

The Impact of Credit Risk Management in Financial Market Indicators

—Analytical Study in the Iraqi Market for Securities

Mahdi Attia Jubouri

Faculty of Management and Economics, University of Babylon, Babylon, Iraq

Email: mahdiatyiah66@gmail.com

How to cite this paper: Jubouri, M. A. (2018). The Impact of Credit Risk Management in Financial Market Indicators. *Journal of Financial Risk Management*, 7, 254-277.

<https://doi.org/10.4236/jfrm.2018.73017>

Received: July 3, 2018

Accepted: September 24, 2018

Published: September 27, 2018

Copyright © 2018 by author and Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

The objective of this study was to determine the relationship between credit risk management and financial market indicators. The study problem is summarized as follows: Do credit risk management indicators affect financial market indicators in private banks? The study relied on two basic hypotheses: the existence of a significant and significant correlation and effect relationship between credit risk management and financial market indicators. The sample of the study was a sample of private commercial banks in Iraq consisting of eight banks. The required information was obtained through the annual reports of the sample banks, as well as through the official publications of the Iraqi Stock Exchange for the period (2007-2016). The study used the program (Microsoft Excel 2013) in addition to the statistical methods found in the statistical program (SPSS V.23), and the importance of the study that it emerged out of the intellectual basis of the nature of the variables of the study based on the practical reality of the variables and the ability of these variables to achieve the goals. The study reached a number of conclusions, the most prominent of which was the existence of a difference between the banks in the relationship of correlation and impact between the variables of the study, and the study also reached a set of recommendations and suggestions.

Keywords

Credit Risk Management, Financial Market Indicators, Private Banks

1. Introduction

Credit risk management and banking objectives are important topics that concern all types of organizations operating in the banking sector, especially private commercial banks, in order to achieve the most recent need to take care of the

latest developments in management and development so as to achieve a certain level of organizational performance. It can continue to work, and thus serve its goals and through it the service of the community in which it operates.

The importance of the study is to re-examine risk management practices applied by financial institutions. Such as, facilitate financial transactions, provide liquidity, engage in asset transfers, and in the process, face significant risks. In addition, financial institutions are often highly leveraged, financing a large part of their operations of debt. Making them sometimes in crisis, and banks must find a balance between asset risk and financial risk (i.e. leverage), especially in times of crisis. However, current regulations focus almost entirely on asset risk, ignoring in practice the financial risks arising from the bank's debt structure and financial responsibility. Structural credit risk management models also show promising potential for scaling up and flexibility of risk management systems for financial institutions. However, there are some obstacles to be overcome.

The importance of the variables of the study is the huge change in the surrounding environmental conditions, the increasing complexity and accelerating the pace of change. There is no longer a place for weak banks that do not improve the use of their abilities and their skills and the skills of their employees at various organizational levels. In terms of credit risk management indicators and how this affects their banking target indicators so that they can build upon their strategies to face the potential change in the environment.

Therefore, the objectives of the study were to concentrate developing the methodology of credit risk management in private banks operating in Iraq according to the modern management of banking risks. And assess the credit risk management policies adopted by private banks operating in Iraq, which aims to maintain the strength of capital. The assessment of the efficiency of information systems and analysis techniques that support credit risk management systems and processes in private banks operating in Iraq.

The study relied on the analytical research method based on the intellectual foundations of the modern colloquial sources and on the applied experiments in this culprit, the theoretical and practical review shows that credit risk decisions are influenced by a combination of personal, rational and institutional factors. The study showed an analysis of some important factors in the credit risk management process and the identification of indicators that show targets in banks.

In the light of this study, the bank, if it wants to succeed, must work to synthesize its indicators of credit risk management towards achieving financial market indicators. The more the bank achieves these indicators, the better it will be to achieve the banking objectives.

This is a scientific contribution to discuss topics that have been the subject of discussion and intellectual debate and knowledge in this area.

2. Research Methodology

2.1. Research Problem

Banking risk management is one of the most important topics of interest to

banking professionals worldwide, especially since the last few years. In the wake of successive financial and banking crises, which have had a significant impact on the global economy, these successive and in-depth banking crises have raised the interest of international economic and financial institutions, And it became clear that the most important reasons for the occurrence of these banking crises is the increasing banking risks faced by banks on the one hand, and lack of good management on the other hand, where credit risk is one of the most important risks facing banking, especially For the continuous technological development and the abolition of restrictions in the practice of banking activities The problem of research is the weakness and lack of attention required in the realization of credit risk management and take appropriate positions and procedures by the management of banks sample research.

Based on the above, the problem of research can be shown more clearly by raising the following question:

Do credit risk management indicators (capital adequacy ratio, non-performing loan ratio, loan to deposit ratio, debt to equity ratio, total debt ratio, return on risk adjusted capital) affect financial market indices (EPS, price ratio to profitability, share turnover, market value added) in private banks sample research operating in Iraq?

