposures respectively in the report. Geographical and industry analysis on the loans and advances to customers are also carried out by the bank in the similar as what BOP has done. Credit concentration issue is given particular attention at AL-Quds bank as well as Bank of Palestine, where relevant information can be found in an independent part of the report named "Credit Concentration".

Figure 4.28: Distribution of credit assets by economic sector:



Source: AlQuds Bank's Annual Report, 2012

Figure 4.29: Distribution of credit assets by geography:



Source: AlQuds Bank's Annual Report, 2012.

E. Credit Quality Management

- Quality Statistics by Internal Rating

As mentioned before, BoP uses internal credit ratings for assessing the quality of borrowers. To give general information on its credit risk assets, the statistics about the distribution of those assets by quality is provided by the bank.

Table 4.27: Credit risk exposure for each risk rating at BOP:

December 31, 2012	Individuals	Companies and other institutions	Public sector	Total
	U.S.$	U.S.$	U.S.$	U.S.$
Low risk	6,237,118	74,849,355	318,866,888	399,953,361
Acceptable risk	343,600,572	224,735,316	-	568,335,888
From which is due:				
Until 30 days	7,594,887	1,918,031	-	9,512,918
Watch list	199,110	82,202	-	281,312

Source: BoP's Annual Report, 2012

According to table 4.27, 80%, 19% and 1.5% of the credit exposures are to Public sector, Corporate and individuals respectively, rated low risk, which means even in the event of a markedly adverse economy, only modest reductions in profitability would be recorded. Also 40% and 60% of the credit exposures are to Corporate and individuals respectively, rated acceptable risk, which means in markedly adverse economy, substantial reductions in profitability may be caused, but profits would still be positive. While AL-Quds bank, as bank of Palestine (BoP) uses internal credit ratings for assessing the quality of borrowers.

Table 4.28: The credit exposures for the credit facilities are distributed according to risks degrees at ALquds:

2012	Individuals	Companies			Public	Total
		Mortgage Loans	Large Companies	Small, Middle Institutes		
Low Risks	2,534,147	1,820,696	5,643,306	2,137,340	127,079,273	139,214,762
Acceptable Risks	113,394,208	3,813,520	33,677,147	6,771,519	--	157,656,394
Owed (*):						
Within 30 Days						--
31 to 60 Days						--
Under Control	167,173	--	1,523,650	--	--	1,690,823

Source: Al-Quds Bank Annual Report, 2012

According to table 4.28, 91%, 6.8% and 1.8% of the credit exposures are to Public sector, Corporate and individuals respectively, rated low risk, and 72% and 32% are credit exposure rated acceptable to individuals and corporate respectively.

-Loan Impairment

Regarding this issue, potential credit risk loans (nonperforming loans) at Palestine bank are identified as either Substandard or Doubtful loans. Substandard loans are inadequately protected by current worth/paying capacity of obligor or collateral. Well-defined weaknesses jeopardize liquidation of the debt. Distinct possibility that bank will sustain some loss if deficiencies are not corrected. Where the substandard loans are accruing but are past due 91 to 180 days. According to PMA instructions, the bank must have provisions by 20% of the substandard loans. Doubtful loans are all weaknesses inherent in substandard, and collection/liquidation in full, on basis of currently existing conditions, is highly questionable or improbable. Specific pending factors may strengthen credit; treatment as loss deferred until exact status can be determined. While the Doubtful loans, are accruing but are past due181 to 360 days and its required provisions by 50% of its value. Also there are some loans classified “under watch list”, and it require special attention by the bank, since it has potential weaknesses.

Table 4.29: potential credit risk loans at BOP

Watch list	**199,110**	**82,202**	**-**	**281,312**
Non-performing:				
Substandard	**5,748,223**	**1,261,089**	**-**	**7,009,312**
Doubtful	**4,455,902**	**3,951,978**	**946,257**	**9,354,137**

Source: BOP, 2012 Annual Report

While at AL-quds bank, different categorizing method is adopted, where potential credit risk loans name "non-functional loans" and classified either below the level or doubted loans. These non functional loans treated as bank of Palestine based on PMA instructions.

Table 4.30: potential credit risk loans at Al-Quds bank

Non – Functional:						
Below the Level	258,636	--	71,590	--	--	330,226
A doubted	375,696	--	318,565	--	--	694,261

Source: AlQuds Bank's Annual Report, 2012

- Provisions/ Allowances

Both at Bank of Palestine (BoP) or AL-Quds bank no such detailed information on the allowance assessment methodologies is provided. And what is known is that the impairment is measured either individually for significant assets or collectively for portfolio of homogeneous assets.

Table 4.31: Summary of movement on impairment allowance for credit facilities at BOP:

	2012 U.S.$	2011 U.S.S
Balance, beginning of the year	6,880,680	7,442,324
Additions	1,574,072	-
Recovered during the year		(628,289)
Credit facilities in default for more than 6 years	(630,799)	(46,410)
Provision written off	(296,856)	(71,832)
Foreign currency exchange differences	476,336	184,887
Balance, end of year	8,003,433	6,880,680

Source: BoP's Annual Report, 2012

F. Credit Risk Mitigation Methods

Unfortunately, there is no independent section in BoP annual reports that can provide any information on the methods adopted for minimizing credit risk within the bank. By searching through the whole report and other published information, it can be found that traditional ways for controlling credit risk are used by the bank, such as collateral and putting limits and ceilings for the amounts of direct credit facilities(individual or institution) and the total loans and debt granted to each sector and each geographical area. However, there is no detailed description about the diversification strategy or practices of loan portfolios. Besides traditional ways for controlling credit risk that are used by AlQuds bank, such as collateral, credit limits and ceilings for credit facilities, weather its individual, corporate credits, sectoral and geographical area credits, the bank used derivatives and other financial instruments to manage the results from changes in the interest prices, foreign currencies, capital risks and credit. To sum up, based on the above illustration, a consolidated table is provided below, which includes the key techniques and practices in credit risk management of bank of Palestine (BOP) and AlQuds bank. A clear general view can be drawn regarding credit risk management at BOP and AlQuds.

Table 4.32: Summaries of credit risk management techniques and practices at BOP and AL-Quds banks

	Bank of Palestine (BOP)	AlQuds bank
Credit risk management governance	The Credit Facility Committee develop the Credit Risk Management Framework	The Executive Committee Develop the Bank's Credit Policy
Credit granting	Different credit approval processes are applied to different customer types.	The credit facility committee is responsible of credit granting based on the lending procedures developed by the Executive Committee
Credit risk measurement	Self developed PD model and credit risk exposure measurement and internal credit ratings based on the PD model are adopted	Simple internal rating system is adopted for assessing clients creditworthiness
Credit exposure management	Assets with credit risk are all identified. Credit assets distribution is controlled according to industry sector, geographical area, customer type and maturity. Awareness of credit risk concentration has been	Analysis on credit exposure is made according to geographical area, industry. Credit concentration is given attention to and limits to sub-investment grade countries are clarified.
Credit quality management	Quality Statistics based on internal ratings has been made. Nonperforming loans classified either Substandard or Doubtful loans.	Potential credit risk loans "non-functional loans" is classified either below the level or doubted loans
Credit risk mitigation techniques	Combination of traditional and newer techniques, including credit limits, collateral, hedge funds.	Traditional and newer methods such as collateral, credit limits and credit derivatives are adopted.

Source: Zidan (The Author), 2013

4.4.2 Generalization and Comparison with Basel Regulations

From the above section, the current credit risk management practices in bank of Palestine (the largest national bank according to assets and profits) and Al-Quds bank (the second national bank according to assets and profits) are already shown from several major

aspects. Bank of Palestine had given more detailed descriptions in their annual reports. On the basis of this, a generalization will be drawn from their practices in this section, and those practices will also be compared with major Basel (2000) regulations.

In order to strengthen the Palestinian banking sector, the Palestinian Monetary Authority (PMA) has issued several instructions that regulate and promote the banking sector. Instruction No (6/2011) concerning credit risk management: These instructions are consistent with the recommendations of (BCBS) which confirm the essential of providing sound bases for credit risk management within the framework of four main components representing the minimum quality principles that must be followed. The four components include the existence of a suitable environment conducive for credit risk management, working in accordance with sound procedures and controls for the general letter of credit, the availability of a prudent management and feasible measurement and follow-up procedures, and verification of adequate oversight and monitoring on credit risk and control.