2.2. The Importance of Research

For the importance of the subject, the presence of a range of elements and components in any lending policy. For example, commercial banks can private sector salaries depend as collateral and accept a certificate salary permits issued by any company as well as rely on a guarantee sureties or a mortgage or even can rely business reputation for traders this Meanwhile, on the other hand, the lack of lending policy module because of the different banks in terms of disciplines and in terms of goals and the size of the capital, holding a lot of important decision-makers credit. Especially since the traditional methods adopted in the decisions of bank credit granted no longer respond to the needs of the decision makers of credit due to data limitations and increased data for those seeking funding. Hence, it is important to conduct a study designed to explain the concept of credit risk and foundations and standards of management, as well as factors affecting the decision to grant credit, where the increasing importance of the subject at the present time in the pose risk management effective and important tool for the reduction of losses that can be borne by the banks, The importance of research stems from the attempt to develop an integrated framework that will help private banks operating in Iraq to develop credit risk management systems.

2.3. Research Goals

The objectives of the research are as follows:

- 1) Developing the methodology of credit risk management in private banks operating in Iraq according to modern banking risk management.
- 2) Evaluate the credit risk management policies adopted by private banks op-

erating in Iraq, which aim to maintain the capital strength.

3) Evaluate the efficiency of information systems and analytical techniques that support credit risk management systems and processes in private banks operating in Iraq by assisting management in identifying and addressing credit risks.

4) Review the measures and procedures prepared by private banks operating in Iraq to develop their credit risk management.

2.4. Research Hypotheses

In order to develop solutions to the problem of research and achieve its objectives, the research was based on the formulation of the following hypotheses:

Ho1: There is no significant statistical and significant correlation between credit risk management and financial market indicators. A number of hypotheses are derived from this hypothesis:

Ho1.1: There is no statistically significant and significant correlation between credit risk management and earnings per share.

Ho1.2: There is no statistically significant and significant correlation between credit risk management and price/profit ratio.

Ho1.3: There is no statistically significant relationship between the credit risk management and the turnover rate.

Ho1.4: There is no statistically significant relationship between the credit risk management and the market value added.

Ho2: There is no statistically significant and significant impact of credit risk management in financial market indicators. A number of hypotheses are derived from this hypothesis:

Ho2.1: There is no statistically and morally significant effect of credit risk management on earnings per share.

Ho2.2: There is no statistically significant and significant impact of credit risk management in the price/profit ratio.

Ho2.3: There is no statistically significant and significant effect of credit risk management in the turnover of the stock.

Ho2.4: There is no statistically significant and significant impact of credit risk management in the market value added.

2.5. The Research Sample

The research sample included a number of banks listed in the Iraqi market for securities for the period from 2007 to 2016. The following is an explanation of the characteristics of the research sample.

Name of banks Sample of research and basic information: **Table 1** shows the names of banks Sample Research.

3. Conceptual Framework for Credit Risk Management

3.1. The Concept of Bank Credit

The concept of bank credit has been varied. The concept of bank credit is “a

Table 1. Name of banks sample of research.

The bank	Capital beginning	Capital up to 31/12/2016
National Bank of Iraq	400,000,000	250,000,000,000
Commercial Bank of Iraq	150,000,000	250,000,000,000
Iraqi Islamic Investment Bank	150,000,000	250,000,000,000
Ashur International Investment Bank	25,000,000,000	250,000,000,000
Iraqi Investment Bank	100,000,000	250,000,000,000
Credit Bank of Iraq	200,000,000	250,000,000,000
Middle East Investment Bank	400,000,000	250,000,000,000
Bank of Baghdad	100,000,000	250,000,000,000

Source: Prepared by the researcher based on reports and financial statements.

debt-based relationship based on trust arising from the exchange of goods or services or money immediately in return for a promise to pay a certain later allowance, and in a certain time goods, services or money, The pledge to pay in cash.” (Saunders & Marcia, 2003: p. 260).

Credit is the interest of the borrower who intends to repay it on the due date (Ansah, 2013: p. 16). (Wanjiku, 2015: p. 1) describes credit as the provision of resources, such as the granting of a loan from one party to another, where the second party does not immediately pay the first party, which generates the debt, and instead arranges either for payment or return of such resources or materials of equal value A later date.

In economics, the term credit refers to a unilateral promise to the other party for borrowed money or the goods or services it receives. Credit is defined as the entitlement to receive payments or the obligation to make payment on demand at a later date for the immediate carriage of the goods (Tarko, 2015: pp. 8-9).

Credit is one of many factors that can be used by the bank to influence the demand for its products, and companies can only benefit from credit if the profitability resulting from increased sales exceeds the added costs of receivables. Credit is defined as the process by which the acquisition of goods or services is permitted without immediate payment at the contractual agreement to pay later (Kagoyire & Shukla, 2016: p. 1).

According to the previous definitions, bank credit is the loans and cash and non-monetary facilities that are granted to individuals and public and private entities in return for providing adequate guarantees. The borrower undertakes to pay these funds and their interest, commissions and expenses due in one installment or installments on due dates.

3.2. The Concept of Credit Risk

Credit risk is not limited to a particular type of loan; it can all pose a risk to the bank but to varying degrees. It is not only about the loan process but also continues until the full amount of the agreed amount is completed (Al-Zubaidi,

2000: p. 210). Credit risk can be described as the risk of default of the borrower/counterparty, i.e., non-payment of a due amount to the bank. Credit risk includes all other parties and the reasons that may fail to meet their payment obligations (Westgaard & Wijst, 2001: p. 339).

Credit risk is the identification and analysis of risk types and causes prior to a variety of credit risk in order to measure and address credit risk which is the first step in credit risk management and focus on qualitative analysis of credit risk. Credit risk at banks is caused by two reasons: the inability of the borrower to repay loans and the unwillingness to repay loans (Song & Li, 2008: p. 50).

Credit risk refers to unforeseen events that result in asset losses or profit deductions compared to the expected profits or generate additional expenses to complete a specific transaction (Hull, 2010: p. 35).

3.3. Types of Credit Risk

(Khatywa, 2009: pp. 8-9) that there are three main types of credit risk, the risk of default, the risk of credit improvement, and the risk of credit spread, as shown below:

1) Risk of default: The risk that the issuer of the bonds or the debtor will not repay the debt in full. The default risk can be complete where no amount of the bonds or loans is repaid, or it may be partly so that part of Debt.

2) Risks of credit improvement: The risk of nationally recognized statistical organizations reducing their credit rating based on an assessment of the issuer's current ability to profit against its ability to repay its debt obligations when it becomes due.

3) Credit spread risk: The risk of price increases on a reference price of a debt liability. The risk reduction differs from the risk of credit spread in that it relates to a formal credit review determined by an independent rating agency, while the first is the reaction of the financial markets.

According to (Teka, 2012: p. 23), credit risk is divided into:

1) Concentration risk

Is the risk of any particular exposure or group of exposures with the possibility of producing losses that could put pressure on the Bank's main operations and may come as a single concentration or concentration of the industry.

2) Virtual credit risk

As the name suggests, is the risk associated with the possibility that the person who took the loan is unable to pay it again or will take more than 90 days from the due date to repay. It can affect the critical business of credit, such as loans, securities and derivatives.

3) International risks

Is the risk that arises from a situation where the country has frozen foreign exchange payments or has failed to meet its obligations. Credit risk management cannot be overstated in the banking sector. The financial crisis of 2008, whose remains remain today, is attributed to the failure to manage credit risk. Many banks around the world invested in individuals who were not worthy of credit.

Banks have failed to manage the risks associated with granting loans, mortgages and other products. As a result, there was a large deficit by customers.

3.4. Credit Risk Management

The objective of credit risk management practices is to identify maximum risks in order to adjust the rate of return of the bank by maintaining credit risk within acceptable limits (Basel Committee, 2000: p. 3). Credit management is needed to control the risks associated with credit sales. The purpose is to manage financial and political risks alike. (Edwards, 2004: p. 83) says in his book that everyone must understand that credit means trust and trust must be based on knowledge in order to have any real meaning and that combining, analyzing and making decisions based on that knowledge is the management of credit.

Credit risk management is one of the most important functions of any bank and is crucial because it provides guidance on how the bank deals with its exposure to asset risk (Fight, 2004: p. 61). Credit risk management is an integral part of banking and is done through a variety of exposures. Most banks fail due to poor credit risk management and credit risk management mainly focuses on avoiding losses and improving risk return (Meyer, 2005: p. 18).

Credit risk management aims to maximize the Bank's risk appetite by maintaining the level of credit risk within acceptable limits. And that banks' ability to manage credit risk in a profitable manner determines their ability to compete and survive. Thus, it can be seen that credit risk management plays an essential role in banking. (Casu & others, 2006: 282). As credit expansion has always been at the heart of banking operations, the focus of risk management at the bank is credit risk management and credit risk management involves decision making. Before making a credit decision and following up on credit commitments including all controls and reporting. The credit decision is based on financial statements and estimated assessments of market expectations, borrowers, management and shareholders. Follow-up is carried out through periodic review of bank commitments by customers. In addition, warning systems indicate a deterioration of the borrower's situation before default, whenever possible (Hosna et al., 2009: p. 17).

3.5. Objectives of Credit Risk Management

According to (Asha, 2013: p. 49), (Naresh & Rao, 2015: p. 91), credit risk management in general aims to achieve the following:

- 1) Develop an integrated framework to classify different types of loans and advances and identify the implications of credit quality and risk.
- 2) Developing analytical tools for credit risk assessment.
- 3) Review the exposure to risk and performance periodically.
- 4) Develop appropriate strategies at the institutional level to achieve the required levels, issue guidelines for strategic business units, provide target standards for recovery rates, risk exposure and others.

5) Develop appropriate mechanisms for monitoring and controlling risk.