The Establishment of Credit Risk Environment

The first common feature of the credit risk management at BOP and AL-0uds banks is that they both establish appropriate atmosphere for sound credit risk management, in which credit risk is clearly identified in its nature, responsibilities are understood at different levels, monitoring and control process are set, which are already shown in figure 4.23 and 4.24. Credit risk policies and strategies are set by the board and other subcommittees and implemented by specialized divisions, which work as a guidance to for the whole risk management process, such as the credit risk management framework at BOP. All of the above proves the central role of credit risk management has played in the whole risk management of these two banks. And also it indicates that they do follow the first area of Basel (1999) principles well, particularly bank of Palestine (BoP). It should be noted that BoP is more comprehensive and structured in regard to credit risk management function. That can be shown in from its credit organizational chart, which has been reflected in its good operational results (nonperforming loan ratio is 1.7%) which considered the lowest among all banks operate in Palestine weather its local or foreign banks. Also AL-Quds

bank has established the compliance department to ensure that the bank's operations are in line with the requirements of Basel regulations.

Credit Granting Process

Regarding this aspect, it should be mentioned that not much generalization or results can be derived from the bank's annual reports, since bank of Palestine and Al-Quds bank haven't given any particular description on its credit granting process in their reports. But it is confirmed that careful assessment is made to different types of counterparties; however, no information is given about its credit-granting criteria, as mentioned in Principle 4 of Basel (2000) requirements. Credit limits for individual borrowers and counterparties are set and followed in the risk management process of both. The specialized bank's committees analyze and study credit request, depends on the data provided by customers in order to make the Wright credit decision.

Since the Basel (2000) paper on credit risk management disclosure doesn't include particular recommendations on credit granting process, no definite comment can be made in this area about the two banks.

Credit Measurement and Monitor Process

A. Credit Risk Measurement

The application of internal rating systems is also found in both banks, which based on the PD model especially. The difference is that the rating system of BOP is a 6-grade model, while that of Al-Quds is 1-10 grade models. However, what still needs improvement is that none of them are given detailed explanations in their annual reports about risk calculation criteria, since it is mentioned in the Recommendation 22 of Basel (2000) paper. Such descriptions in the two banks' annual reports are obviously not sufficient.

B. Credit Monitor

The monitoring on the composition and quality of credit portfolios is carried out well both at BOP and AlQuds, which also accords with the requirements of Basel (1999). At Al-Quds bank the credit committee and department follow-up credit in collaboration with the staff of audit and internal inspection to monitor the credit facilities granted to customers on a regular basis to identify any deviations that would expose the bank to the risk of non-fulfillment of obligations undertaken by the customer, and thus take the necessary

procedures to protect the funds of the bank. Credit exposure is analyzed by different categories such as business lines and geographical areas to somewhat, as shown in Figure 4.25, 4.26 and 4.27 and concentration problems are identified by these banks. The quality of credit risk assets is monitored by showing essential information about potential problem loans. Although judged from the recommendation made by Basel (2000), the disclosure may not be detailed enough, which provides insufficient information on whether the banks have strong monitor on the impaired loans, it can be found that basically, the two banks do give attention to the impairment as well as allowances issue.

Controls over Credit Risk

Despite the fact that, it is already mentioned of clear definition and designation of responsibilities are found in these two banks annual reports and different divisions and committees give regular assessments to the implementation of credit risk management, it cannot be proved that a valid and efficient credit review system is already established in both banks, due to the lack of relevant information.

Credit Risk Mitigation

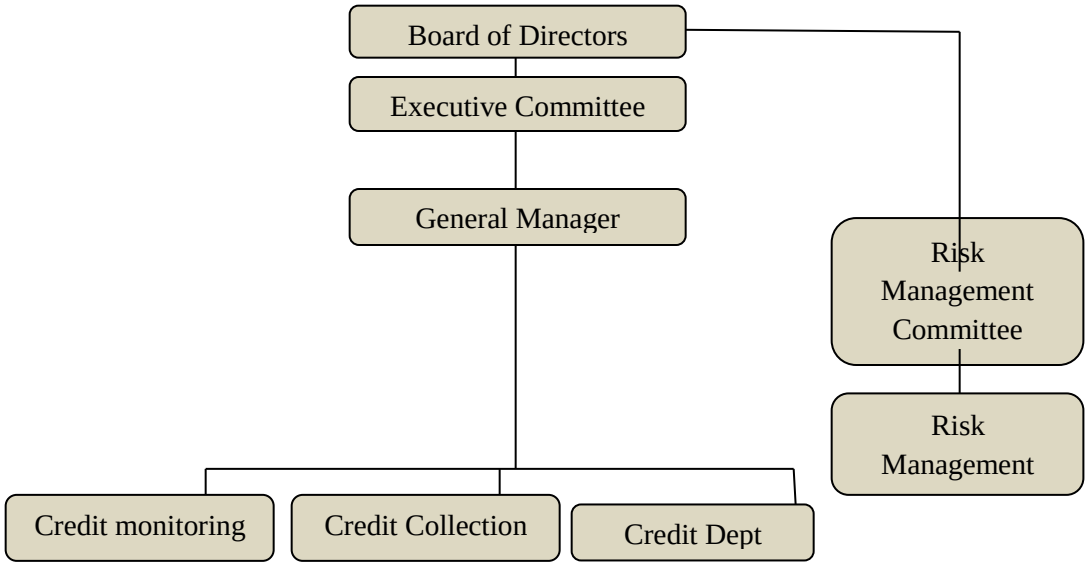
Traditional credit risk mitigation approaches such as collateral, putting limits for direct credit facilities (individual or institution) and the total loans given to each sector and each geographical area are applied in both banks. Although, Al-Quds doesn't give much description on its diversification strategy, newer approaches are also applied, such as the use of credit derivatives and other financial instruments.

4.4.3 Credit Risk Management Practices at Palestinian Commercial bank (PCB) and Palestinian Investment bank (PIB)

A. Credit Risk Governance

Generally, the credit risk policies and strategies, the risk management structure and responsibilities are determined by the Risk Management Committee, consisting of members of the Board of Directors and the Executive Committee that aims to measure, monitor and control all risks including credit risk, the bank may exposed in the future at PCB.

Figure 4.30: Credit risk management organizations at PCB



Source: PCB Annual Report, 2012

While at The Palestinian investment bank (PIB), no available information about credit organization structure mentioned in their annual reports.

B. Credit Approval Process

The credit approval process at PCB is guided by the credit policies issued by risk management committee by, which is supported by credit scoring techniques for sound credit decision making. Certain limits have been set for screening the accepted types of borrowers or counterparties. According Palestinian investment bank (PIB), their annual reports had no information related to credit granting criteria at all.

C. Credit Risk Measurement

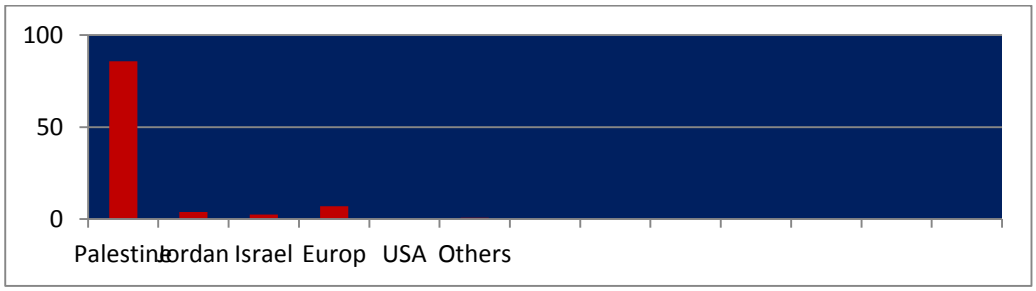
Internal credit rating system has been developed within Palestinian commercial bank (PCB) for assessing credit quality of borrowers and counterparties. All the customers are assigned credit ratings from 1% (highest PD)) to100% (lowest PD). Five category risk rating scale developed by Palestine commercial bank(PCB), risk ratings from 20-36 rated as very high risk borrower, while 36-52 rated as high risk borrower, from 52-68 rated as medium risk borrower, from 68-84 rated as low risk borrower and from 84-100 rated as very low risk borrower. Besides the information on asset quality grading and the distribution of assets according to this grading is also provided by PCB. It should be noted that those ratings are just for corporate clients, since the bank has no credit rating scales for individuals yet.

While Palestinian Investment Bank (PIB) establish its own internal credit rating system, in which all customers are assigned credit ratings from 0 (new customer) to 6 (high risk).

D. Credit Risk Exposure Management

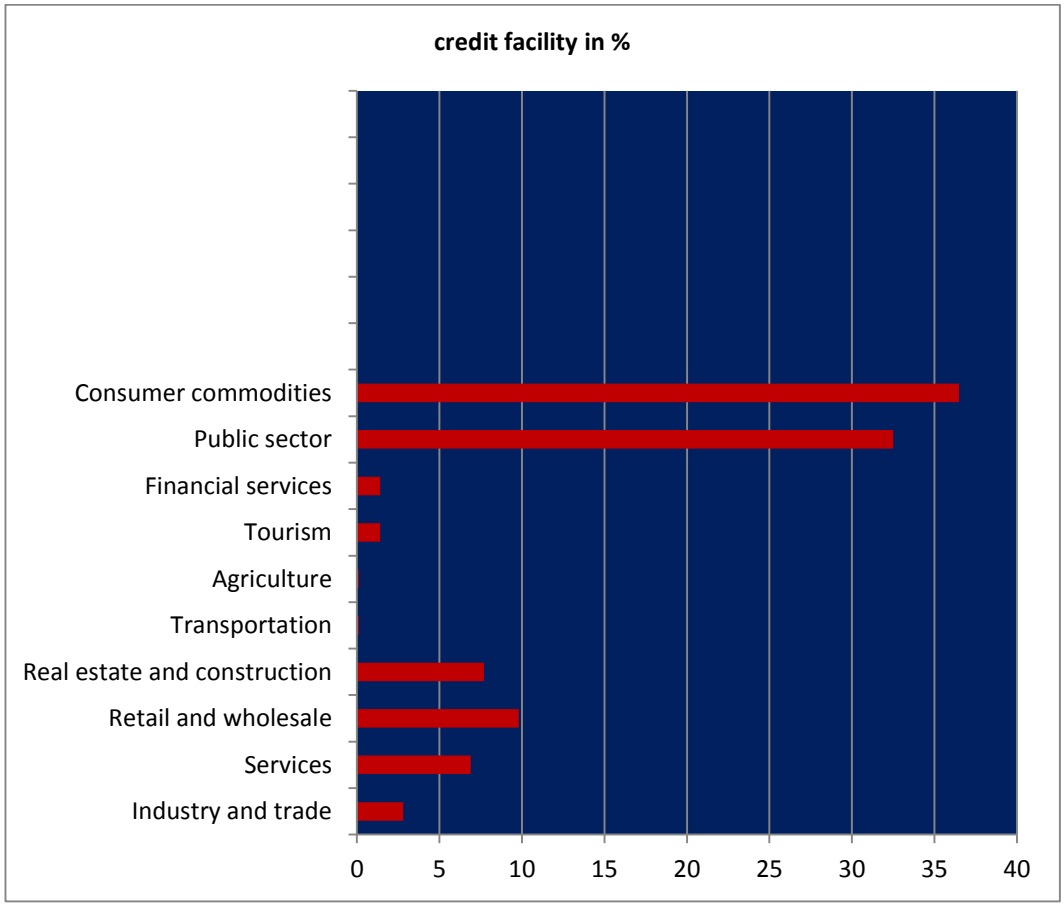
Credit Exposure and Quality Management At Palestinian Commercial bank (PCB), credit risk, especially together with the sub-types of market risk and liquidity risk is well recognized within the bank and identified their credit risk exposure**.** Regarding the credit risk assets distribution, PCB has quite comprehensive understanding and provides a detailed report according to industry sector, geographic area, which is shown in the following figures:

Figure 4.31: Concentration of risk exposures according to the geographical area at PCB



Source: PCB, 2012 Annual Report

Figure 4.32: Distribution of credit assets by economic sector at PCB:



Source: PCB Annual Report, 2012

PCB uses internal credit ratings for assessing the quality of borrowers. To give general information on its credit risk assets, the statistics about the distribution of those assets by quality is provided by the bank. While at Palestinian investment bank no available information provided in their annual reports.

E. Credit Risk Mitigation

There is no independent section in PCB's annual reports that can provide any information on the methods adopted for minimizing credit risk within the bank. By searching through the whole report and other published information, it can be found that traditional ways for controlling credit risk are used by the bank, such as collateral and putting limits and

ceilings for the amounts of direct credit facilities. According to Palestinian investment bank (PIB) no relevant information about credit risk mitigation techniques is found in its annual reports.

Similar to what has been done to bank of Palestine and AL-Quds bank, a consolidated table is also provided for a brief conclusion on the credit risk management techniques and practices at Palestinian commercial and Palestinian investment bank, as shown below.

Table 4.33: Summaries of credit risk management techniques and practices at PCB and PIB:

	Palestinian Commercial Bank	Palestinian Investment Bank
Credit risk governance	Risk Management Committee set the policies and strategies of credit risk.	N/A
Credit approval process	Lending policies issued by Risk Management Committee guiding the process and credit limits are applied to different kind of borrowers	N/A
Credit risk measurement	A five – category internal rating system is adopted.	N/A
Credit exposure and quality management	Inadequate identification on credit risk exposure.	N/A
Credit risk mitigation techniques	Traditional methods for minimizing credit risks are adopted.	Traditional methods for minimizing credit risks are adopted.

Source: Zidan (the Author), 2013

4.4.3.1 Generalization and Comparison with Basel Regulations

The Establishment of Credit Risk Environment

The establishment of an appropriate credit risk environment is the basis in sound credit risk management, as emphasized by Basel (2000), and through the analysis in the Palestinian commercial bank annual reports, credit risk has been simply defined and identified**.** Based

on that credit exposure limits and ceilings have been set and the responsibilities for different levels are explained and designated.

While at Palestinian investment bank, no relevant information about credit risk management policies or techniques are found in their annual reports. The above findings provide evidence that unsatisfactory levels of credit risk management environment has been established in both PCB and PIB bank, particularly PIB bank. This weakness in credit risk management framework could be attributed their size, business range and unqualified personnel.

Credit Granting Process

Regarding this second area of the Basel (200) requirements on sound credit risk management there is lack of sufficient information at both Palestinian commercial bank (PCB) and Palestinian investment bank (PIB) annual reports. What can be found is that both banks do have systematic procedure for assessing and granting credit, putting limits and ceilings on granting credit to different geographical, sect oral areas and they do put credit granting in a very important place, because after all, a good practice at this stage can save much efforts in the future risk control process and avoid such risk.

Credit Measurement and Monitor Process

A. Credit Risk Measurement

Internal rating system is a common system of measurement used at both PCB and PIB bank, which bases on similar principles, but may differ in the scale of the grades and explanation. So both banks have already given attention to internal rating systems by developing the one that will mostly match their business characteristics. It is a surprising result that Palestinian commercial bank (PCB) has not establish or adopt credit rating system for individuals, the internal rating system adopted by the bank concentrated on corporate borrower measures; however both banks PCB and PIB do not follow any credit modeling practices as Basel (2000) already has emphasized the importance of credit risk models in bank risk management and performance measurement process. The two should still make better use of credit risk modeling technique.

B. Credit Monitor

Regarding this aspect, there is no evidence proving that both banks PCB and PIB have done what Basel (2000) has required. For instance, credit exposure analysis, has not been shown sufficient analysis, leading the doubt on the banks' credit exposure management performance. Very little information can be generated about their practices related to impaired loans or allowances. Although it is true that the two smaller banks, due to their core business nature, may have smaller scale of loan exposures, it is not reasonable to think that such analysis or effort is unnecessary.

Controls over Credit Risk

At Palestinian commercial bank (PCB) according to the description in the annual reports, credit risk management is assessed by different levels of units, and it is certain that some credit reviews are undertaken. However, it can never be affirmed that those controls are really made appropriately and timely. While for Palestinian investment bank (PIB) no revealed description about credit control in their annual reports as Basel (2000) requirements.