3.6. The Credit Decision and the Factors Affecting It

The credit decision takes the form of refusal or conditional acceptance of loans and credit facilities provided by the bank's customers, in light of the credit elements governing the credit activity. Each credit decision requires a balance between the expected return and the risk and the potential cost of the credit required. The credit rating cycle starts with the credit-seeker's assessment of the customer when applying for credit facilities in principle, and to determine whether the credit status of the bank's credit policy is identical. After receiving preliminary information from the customer during the interview, which deals with the value of the facilities required, their purpose, the repayment period, and the guarantees that can be provided. The credit researcher shall be competent, courteous and courteous in conducting and concluding the interview successfully, winning the customer's trust, respect and satisfaction, even if the initial decision is inappropriate and does not comply with the established credit policy (Abu Kamal, 2007: p. 77).

(Tani, 2012: 72-73), (Bagchi, 2004: pp. 300-301) explained that there are a number of factors that influence the decision-making of a bank: in **Table 2**.

3.7. Credit Risk Management Indicators

1) Capital Adequacy Ratio (CAR)

It is a measure of the amount of the Bank's capital expressed as a percentage of the weighted exposure to risk and consists of the most reliable types of capital, the most important of which are shareholder rights. In theory, banks with good capital adequacy ratio enjoy good profitability. A bank with strong capital adequacy is also able to absorb potential loan losses, thus avoiding insolvency and

Table 2. Factors affecting credit decision making.

General rules in granting credit The Five CS	Factors related to the bank	factors related to the quality of the credit facility provided
-Customer's personality	-Objectives of the bank	-Purpose of credit
-Financial and administrative capacity of the customer	-The financial and human resources of the bank	-Credit period
-The customer's self-financing ability i.e. capital	-The concentration of the bank in the market	-Loan amount
-Guarantees provided by the customer	-Liquidity considerations	-Loan repayment method
-Economic conditions are factors related to the bank	-Bank strategy (Conventional, offensive, credit crunch)	-Source of payment
	-Credit and banking policy of the bank (under the general credit policy)	-The appropriateness of this credit to the credit policy
		-The balance between the return and the cost of credit
		-Risks
		-Factors related to the bank

Source: Naima (2009), Banking Risk Management (Comparative Study between Traditional and Islamic Banks), Memorandum presented in the requirements of the Master Degree in Economic Sciences, Faculty of Economic, Commercial and Management Sciences, University of Mohamed Khader, Republic of Algeria, 2009.

default (Bhattarai, 2016: p. 49). The capital adequacy ratio has been developed to ensure that banks absorb a reasonable level of losses as a result of operational losses and determine the Bank's ability to withstand losses (Mulugeta, 2016: pp. 17-18). Total equity divided by total assets:

(Tsumake, 2016: p. 35), (van Benthem, 2017: p. 33), (Ajayi, & Ajayi, 2017: p. 52)

$$\text{Capital adequacy ratio (CAR)} = \frac{\text{total equity}}{\text{total assets}} \times 100\% \quad (2-1)$$

2) Non-performing loans ratio (NPLR)

The ratio of non-performing loans is the main indicator of credit risk in commercial banks. The ratio of non-performing loans reflects the credit quality of the bank and is an indicator of credit risk management as it determines the ratio of loan losses to total loans (Bhattarai, 2016: p. 50). The ratio of non-performing loans is calculated as follows: (Tsumake, 2016: p. 35), (van Benthem, 2017: p. 33), (Ajayi, & Ajayi, 2017: p. 52).

$$\text{Non-performing loans ratio (NPLR)} = \frac{\text{non-performing loans}}{\text{Gross loans \& advances}} \times 100\% \quad (2-2)$$

3) Loan to Deposits Ratio (LTDR)

Loan to deposit ratio is a commonly used statistic to assess the bank's liquidity by dividing the bank's total loans from its total deposits, which is expressed as a percentage. If the ratio is too high, it means that the bank may not have enough liquidity to cover any unexpected funding requirements. Conversely, if the ratio is too low, the bank may not be earning as much as it can be (Yves, 2016: p. 12). The ratio of loans to deposits is calculated as follows: (Rengasamy, 2014: p. 4), (Zewdu, 2016: p. 23), (Bergendorff & Osback, 2017: p. 21).

$$(\text{LTDR}) = \frac{\text{total loans}}{\text{total deposits}} \times 100\% \quad (2-3)$$

4) Debt to Equity Ratio (DTER)

The Debt to Equity Ratio (DTER) is one of the solvency ratios used to assess debt to equity by comparing the entire debt, including liabilities traded with total equity, and is defined as a measure used in the analysis of financial statements to show the amount of collateral available to the creditor (Kamar, 2017: p. 68).