Credit Risk Mitigation

Regarding their credit risk mitigation techniques, both banks made a good use of traditional approaches for minimizing credit risk, among which, credit limits and collateral as well as security take a leading role. However, both banks did not mention in their annual reports any description about new techniques or practices for minimizing credit risk such as securitization or credit derivatives, so it can be concluded that their practices for credit risk mitigation is still limited. This situation can be explained partly by the reason that most of their credit exposures are coming from the individual, commercial lending and public lending, for which the use of ways such as credit limits and collateral may already be sufficient to reduce the risk to an acceptable level.

Credit Disclosure

Credit disclosure has great impact on the completion of this part of study. Both banks PCB and PIB have done obviously worse and insufficient description in credit disclosure, and they are far from following the recommendations of Basel (2000). What can be found in the Palestinian Commercial bank (PCB)'s annual reports is general description of the

management structures, policies and brief information regarding credit exposure and quality, no analysis or explanation and no introduction about the rating or modeling systems have been disclosed. While Palestinian investment bank (PIB) has done obviously much worse than PCB, since there is much lack of relevant information disclosed in its annual reports, will certainly lead outsiders to doubt the soundness of banks' credit risk management, which may actually be quite wrong and misleading.

For simplification, we put the four banks into two groups, the first group comprise from the larger banks (bank of Palestine and AL-Quds bank) while the smaller banks (Palestinian commercial bank and Palestinian investment bank) represent the second group.

To sum up the analysis, we construct a table for summarizing the comparison results between group 1 and group 2 and emphasizing certain recommendations, which is displayed as follows.

Table 4.34: Comparisons and recommendations between the two groups of banks against Basel requirements

	Group 1 Banks	Group 2 Banks	Analysis and Recommendations
Credit risk environment	-clear understanding on maximum credit exposure in the business -clear designation of credit risk management responsibilities	-unsatisfactory levels of governance environment -PIB had completely no description about governance structure	generally, the sample banks have not yet met satisfactory levels with Basel requirements on establishing appropriate credit environment -BOP indicate satisfactory levels in this area
Credit granting process	-different assessments are designed to different customer types -AL-quds bank lack	-systematic procedure for credit granting -lacks of relevant information at PIB	-the sample banks should make efforts to make their credit granting process

	relevant information		more sustainable -relevant information should be disclosed
Credit risk measurement	-internal rating systems are used -self developed PD model at BOP	-lacks of self-developed credit risk models -internal rating systems are used -lacks of rating system for individuals borrowers at PCB	-should give more attention to the use of credit risk models -the use of external rating systems should be followed -stress testing should be given more attention
Credit monitor and control	-credit concentration is given attention to -credit review is undertaken -credit quality is made	-credit concentration is given attention -credit review is undertaken -credit quality is made	-group 1(larger banks) accord better job) to Basel requirements than group 2 (smaller banks)
Credit risk mitigation techniques	-combination of traditional and newer methods for minimizing credit risk	-reliance on traditional methods for mitigation credit risk	-the bank should choose and adopt the mitigation technique that match its credit exposure type
Credit disclosure	-medium satisfactory levels of information disclosure	Limited information disclosed in the annual reports -PIB has very limited information disclosure	-the sample banks should make improvements to meet Basel requirements on credit disclosure

Source: Zidan (The Author), 2013

CHAPTER FIVE
CONCLUSIONS AND RECOMONDATIONS

5.1 Conclusions

Banks, just like all other forms of businesses, face many risks. Credit risk is one of the major risks the banking sector faces; it is also the major cause of serious banking problems resulting from poor credit risk policies and management of such risks.

The aim of this study was to find out the impact of credit risk policies adopted by Palestinian commercial banks on their profitability. This study examined the relationship between credit risk and profitability of some selected banks in Palestine between 2005-2011. The study was limited to identification of the relationship between credit risk management and profitability of five Palestinian commercial banks excluding Islamic banks. Therefore, the study was limited to five sample banks and was not generalized for the all banks operate in Palestine. Furthermore, this study has used both the quantitative and qualitative approaches and focused on the description of the outputs of SPSS. The quantitative method was used in order to fulfill the main purpose of the study. Multiple regression models were used to do the empirical analysis, developing two models; each consists of one dependent variable and five independent variables. In the first model, the researcher used Return on Assets (ROA) as profitability indicator and Return on Equity (ROE), in the second model, as an indicator of profitability. In contrast, good lending principles, credit monitoring, capital adequacy, income diversification and operational efficiency as credit risk management indicators were measured by five financial ratios available in the financial statements of Palestinian commercial banks. Non-Performing Loans Ratio (NPLR), Capital Adequacy Ratio (EQTA), Loan Loss Provisions Ratio (LLPI), Non-interest Income Ratio (NIDR) and Operational Cost Efficiency Ratio (OPNI) were the ratios that measured the independent variables respectively.

The results obtained from the regression models show that credit risk management had a significant impact on profitability with 70.6% possibility of NPLR, EQTA, LLPI, NIDR

and OPNI, in predicting the variance in ROA, and 40.6% possibility in predicting the variance in ROE. In other words, the R square for ROA (0.706) was found to be higher than ROE (0.406), suggesting that the independent variables appeared to influence ROA much more than ROE.

Therefore, one can say that the credit risk management strategy determines profitability level to a considerable extent.

Despite the positive improvement in ROA and ROE as profitability indicators, still the Palestinian commercial banks (study sample), comparable to industry international standards, were less efficient and had weak performance.

In the ROA model, the results showed that NPLR, EQTA, LLPI and OPNI were negatively significant while non-interest ratio (NIDR) had no significance but had a positive effect. For this reason, Hypotheses 1, 2, 3 and 5 have been rejected. Therefore, the alternative Hypothesis has been accepted and this had a significant impact on profitability of the commercial banks in Palestine. The fourth null hypothesis was accepted.

Interesting but quite surprising, the study results showed that in ROE model, all variables, namely NPLR, EQTA, LLPI,NIDR and OPNI, were not significant. Therefore, the null hypotheses 1, 2, 3, 4 and 5 were accepted.

Concerning the way the major Palestinian commercial banks practiced their credit risk policies, credit risk management techniques and practices were compared from various aspects in order to draw similarities as well as differences. Generally, it was found that the major Palestinian commercial banks with larger size (Bank of Palestine and somewhat Al-Quds Bank) managed credit risk inherent in their banking more suitable than the smaller ones (Palestinian Commercial Bank and Palestinian Investment Bank) and followed the Basel guidelines much better. However, when compared with the major Basel regulations regarding credit risk management, it should be admitted that none of the large or small Palestinian banks had met all the requirements strictly. It was found that the largest Palestinian Commercial bank in particular followed the general principles to some extent while the others were still long way from Basel regulations, especially in the area of credit risk mitigation tools, credit control and the best practice of credit disclosure issued by Basel (2000).

Therefore, the banks' managements need to be careful in setting up credit policies to make sure they would not negatively affect profitability. They also need to know how credit policies affect the operation of their banks to ensure prudent utilization of financial resources and maximization of profit. Unsound credit risk management affect the bank's profitability negatively, the quality of its assets and non-performing loans which may eventually lead to financial distress.

5.2 Recommendations

In the light of study findings, the researcher offers a number of recommendations which may be useful for banks' managements and PMA policy makers:

- There is a need for orientation to reduce conservative lending to public sector (government) because of the increasing trend of public sector's share of total credit granted by banks operating in Palestine. This involves a high degree of risk and increases banks' exposure to this risk, since credit granted to the government exceeds banks equity to all banks whether its local or foreign banks.

-Since banks are the main source of credit in the domestic markets, due to the fact that the capital market is weak and limited, and it lacks the ability to provide adequate sources of financing for investors, banks need to increase their capital base and equity capital in particular. Although it is the most expensive source of banks' funding, it provides a loss absorbing cushion for unexpected events (the first line of defense) and if properly designed, introduces incentives for banks to limit the risk of their activities and enhance the competitive position in the financial sector.

- There is also a need for orientation to merge, particularly smaller banks, so that there would be banking units capable of competing, providing better service to clients and promoting stability of the banking sector.

-Since the operational cost efficiency management was found to be negatively significant with bank's profitability and much higher than industry standards, there is a possibility for these banks to improve profitability by focusing attention on proper cost control and operating efficiency.

- There is a necessity for the commercial banks to improve their good lending principles, in addition to the supervision and periodic review of the credit portfolio before and after the granting of credit. In other words, these banks should have a keen awareness of the need to identify measure, monitor and control credit risk since loans are the largest and most obvious source of this risk.