The ratio of debt to equity is a financial ratio indicating the relative proportion of shareholders' equity and the debt used to finance the assets of the Organization. The greater the debt used by the Organization in respect of fixed assets, the greater its ability to meet its contractual payments (Ulzanah, & Murtaqi, 2015: p. 20). The ratio of debt to equity is calculated in the following equation: (Bjorkholm & Johansson, 2015: p. 27), (Abdul Rahman, 2017: p. 88).

$$(\text{DTER}) = \frac{\text{total debt}}{\text{total equity}} \quad (2-4)$$

5) Total Debt Ratio (TDR)

Total debt ratio measures the percentage of funds provided by creditors,

which is the ratio of all assets financed by debt (Tugas, CISA, CPA, 2012: p. 175). The higher this percentage, the greater the amount of other people's money used to generate profits (Lawrence & Chad, 2012: p. 77). The ratio of total debt is calculated as shown in the following equation: (Al-Shubiri, 2012: p. 23), (Ross et al., 2016: p. 149).

$$(\text{TDR}) = \frac{\text{total assets} - \text{total equity}}{\text{total saets}} \quad (2-5)$$

6) Return on Risk-Adjusted Capital (RAROC)

Banks are constantly seeking to improve their performance by exploiting their internal strengths and avoiding threats to them. Risk is one of the threats it faces. In order to address it, banks allocate an undetermined proportion of capital to absorb it by raising capital with the risk of generating a risk-adjusted return on risk-adjusted capital (RAROC) (Smithson & Hayt, 2001: p. 70). (RAROC) can be calculated by dividing net income on economic capital as shown in the equation below: (Culp, 2000: p. 53), (Gestel & Basens, 2009: p. 342). (Everett, 2015: p. 6) defines economic capital as the money held by the bank to meet unforeseen losses at the 99.9 confidence level, which corresponds to 2.33 of the Sigma ratio.

$$(\text{RAROC}) = \frac{\text{net income}}{\text{economic capital}} \quad (2-6)$$

3.8. Financial Market Indicators

1) Earnings per share (EPS)

EPS is part of the organization's earnings, after deducting taxes and preferred dividends that are distributed to each share of ordinary shares. This figure can be calculated simply by dividing the net income earned in a given reporting period (usually quarterly or annually) on the total number of shares outstanding during the same period. (Islam et al., 2014: p. 97). As shown in the following equation: (Lawrence & Chad, 2012: p. 81), (Ross et al., 2013: p. 65), (Kumar, 2017: p. 116).

$$(\text{EPS}) = \frac{\text{net income}}{\text{shares outstanding}} \quad (2-7)$$

(EPS) is a measure of management efficiency as well as firm performance, and EPS can be explained by the fact that the organization will provide a great opportunity for investors' income. EPS is an analytical tool used to calculate the profitability of the organization (Talamati, & Pangemanan, 2015: p. 1087).

2) Price/Profit Ratio (P/E)

The P/E ratio is a function of expected profit growth and expected rate of return as it is positively correlated with expected growth and negatively correlated with expected rate of return (Alexandra, 2014: p. 68). The price-to-profit ratio is usually used by investors and market analysts in banks or intermediary organizations to compare the potential profitability of different organizations or industries (Sezgin, 2010: p. 15).

The P/E ratio is usually used to assess shareholders' value of the stock. This ratio measures the amount that investors would like to pay for each dollar of the

organization's profits. This level indicates the degree of confidence investors have in the future performance of the organization, The higher the price/profit ratio, the greater the confidence of investors (Lawrence & Chad, 2012: p. 82). It is calculated by dividing the market value per share by earnings per share as shown in the following equation: (Ross et al., 2013: p. 65), (Sareewiwatthana, 2014: p. 118), (Kumar, 2017: p. 116)

$$\text{P/E ratio} = \frac{\text{price per share}}{(\text{EPS})} \quad (2-8)$$

3) Stock Turnover (STR)

The rate of turnover of the stock measures the turnout rate of that stock in the financial market represented by the volume of shares traded in the financial transactions occurring on that stock (Al-Lozi, 2013: p. 41). The share turnover is calculated by dividing the number of shares traded by the number of shares issued as shown in the following equation: (Hasnawi, 2007: p. 220).

$$\text{stock turnover (STR)} = \frac{\text{number of shares traded}}{\text{number of shares issued}} \times \%100 \quad (2-9)$$

4) Market Value Added (MVA)

The market value added (MVA) expresses the difference between the stock market valuation of a listed bank and the total adjusted book value of the debt and the equity invested in the bank, which is equivalent to the present value of the future economic value added (EVA) expected in the future. Create a great fortune for shareholders (Wibowo & Berasategui, 2008: p. 62). The wealth of shareholders is maximized by maximizing the difference between the market value of the bank's stock and the amount of capital provided by the shareholders. This difference is called MVA (Shanti & Ottemoesoe, 2009: p. 2).

If the bank succeeds in creating the added market value or not, it depends on the rate of return, and if the bank's rate of return exceeds the cost of capital, the bank will sell in the stock market a premium compared to the original capital. On the other hand, banks whose rate of return is less than the cost of capital sell at a discount compared to the original capital invested in the bank, and if the bank has a positive or negative added market value depends on the rate of return compared to the cost of capital (Almaududi, 2016: p. 108). Market value added is the way that measures the bank's ability to create wealth/value added to investors. In other words, the value added indicator shows the difference between what financiers invest and what they can earn.