-No absolute recommendation can be made on the adoption of newer methods of credit risk mitigation techniques since Palestinian commercial banks rely heavily on traditional methods because banks choose the techniques they are best at and match their operations.

-There is a need for orientation to increase advanced training courses for staff in the relevant departments and put the right person in the right position.

-There is a necessity for promotion of out-of-court settlement for debt collection.

- There is also a need to establish a national registry of pledges of movable property to increase the range of collateral is likely to be accepted by banks to secure credit facilities.

References

[1] Abu Bakar, N. And Tahir, I. M. (2009). Applying Multiple Linear Regression and Neural Network to Predict Bank Performance. *International Business Research*. [Online]. Vol 2 No (4). Available from: www.ccsenet.org/journal.html

[2] Abu- Moammar, F. (2006). "Assessment of credit facilities from the standpoint of the owners of companies, "Conference of Growth and Development of the Gaza Strip after the Israeli Withdrawal, the Islamic University.

[3] Al-Hashimi, A. (2007). "Determinants of Bank Spreads in Sub-Saharan Africa," www.scribd.com/doc/36905178/Thesis-Final-Draft

[4] Altman, E.I. (2002), "Managing Credit Risk, A Challenging for the New Millennium". Economics Notes, vol 31, issue 2: 201-214.

[5] Al-Zubeidi, Hamzeh, (2000), *Financial Analysis: Performance Evaluation and Forecasting Failure*. Amman: Al- Warraq Establishment.

[6] Ambrose, B. W.; Lacour-Little, M. and Sanders, A. B.(2005). Does regulatory capital arbitrage, reputation, or asymmetric information drive securitization? *Journal of Financial Service Research* No 28: 34-38

[7] American Society of Appraisers (2006). Collateral & Risk- Based Capital Standards. International Appraisal Conference, Brooklyn, New York.

[8] http://www.appraisers.org/Files/Education/ARM/CollateralandRiskBasedCapitalStandardsJC.pdf

[9] Angkinand, A. P., Sawangngoenyuang, W. and Wihlborg, C. (2010). Financial liberalisation and banking crises: a cross-country analysis. *International Review of Finance,* 10(2).

[10] Ardrey, William; Perryer, Chris; Keane, Michael & Stockport, Gary. (2009). *Prudential Supervision, Banking and Economic Progress: Implementation of Risk Management Procedures in Joint Stock Banks in Vietnam*. Available in www form http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1463168

[11] Arif, A., Abrar, A., Afzal, M. (2012). Credit Risk and Shareholders' Value in a Developing Economy: Evidence from Pakistani Banking System. *Journal of Economics and Behavioural Studies* 4(2) 87-95.

[12] Arora, Diksha and Agarwal, Ravi. (2009). Banking risk management in India and RBI supervision. *Social Science Research Network*. Available in www form http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1446264

[13] Arif Almazari, A. (2011). Financial performance evaluation of some selected Jordanian commercial banks**,** *International Research Journal of Finance and Economics*. No 68: 50- 59

[14] Atikogullari, M., (2009). An analysis of the Northern Cyprus banking sector in the post - 2001 period through the CAMELS approach. *International Research* Journal *of Finance and Economics*, 32: 212 – 229.

[15] Athanasoglou, P., Brissimis, S N., and Delis, M D. (2005) ''Bank-specific, industry specific and macroeconomic determinants of bank profitability''. MPRA Paper No.153

[16] Balin, Bryan. (2008). Basel I, Basel II, and Emerging Markets: A Nontechnical Analysis. *The Johns Hopkins University School of Advanced International Studies (SAIS)*, Washington DC.

[17] Bank of Pakistan, (2008). Guidelines on Internal Credit Risk Rating Systems. http://www.sbp.org.pk/bsrvd/2007/Annex-C8.pdf

[18] Basel Committee (1986). The Management of Banks' Off-Balance Sheet Exposures. Basel Committee on Banking Supervision.

[19] Basel Committee (1988). International Convergence of Capital Measurement and Capital Standards. Basel Committee on Banking Supervision.

[20] Basel Committee (1998). International Convergence of Capital Measurement and Capital Standards. Basel Committee on Banking Supervision.

[21] Basel Committee (1999). Credit Risk Modeling: Current Practices and Applications. Basel Committee on Banking Supervision.

[22] Basel Committee (2000). Principles for the Management of Credit Risk. Basel Committee on Banking Supervision.

[23] Basel Committee (2001). The Internal Rating- based Approach. Basel Committee on Banking Supervision.

[24] Basel Committee (2006). International Convergence of Capital Measurement and Capital Standards. Basel Committee on Banking Supervision, June.

[25] Basel Committee (2008). Innovations in credit risk transfer: implications for financial stability. Basel Committee on Banking Supervision.

[26] Bauer W. & Ryser Marc. (2004), "Risk Management Strategies for Banks",

[27] Journal of Banking & Finance vol 28, issue 2: 331-352.

[28] Benzin, A., Truck, S., Rachev, S. (2004) *Approaches to Credit Risk in the New Basel* Accord Capital http://www.ams.sunysb.edu/~rachev/publication/benzin_trueck.pdf

[29] Bessis, Joel. (2002) Risk Management in Banking. 2nd ed. London: Wiley & Sons.

[30] Bessis, Joel (2010) *Risk management in banking*. 3rd ed. London: Wiley & Sons.

[31] Bichsel, R., and Blum, J. (2004). The Relationship between Risk and Capital in Swiss Commercial Banks: A Panel Study. *Applied Financial Economics* 14(8), 591-597.

[32] Bielecki, T., Brigo, D., Patras, F. (2011). Credit risk Frontiers: Supreme Crisis, Pricing, and Hedging, CVA, MBS, Ratings and Liquidity. London: John Wiley and Sons.

[33] Bikker, J.A. and H. Hu (2002). Cyclical Patterns in profits, provisioning and lending of banks and procyclicality of the New Basel Capital Requirements, *BNL Quarterly Review*, 221, 143-175.

[34] Blazy, R. Weill, L. (2006). Why Do Banks Ask for Collateral and Which Ones? http://ifs.u-strasbg.fr/large/publications/2006/2006-03.pdf

[35] Bodie. Zvi, Kane. Alex AND Marcus J. Alan. (2005), "Investments", 6th Ed., McGraw-Hill.

[36] Bouchaud, J., Potters, M. 2003. *Theory of Financial Risk and Derivative Pricing: From Statistical Physics to Risk Management*. 2nd. ed.. Cambridge: Cambridge University Press.

[37] Broll, Udo, Pausch, Thilo and Welzel, Peter. (2002). Credit Risk and Credit Derivatives in Banking. Discussion Paper No. 228.

[38] Buehler, K. S & Vijay, D & Gunnar, P. (2004), "The Business Case for Basel II", McKinsey Quarterly, issue 1:82-91.

[39] Buysksalvarci, A., Abdioglu, H. (2011). Testing the weak form efficiency of the Turkish stock market. African Journal of Business Management, Vol 5 (34): 13044-13056.

[40] Cannata, F., and Quagliariello, M. (2006). "Capital and Risk in Italian Banks: A simultaneous Equation Approach. *Journal of Banking Relation* 7(3/4), 283-297.

[41] Casu, B., Girardone, C. and P. Molyneyx, (2006), Introduction to Banking. FT Prentice Hall, Pearson Education (CGM). .

[42] Caouette, John B., Altman, Edward I., Narayanan, Paul and Nimmo, Robert. (2008). Managing Credit Risk: The Great Challenge for the Global Financial Markets. 2nd ed. New Jersey: John Wiley and Sons.

[43] Choudhry, M. (2004). *An Introduction to Credit Derivatives***.** Oxford**:** Butterworth-Heinemann.

[44] Croahy, M. & Galal, D& Mark, R. (2001), *Risk Management, Hedging Credit Risk* New York: McGraw Hill.

[45] Crouhy, Michel, Galai, Dan and Mark, Robert. (2006). *The Essentials of Risk Management.* New York: McGraw-Hill.United Kingdom.

[46] Demirguc-Kunt, A., Huizinga, H., (1998). ''Determinants of commercial bank interest margins and profitability: Some international evidence''. *World Bank Economic Review* 13, 379-408.