- Calculate the market value added

Method 1: According to this method, the market value added is calculated by the difference between the market value of the equity and the book value of the equity (Poorzamani & Otari, 2015: p. 189), (Almaududi, 2016: p. 108), (Dhani & Hersugondo, 2016: p. 1548).

$$(\text{MVA}) = \text{market value of the equity} - \text{the book value of the equity} \quad (2-10)$$

Method 2: Market Value Added (MVA) is calculated through its relationship with Economic Value Added (EVA) (Khan et al., 2012: p. 117), (Aloy Niresh & Alfred, 2014: p. 127).

$$(MVA) = PV \text{ Economic Value Added} \quad (2-11)$$

By increasing the EVA, banks will increase (MVA) by increasing the difference between the value of the bank and the capital invested in it.

Method 3: Market value added in this method is calculated by the difference between the total market value of the bank and the invested capital (Srinivasan et al., 2012: p. 3), (Sayed & Sayed, 2015: p. 21), (Nakhaei, 2016: p. 439).

$$(MVA) = \text{total market value of the bank} - \text{invested capital} \quad (2-12)$$

4. Analytical Study

4.1. Statistical Analysis of Correlation between Study Variables

This relates to the analysis of the correlation between the independent variable (credit risk management) and the adopted variable (financial market indicators) through the Pearson correlation coefficient, based on the data in the financial statements and the annual reports of the sample banks to determine the correlation coefficient of each independent variable with each variable Of the dependent variables and test the hypotheses and all the sample items during the research period.

First: A descriptive analysis of the independent variable (credit risk management)

1) Capital adequacy ratio (X1)

Table 3 shows the ratio of banks to the study sample The average of the banks of the study sample was 40.264%, while Ashur International Investment Bank

Table 3. The risk of the other banks sample study according to this indicator.

Indicator/Bank		X1	X2	X3	X4	X5	X6	Y1	Y2	Y3	Y4
National Bank	M	47.812	6.549	47.293	1.15	0.522	0.575	0.072	21.562	7.184	-51,274,756.1
	SD	7.170	3.009	15.005	0.401	0.072	0.516	0.055	17.285	7.051	56,842,820.2
Commercial Bank	M	51.047	30.187	7.539	1.093	0.49	0.363	0.079	16.615	9.745	-52,663,829.3
	SD	12.247	9.423	6.592	0.572	0.122	0.219	0.059	7.956	5.381	68,093,753.3
Islamic Bank of Iraq	M	53.423	11.462	45.737	0.917	0.466	1.546	0.059	194.67	32.638	-37,950,312.5
	SD	7.708	13.32	26.687	0.321	0.077	2.155	0.065	364.43	24.296	51,832,681.6
Ashur International Bank	M	54.197	19.766	39.501	0.927	0.458	17.66	0.134	7.474	7.549	-48,687,802.5
	SD	10.593	29.615	37.745	0.422	0.106	30.847	0.067	3.437	6.772	63,981,338.6
Iraqi Investment Bank	M	38.236	18.599	50.625	1.723	0.614	0.882	0.137	10.559	19.275	-39,214,880.7
	SD	8.351	30.061	24.657	0.538	0.086	0.636	0.074	7.258	14.734	47,398,357.1
Credit Bank of Iraq	M	35.58	21.665	25.804	2.096	0.644	38.10	0.157	19.627	2.675	62,615,974.8
	SD	11.632	11.676	69.273	0.915	0.116	17.745	0.122	9.849	2.329	117,749,291
Middle East Bank	M	24.879	5.541	29.677	4.136	0.751	0.662	0.189	11.983	27.054	-24,916,869
	SD	12.405	7.977	15.799	2.380	0.124	0.311	0.146	8.528	19.492	90,921,864.8
Bank of Baghdad	M	16.936	18.218	17.99	5.09	0.831	0.635	0.193	12.127	13.289	69,030,719.5
	SD	3.083	5.443	5.096	1.048	0.031	0.239	0.104	4.094	9.088	76,724,782.5
General average	M	40.264	16.498	33.02	2.142	0.597	7.554	0.122	36.827	14.56	-15,382,719.5
	SD	9.149	13.816	25.107	0.825	0.092	6.584	0.087	52.854	11.143	71,693,111.2

had an average capital adequacy ratio (54.197%), which is ranked (1), and the standard deviation was 10.593 (16.936%), which is ranked (8) and the standard deviation was (3.083). This indicates that the credit risk in this bank was higher than the risk of the other bank's sample of the study according to this indicator.