[47] Dorfman, Mark S. (1998), "Introduction to Risk Management & Insurance", 6th Ed., Prentice Hall.

[48] Duffie, D. and Singleton, K. J., (2003). *Credit Risk: Pricing, Measurement and Management.* Oxford: Princeton University Press.

[49] Ebhodaghe, J.U. (2001). The Causes of Bank Failure and Persistent Distress in the Banking Industry. A Paper presented at the Public Hearing on Developments in the Banking System Organized by House Committee on Banking and Currency, Abuja, Nigeria.

[50] Emslie, S., & Hancock, C. P., (2008). *Issues in healthcare risk management*. Oxford: Healthcare Governance.

[51] Eng, L, L., and Nabar, S. (2007).Loan Loss Provisions by Banks in Hong Kong, Malaysia and Singapore. *Journal of International Financial Management and Accounting*, 18(1), 18-38.

[52] European Federation for Welding, Joining and Cutting (EWF), (2008). Fundamentals of Risk Management, available at: http://www.ewf.be/media/documentosDocs/doc_16_ewf-644-08-fundamentals-of-risk-management.pdf

[53] Flamini, V., McDonald C. and Schumacher, L. (2009) "The Determinants of Commercial Bank Profitability in Sub-Saharan Africa", Working Paper, WP/09/15, International Monetary Fund.

[54] Foong K. K (2008). *Return-on-equity ratio can show how efficient banks are*. Malaysian Institute of Economic Research.

[55] Giesecke, Kay (2004), Correlated default with incomplete information, *Journal of Banking and Finance* (28), 1521-1545.

[56] Ghosh, A. (2012). *Managing Risks in Commercial and Retail Banking*. London: John Wiley & Sons.

[57] Goddard, J., Molyneux, P. and Wilson, J.O.S. (2004). Dynamics of growth and profitability in banking, *Journal of Money, Credit and Banking* 36, 1069-1090.

[58] Goetta, Colquitt (2007). *Credit Risk Management: How to Avoid Lending Disasters and Maximize Earnings.* New York: McGraw Hill.

[59] Goodhart, C. E. (2005). Financial regulation, credit risk and financial stability. *National Institute Economic Review,* 192: 118-129.

[60] Gregory, J. (2010). *Counterparty Credit Risk: The New Challenge for Global Financial Markets.* London: John Wiley and Sons.

[61] Greuing H., and Bratanovic, B. (2003). *Analyzing and Managing Banking Risk: A Framework for Assessing Corporate Governance and Financial Risk*, 2nd ed.Washington DC: World Bank Publications.

[62] Greuning, Hennie van & Bratanovic, Sonja Brajovic. (2009). *Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management*. 3rd ed. Washington: The World Bank.

[63] Gujarati, D. N. (2003). *Basic Econometrics*, (4th ed.) New York: McGraw Hill.

[64] Hanhon, P., and Klingeiel, D. (2000). Controlling fiscal cost of bank crisis: World Bank working paper No. 2441.

[65] Haubrich, J and Thomson, J. (1993). Loan sales, implicit contracts and bank structure, Working paper 9307 http://www.clevelandfed.org/Research/Workpaper/Index.cfm

[66] Hayden, E. Porath, D and Westernhagen, N. (2006). Does diversification improve the performance of German banks? Evidence from individual bank portfolio.http://89.96.248.67/credit/credit2006/poster/8_Hayden_Porath_vWesternhagen.pdf

[67] Huang, L and Chen, L.(2006). Does bank performance benefit from non-traditional activities? A case of non-interest incomes in Taiwan commercial banks. *Asian Journal of Management and Humanity Sciences, 1,(3)359-378*

[68] Imad Z. Ramadan, Qais A. Kilani, Thair A. Kaddumi. (2011). Determinants of bank profitability: Evidence from Jordan *International Journal of Academic Research*, issue (4): 180-191

[69] IMF. (2011). *Macroeconomic and Fiscal Framework for the West Bank and Gaza: Seventh Review of Progress* Staff Report for the Meeting of the Ad Hoc Liaison Committee.

[70] International Standards Organization. (2008). *Draft International Standard ISO/DIS 31000.* Available in www form < http://www.rmia.org.au/LinkClick.aspx?fileticket=AWkZuS%2BB6Wc%3D&tabid=85&mid=634

[71] Ja'afari, Mohammed. (2003) Palestinian Services Sector and Its Role in the Economic Development Process. Ramallah: Mass

[72] Keegan, Mary. (2004) Management of Risk: Principles and Concepts, H M Treasury, the Orange Book, Working Papers.
Www. hmtreasury. gov.uk

[73] Keasey, K. & Veronesi, G. (2008). Lessons from the Northern Rock affair. *Journal of Financial Regulation and Compliance*, 16(1), 8-18.

[74] Kristiansen, G. E. (2006). "Strategic Bank Monitoring & Firms' Debt Structure", Department of Economics, Norwegian School of Economics & Business Administration, Norway, D82, G32, G21, L14.

[75] Koch, T.W & Scott, M.S. (2005), "Bank Management, Analyzing Bank Performance", 5th Ed., Mc Graw-Hill, New York.

[76] Kosmidou, K. (2008). The determinants of banks, profits in Greece during the period of EU financial integration. *Journal of Managerial Finance.* [Online] 34 (3). Available from: http://www.emeraldinsight.com

[77] Li, Y. (2003). "The Asian Financial Crisis and Non-performing Loans: Evidence from Commercial Banks in Taiwan". *International Journal of Management*, 20(1), 60-73.

[78] Longenecker, G., Justin, Moore W. Carlos and Petty J. William. (2006).*Credit*

[79] *Scoring and Small Business: A Review and the need for Research*, Hankamer School of Business, Buylor University

[80] Lowe, P. (2002). Credit Risk Measurement and Procyclicality. *BIS Working Paper No 116.*

[81] Marquez, Javier. (2008). An Introduction to Credit Scoring for Small and Medium Size Enterprises.

http://siteresources.worldbank.org/EXTLACOFFICEOFCE/Resources/870892-1206537144004/MarquezIntroductionCreditScoring.pdf

[82] Mengle, D. (2007). "Credit Derivatives: Where's the Risk," a working Paper presented at Atlanta Fed's 2007 Financial Markets Conferenc ehttp://www.frbatlanta.org/filelegacydocs/erq407_mengle.pdf

[83] Miller, S.M. and A.G. Noulas (1997). Portfolio mix and large-ban profitability in the USA. *Applied Economics* 29 (4), 505-512.

[84] Mishkin, F. S. & Eakins, S. G. (2006), "Financial Markets & Institutions", 5th Ed., Addisson & Wisley.

[85] Monetary Authority of Singapore (2006). *Credit Risk*. Monetary Authority of Singapore

[86] National Audit Office (2000) Supporting Innovation**:** Managing Risk in Government Departments, available at: http://www.nao.org.uk/publications/9900/managing_risk_in_gov_depts.aspx

[87] Neal, R. S. (1996). Credit Derivatives: New Financial Instruments for Controlling Credit Risk. *Economic Review*

[88] Olweny and Shipho, (2011). Effects of banking sectoral factors on the profitability of commercial banks in Kenya, *Journal of* Economics *and Finance Review* 1(5) 01 – 30.

[89] Palestinian Monetary Authority, (2012). Financial stability Report.

[90] Palestinian Monetary Authority. (2011). Financial stability Report, available at:http://www.pma.ps/Portals/1/Users/002/02/2/Publications/English/Annual%20Reports/Financial%20Stability%20Reports/FSR_2011_English.pdf

[91] Price Waterhouse Coopers (2005). "Challenges of the New Basel Accord: Action, for Senior Management"

[92] Pyle, D. H. (1997), "Bank Risk Management: Theory", Hass School of Business University of California, Berkely.

[93] Raspanti, T. M & Szakal, E. (2002), "Creating Value through Credit Risk Mitigation", Business Credit, vol 104, issue 3, p (1-4).

[94] Rose, P. Sylvia, & Hudging, S.C. (2005), *Bank Management & Financial Services*, 6th ed. New York: McGraw Hill.

[95] Saci, K., Giorgioni, G., Holden, K. (2009). Does financial development affect growth? *Applied Economics* 41 (13), 1701-1707.

[96] Santomero, Anthony and Babbel, David. (2004).*Financial Markets, Instruments and Institutions* 3rd ed.: New York: Mc Graw-Hill.