2) The ratio of non-performing loans (X2)

Table 3 shows the ratio of banks to the sample of the study. The table indicates that the general average of banks is 16.498% of the study sample. The Middle East Bank of Iraq has an average of 5.541%, which is lower than the average of the bank's sample of the study, and the standard deviation reached (7.977). The last rank came the Commercial Bank of Iraq (30.187%), which takes the order (8), the standard deviation reached (9.423), indicating that the credit risk is higher than the risk the study of the debt this indicator.

3) The ratio of loans to deposits (X3)

Table 3 shows the ratio of banks to the sample of the study. The table indicates that the average ratio of loans to deposits reached 33.02%, while the ratio of loans to deposits in Commercial Bank of Iraq (7539%) in order (1), and the standard deviation (6592). This indicates the low efficiency of the bank in employment as the credit risk is less than the risk of the other bank's sample of the study according to this indicator. While the average ratio of loans to deposits in the investment bank of Iraq is adjusted to (50.625%) which is in the ranking (8) and the standard deviation (24.657), which explains the high efficiency of the bank in employment, which means that the credit risk in this bank is higher than the risk The rest of the banks sample the study according to this indicator.

4) The ratio of debt to equity (X4)

Table 3 shows the ratio of banks to the sample of the study, where the average of banks is the study sample (2142 times). In the Iraqi Islamic Bank, the ratio of debt to equity), which is in the order (1), while the standard deviation (0.321). This explains that the credit risk was lower than the risk of the other bank's sample of the study according to this indicator. As for Bank Al-Ahli Bank, the ratio of debt to equity was 5.09 times, which is ranked 8, and the standard deviation is 1.048, which confirms that the credit risk in this bank is higher than the risk of the other banks. Indicator.

5) The ratio total debt (X5)

Table 3 shows this ratio for banks study sample overall average of the banks of the study sample of (0.597 times), either Ashur International Bank for Investment amounted to an average ratio of total debt in (0.458 times) which occupies the order (1), and reached the standard deviation (0.106), and this shows that the credit risk in the bank less than the risk of the rest of the banks sample study according to this Almahroan average ratio of total debt in the Bank of Baghdad, Al Ahli of (0.831 times) which takes the sequence (8) It is larger than the average of the sample banks of the study, and reached a standard deviation (0.031) which indicates that the credit risk Of this bank it was higher than the risk of the rest of the banks according to the study sample on this indicator.

Second: Descriptive Analysis of Financial Market Indicators Table 3 shows the data on the financial market indicators of the bank's sample of the study and through the following:

A) Yield per share (Y1): Table 3 shows the percentage of banks in the sample of the study. The general average of the banks is the sample of the study (0.122 d). The average earnings per share in the Bank of Baghdad Al Ahli (0.193) (0.104). This confirms that the efficiency of this bank is higher than the rest of the sample banks. The average earnings per share in the Iraqi Islamic Bank (0.059 d) is serialized. The standard deviation of 0.065) This indicates that the efficiency in this bank is less than the efficiency of the other bank's sample study according to this indicator.

B) The ratio of price to profitability (Y2): Table 3 shows the ratio of price to profitability or the so-called multiplier of banks sample study, with a general average of banks study sample (36.827 times) (194.67 times) sequentially (1) while the standard deviation (364.43) and this confirms that the performance of this bank is higher than the performance of the other banks sample study according to this indicator. The average price-earnings ratio in the Assyria International Investment Bank (7.474 times) which occupations the sequence (8) The standard deviation reached (3.437) This explains that the performance of the bank is less than the performance of the rest of the Banks sample the study according to this indicator.

C) The rate of turnover of the stock (Y10): Table 3 reflects to the ratio of banks sample study, with a general average of banks study sample of (14.56%), and the average rate of turnover of the share in the Iraqi Islamic Bank is 32.638% (24.296). This means that the bank is characterized by high efficiency and confidence of investors compared to other banks sample study according to this indicator, while the average rate of turnover of the share in the credit bank of Iraq (2.675% (8) and the standard deviation (2.329). This means that the efficiency of the bank is less than that of the bank The banks according to the study sample on this indicator.

D) Market Added Value (Y11): Table 3 shows the ratio of banks to the sample of the study. The average of the banks was the study sample of (15,382,719.5). The average market value added in the Bank of Baghdad (69,030,719.5) 1) while the standard deviation (76,724,782.5). This indicates that the efficiency in this bank is higher than the efficiency of the other bank's sample study according to this indicator. The Commercial Bank of Iraq has an average market value of (52,663,829.3), which occupations the sequence (8) lower than the average of the bank's sample study, and reached the standard deviation (68,093,753.3). This indicates that the efficiency in this bank is less than that of the other banks. According to this indicator.

1) Relationship between credit risk management and earnings per share

It is clear from **Table 4** that the ratio is inverse with a statistical significance and a significant level (1%) between the first indicator of credit risk management, the capital adequacy ratio (X1) and the profitability of the share (Y1) (0.628**).

Table 4. Correlations between independent and approved variable indicators.