[97] Saunders, A., Allen, L. (2002). Credit Risk Measurement: New Approaches to Value at Risk and Other Paradigms. (2nd ed.). London: John Wiley and Sons.

[98] Saunders, Anthony and Cornett, Marcia Millon (2007). *Financial Institutions Management: A Risk Management Approach* 5th Ed. New York: McGraw-Hill.

[99] Saunders, Anthony and Cornett, Marcia Millon (2008), F*inancial Institutions Management: A Risk Management Approach* 6th Ed. New York: McGraw-Hill.

[100] Sinkey, Jr and Joseph, F. (1992). Commercial bank financial management. In: *Financial Service Industry,* 4th ed. Ontario: Macmillan.

[101] Spedding, L., & Rose, A., (2008). Business risk management handbook: A Sustainable approach. Amsterdam: CIMA Publishers.

[102] Staikouras, C. and Wood, G. (2003). The Determinants of bank profitability in Europe, Paper presented at the European Applied Business Research Conference.

[103] Strischek, D. (2002). 'Credit Culture Part 2: Types of credit Culture." *RMA Journal*

[104] Tarawneh, M. (2006). A Comparison of Financial Performance in the Banking Sector: Some Evidence from Omani Commercial Banks. *International Research Journal of Finance and Economics* No (3), 101-112.

[105] The Financial Service Roundtable (1999), "Guiding Principles in Risk Management for U.S Commercial Banks", Report of the Subcommittee and Working Group on Risk Management Principles.

[106] Tracy, W. F & Carey, M. S. (1998), "Credit Risk Rating at Large U.S Banks", Journal of Bank & Finance, Federal Reserve Board, Washington DC, vol. 24, pp. (167-201).

[107] Utrecht University. (2010). *International Financial Economics Program*. The Netherlands. Available in www form http://www.uu.nl/EN/informationfor/internationalstudents/inteconomics/studyprogramme/track2/Pages/default.aspx

[108] Weill, L. (2004). Measuring cost efficiency in European banking: A comparison of frontier techniques. *Journal of Productivity Analysis* 21, 133–152

[109] Woo, S. (2011). *Super Disclosure: The Flawed Credit Rating Regulatory Regime*. Available at http://www.hertig.ethz.ch/Woo_Super_Disclosure_Mar11.pdf

[110] Twinn, C. I., (1994). Asset-backed Securitization in the United Kingdom. Bank of England, Available at http://www.bankofengland.co.uk/publications/quarterlybulletin/qb940204.pdf

[111] Vong, P. I. and Chan, H. S., (2006), Determinants of Bank Profitability in Macau, *Journal of Banking and Finance*. Available at: www.amcm.gov.mo/publication/quarterly/July2009/macaoprof_en.pdf.

APPENDIXES

Appendix1: Basel Capital Accord credit risk weights

0%

a) Cash
b) Claims on central governments and central banks denominated in national currency and funded in that currency
c) Other claims on OECD central government and central banks
d) Claims collateralized by cash of OECD central governments securities or guaranteed by OECD central governments

0, 10, 20 or 50% (at national discretion)

a) Claims on domestic public-sector entities, excluding central government, and loans guaranteed by such entities

20%

a) Claims on multilateral development banks (IBRD, IADB, ASDB, AFDB, EIB) and claims guaranteed by, or collateralized by securities issued by such banks
b) Claims on banks incorporated in the OECD and loans guaranteed by OECD incorporated banks
c) Claims on banks incorporated in countries outside the OECD with a residual maturity of up to one year and loans with a residual maturity of up to one year guaranteed by banks incorporated in countries outside the OECD
d) Claims on non-domestic OECD public- sector entities, excluding central government, and loans guaranteed by such entities
e) Cash items in process of collection

50%

a) Loans fully secured by mortgage on residential property that is or will be occupied by the borrower or that is rented

100% Claims on the private sector

Appendix 2: Timeline for New Capital Standards

PHASE-IN ARRANGEMENTS FOR NEW MINIMUM RISK-BASED CAPITAL RATIOS (ALL DATES AS OF JANUARY 1)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tier 1 Common Equity	2.0%	2.0%	3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Capital Conservation Buffer	-	-	-	-	-	0.625%	1.25%	1.875%	2.50%
Tier 1 Common Equity plus Capital Conservation Buffer	2.0%	2.0%	3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7%
Tier 1 Capital	4.0%	4.0%	4.5%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%
Total Capital	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Total Capital plus Capital Conservation Buffer	8.0%	8.0%	8.0%	5.0%	8.0%	8.625%	9.25%	9.875%	10.5%
PHASE-IN ARRANGEMENTS FOR LEVERAGE RATIO									
Leverage Ratio	Supervisory Monitoring			Parallel Run (3%) (disclosure begins January 1, 2015)				Pillar 1 Migration	

PHASE-OUT ARRANGEMENTS FOR CAPITAL INSTRUMENTS NO LONGER QUALIFYING AS NON-COMMON EQUITY TIER 1 OR TIER 1 (ALL DATES AS OF JANUARY 1)									
2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
90%	80%	70%	60%	50%	40%	30%	20%	10%	0%
PHASE-IN ARRANGEMENTS FOR DEDUCTIONS OF REGULATORY ADJUSTMENTS TO COMMON EQUITY									
0%	20%	40%	60%	80%	100%				

Source: Sherman & Sterling llp, 2001

Appendix 3: Principles for the Assessment of Banks' Management of Credit Risk

Basel Committee on Banking Supervision, September 2000

A. Establishing an appropriate credit risk environment

Principle 1: The board of directors should have responsibility for approving and periodically (at least annually) reviewing the credit risk strategy and significant credit risk policies of the bank. The strategy should reflect the bank's tolerance for risk and the level of profitability the bank expects to achieve for incurring various credit risks.

Principle 2: Senior management should have responsibility for implementing the credit risk strategy approved by the board of directors and for developing policies and procedures for identifying, measuring, monitoring and controlling credit risk. Such policies and procedures should address credit risk in all of the bank's activities and at both the individual credit and portfolio levels**.**

Principle 3: Banks should identify and manage credit risk inherent in all products and activities. Banks should ensure that the risks of products and activities new to them are subject to adequate risk management procedures and controls before being introduced or undertaken, and approved in advance by the board of directors or its appropriate committee.

B. Operating under a sound credit granting process

Principle 4: Banks must operate within sound, well-defined credit-granting criteria. These criteria should include a clear indication of the bank's target market and thorough understanding of the borrower or counterparty, as well as the purpose and structure of the credit, and its source of repayment.

Principle 5: Banks should establish overall credit limits at the level of individual borrowers and counterparties, and groups of connected counterparties that aggregate in comparable and meaningful manner different types of exposures, both in the banking and trading book and on and off the balance sheet.

Principle 6: Banks should have a clearly-established process in place for approving new credits as well as the amendment, renewal and re-financing of existing credits.

Principle 7: All extensions of credit must be made on an arm's-length basis. In particular, credits to relate companies and individuals must be authorized on an exception basis,

monitored with particular care and other appropriate steps taken to control or mitigate the risks of non-arm's length lending.

C. Maintaining an appropriate credit administration, measurement and monitoring process

Principle 8: Banks should have in place a system for the ongoing administration of their various credit risk-bearing portfolios.

Principle 9: Banks must have in place a system for monitoring the condition of individual credits, including determining the adequacy of provisions and reserves.

Principle 10: Banks are encouraged to develop and utilize an internal risk rating system in managing credit risk. The rating system should be consistent with the nature, size and complexity of a bank's activities.

Principle 11: Banks must have information systems and analytical techniques that enable management to measure the credit risk inherent in all on- and off-balance sheet activities. The management information system should provide adequate information on the composition of the credit portfolio, including identification of any concentrations of risk.

Principle 12: Banks must have in place a system for monitoring the overall composition and quality of the credit portfolio.

Principle 13: Banks should take into consideration potential future changes in economic conditions when assessing individual credits and their credit portfolios, and should assess their credit risk exposures under stressful conditions.

D. Ensuring adequate controls over credit risk

Principle 14: Banks must establish a system of independent, ongoing assessment of the bank's credit risk management processes and the results of such reviews should be communicated directly to the board of directors and senior management.

Principle 15: Banks must ensure that the credit-granting function is being properly managed and that credit exposures are within levels consistent with prudential standards and internal limits. Banks should establish and enforce internal controls and other practices to ensure that exceptions to policies, procedures and limits are reported in a timely manner to the appropriate level of management for action.

Principle 16: Banks must have a system in place for early remedial action on deteriorating credits, managing problem credits and similar workout situations.

E. The role of supervisors

Principle 17: Supervisors should require that banks have an effective system in place to identify measure, monitor and control credit risk as part of an overall approach to risk management. Supervisors should conduct an independent evaluation of a bank's strategies, policies, procedures and practices related to the granting of credit and the ongoing management of the portfolio. Supervisors should consider setting prudential limits to restrict bank exposures to single borrowers or groups of connected counterparties.

Appendix 4: The ratios (%) of the sample banks for the period 2005-2011

BANK	NIDR	NPLR	LLPI	EQTA	OPNI	YEAR
Bank of Palestine	35.7	2.56	8	8.76	63.20	2005
	32	2.53	2.06	9.33	144	2006
	22.5	2.48	8.06	10.64	71.70	2007
	34.2	2.36	8.02	11.76	89.80	2008
	38.4	1.16	1.03	11.6	189	2009
	45.3	1.13	1	11.2	52	2010
	58	1.72	0.5	11.7	182	2011
Al-quds bank	56	31.19	31	23.43	43	2005
	23.1	23.59	60	32.14	97.50	2006
	23.1	29.14	7.07	19.2	120	2007
	28.5	7.72	50	17	58.70	2008
	43.9	8.26	31	14.16	96	2009
	38.8	2.06	7.1	11.8	50	2010
	37.8	3.92	11.5	11.66	121.7	2011
Palestinian investment bank	35	7.3	/	33.8	80	2005
	32.2	5.34	/	27.74	64.20	2006
	28	5.55	/	28.7	169	2007
	35.1	2.74	3.15	28.72	75	2008
	38.9	1.45	2.6	24.87	50	2009
	35.4	10.78	23	23.5	87	2010
	39.7	3.37	19	26.5	59.4	2011
Palestinian commercial bank	46.3	35.61	11.5	16	95	2005
	31.2	35.09	22	18.5	64.1	2006
	27	42.53	25	16.62	93.5	2007
	42.1	24.92	61	23.37	79.6	2008
	37.3	8.87	4	20.5	66.8	2009
	37.6	4.34	2	16.2	83	2010
	25.5	2.87	1	16.6	95.8	2011
Al rafah bank	1	/	/	31.36	95	2005
	11.7	0.00	/	62.7	104	2006
	22.5	0.03	0.00	31.4	61	2007
	3	0.92	7	26.5	89	2008
	23.8	0.83	6.65	17.6	99.2	2009
	23.8	4.83	11.6	18.62	99.1	2010
	36	2.72	16	11.8	104	2011

Source: Bank scope

Appendix 5: Regression analysis output in SPSS

Table 4.35: Multiple Linear Regression results for model 1

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	OPNI, NPLR, EQTA, NIDR, LLPI(a)	.	Enter

a All requested variables entered.
b Dependent Variable: ROA

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.840(a)	.706	.656	.49267	1.932

a Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI
b Dependent Variable: ROA

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.924	5	3.385	13.945	.000(a)
	Residual	7.039	29	.243		
	Total	23.963	34			

a Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI
b Dependent Variable: ROA

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF	B	Std. Error
1	(Constant)	2.205	.498		4.427	.000		
	NPLR	-.024	.008	-.346	-2.925	.007	.725	1.378
	EQTA	-.022	.009	-.269	-2.362	.025	.780	1.283
	LLPI	-.015	.006	-.311	-2.403	.023	.604	1.655
	NIDR	.010	.009	.139	1.099	.281	.636	1.573
	OPNI	-.007	.003	-.311	-2.343	.026	.576	1.738

a Dependent Variable: ROA

CollinearityDiagnostics(a)

Model	Dimension	Eigen value	Condition Index	Variance Proportions					
		(Constant)	NPLR	EQTA	LLPI	NIDR	OPNI	(Constant)	NPLR
1	1	4.670	1.000	.00	.01	.01	.01	.00	.00
	2	.672	2.636	.00	.26	.04	.18	.00	.00
	3	.334	3.742	.00	.64	.00	.56	.00	.00
	4	.221	4.597	.01	.04	.23	.00	.17	.02
	5	.084	7.455	.01	.00	.58	.15	.04	.51
	6	.019	15.865	.98	.04	.14	.10	.79	.45

a Dependent Variable: ROA

Table 4.36: Correlation matrix of the ROA and explanatory variables (model 1)

Correlations

		ROA	NPLR	EQTA	LLPI	NIDR	OPNI
ROA	Pearson Correlation	1	-.535(**)	-.399(*)	-.569(**)	.201	-.673(**)
	Sig. (2-tailed)		.001	.018	.000	.247	.000
	N	35	35	35	35	35	35
NPLR	Pearson Correlation	-.535(**)	1	-.028	.468(**)	.251	.277
	Sig. (2-tailed)	.001		.872	.005	.145	.108
	N	35	35	35	35	35	35
EQTA	Pearson Correlation	-.399(*)	-.028	1	-.050	-.423(*)	.311
	Sig. (2-tailed)	.018	.872		.774	.011	.069
	N	35	35	35	35	35	35
LLPI	Pearson Correlation	-.569(**)	.468(**)	-.050	1	.206	.445(**)
	Sig. (2-tailed)	.000	.005	.774		.234	.007
	N	35	35	35	35	35	35
NIDR	Pearson Correlation	.201	.251	-.423(*)	.206	1	-.320
	Sig. (2-tailed)	.247	.145	.011	.234		.061
	N	35	35	35	35	35	35
OPNI	Pearson Correlation	-.673(**)	.277	.311	.445(**)	-.320	1
	Sig. (2-tailed)	.000	.108	.069	.007	.061	
	N	35	35	35	35	35	35

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 4.37: Multiple Linear Regression results for model 2

Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	OPNI, NPLR, EQTA, NIDR, LLPI(a)	.	Enter

a All requested variables entered.
b Dependent Variable: ROE

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.637(a)	.406	.304	10.21895	1.884

a Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI
b Dependent Variable: ROE

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2069.308	5	413.862	3.963	.007(a)
	Residual	3028.382	29	104.427		
	Total	5097.690	34			

a Predictors: (Constant), OPNI, NPLR, EQTA, NIDR, LLPI
b Dependent Variable: ROE

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF	B	Std. Error
1	(Constant)	11.303	10.334		1.094	.283		
	NPLR	-.090	.171	-.089	-.527	.602	.725	1.378
	EQTA	-.080	.192	-.068	-.418	.679	.780	1.283
	LLPI	-.213	.130	-.302	-1.639	.112	.604	1.655
	NIDR	.322	.195	.296	1.651	.110	.636	1.573
	OPNI	-.094	.065	-.274	-1.450	.158	.576	1.738

a Dependent Variable: ROE

Table 4.36: Correlation matrix of the ROE and explanatory variables (MODEL 2)

Correlations

		ROE	NPLR	EQTA	LLPI	NIDR	OPNI
ROE	Pearson Correlation	1	-.229-	-.261-	-.400-*	.328	-.548-**
	Sig. (2-tailed)		.185	.131	.017	.054	.001
	N	35	35	35	35	35	35
NPLR	Pearson Correlation	-.229-	1	-.028-	.468**	.251	.277
	Sig. (2-tailed)	.185		.872	.005	.145	.108
	N	35	35	35	35	35	35
EQTA	Pearson Correlation	-.261-	-.028-	1	-.050-	-.423-*	.311
	Sig. (2-tailed)	.131	.872		.774	.011	.069
	N	35	35	35	35	35	35
LLPI	Pearson Correlation	-.400-*	.468**	-.050-	1	.206	.445**
	Sig. (2-tailed)	.017	.005	.774		.234	.007
	N	35	35	35	35	35	35
NIDR	Pearson Correlation	.328	.251	-.423-*	.206	1	-.320-
	Sig. (2-tailed)	.054	.145	.011	.234		.061
	N	35	35	35	35	35	35
OPNI	Pearson Correlation	-.548-**	.277	.311	.445**	-.320-	1
	Sig. (2-tailed)	.001	.108	.069	.007	.061	
	N	35	35	35	35	35	35

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).