	X1	X2	X3	X4	X5	X6
Y1	-0.628**	0.050	-0.308**	0.608**	0.627**	0.270**
Y2	0.191*	0.149	-0.014	-0.141	-0.191*	-0.075
Y3	-0.094	-0.193*	0.140	0.090	0.093	-0.233*
Y4	-0.633**	-0.046	-0.338**	0.544**	0.634**	0.300**

Source: Preparation of the researcher based on the program.

The relationship between the second credit risk management indicator and the ratio of non-performing loans (X2) and earnings per share (Y1) is positive, weak and insignificant, as shown by the Pearson coefficient of (0.05).

The correlation between the third indicator of credit risk management and the ratio of loans to deposits (X3) and earnings per share (Y1) are statistically significant and at a significant level (1%), which is indicated by Pearson correlation factor (-0.308**).

The ratio of debt to equity (X4) and earnings per share (Y1) is explained by the correlation coefficient Pearson (0.608**).

While the relationship between the fifth indicator of the credit risk management ratio of the total debt (X5) and the profitability of the share (Y1) is positive with a statistical significance of medium and at a significant level (1%), as reflected by Pearson correlation factor (0.627**).

The correlation between the risk-adjusted capital (X6) and the profitability of the share (Y8) is shown to be significant (1%). This is confirmed by the Pearson coefficient of (0.270**).

In this way, (H01.1), which states that there is no significant statistical correlation between the credit risk management indicators and the first indicator of the financial market indices, is rejected (Y1) and the alternative hypothesis is confirmed by a related relationship (1%), the NPL indicator (X2) confirms this hypothesis.

2) The correlation between credit risk management and P/E

Table 4 shows that the relationship between the first indicator of credit risk management (X1) and the price-to-profit ratio (Y2) is a positive relationship of statistical significance at a significant level (5%*).

The correlation between credit default ratio (X2) and price-earnings ratio (Y2) is explained by the correlation coefficient Pearson (0.149).

While the relationship between the third indicator of credit risk management ratio of loans to deposits ratio (X3) and the price-earnings ratio (Y2) are negative, weak and insignificant, as reflected by Pearson correlation coefficient (-0.014).

The correlation between the debt to equity ratio (X4) and the price-earnings ratio (Y2) is illustrated by the Pearson correlation coefficient (-0.141).

The relationship between the fifth indicator of credit risk management ratio of the total debt (X5) and the price-earnings ratio (Y2) is statistically significant

and at a significant level (5%), which is indicated by Pearson correlation factor (-0.191^*).

The correlation between the risk weighted capital (X6) and the price-earnings ratio (Y2) is confirmed by the Pearson correlation coefficient (-0.075).

On the basis of this, the second sub-hypothesis arising from the first hypothesis (H01.2), which states that there is no statistically significant and significant correlation between the credit risk management indicators and the second indicator of the financial market indices, confirms the price-earnings ratio (Y2) Money (X1) and total debt ratio (X5) reject the null hypothesis and the alternative hypothesis is confirmed by a statistically significant correlation relationship (5%).

3) The correlation between the credit risk management and the share turnover rate

Table 4 shows the inverse, weak and insignificant relationship between the first indicator of credit risk management (X1) and the share turnover (Y3). This is indicated by the Pearson correlation coefficient (-0.094).

There is also a statistically significant and significant (5%) correlation between the second credit risk management indicator (X2) and the Y3 (Y3) ratio, as explained by the Pearson correlation coefficient (-0.193^*).

The correlation between the third indicator of credit risk management and the ratio of loans to deposits (X3) and the stock turnover (Y3) are positive, weak and insignificant, as shown by Pearson correlation coefficient (0.140).

The relationship between the fourth indicator of credit risk management ratio (X4) and the share turnover (Y3) is a positive, weak and insignificant relationship, as confirmed by the Pearson coefficient of (0.090).

The ratio between the total debt (X5) and the (Y3), which is reflected in Pearson correlation coefficient (0.093), is also positive, weak and insignificant.

The correlation between the sixth risk management index and the return on equity (X6) and the (Y3) share are statistically significant and significant (5%), as shown by the Pearson correlation coefficient (-0.233^*).

This confirms the third hypothesis, which stems from the first main assumption (H01.3), which states that there is no significant and significant correlation between the credit risk management indicators and the third indicator of the stock market (Y3), only the ratio of non-performing loans (X2) The return on risk capital (X6) rejects the null hypothesis and the alternative hypothesis is confirmed by the existence of the correlation relationship with statistical significance and significance (5%).

4) Relationship between Credit Risk Management and Market Value Added

Table 4 shows the relationship between the first indicator of credit risk management and the capital adequacy ratio (X1) and the market value added (Y4) as an inverse relationship with a mean statistical significance and a significant level (1%). (-0.633^{**}).

The correlation between the non-performing loan ratio (X2) and the market value added (Y4) is reflected in the second risk management index. This is reflected in the Pearson correlation coefficient (-0.046).

The correlation between the third indicator of the credit risk management ratio (X3) and the market value added (Y4) are statistically significant and at a significant level (1%), as indicated by the Pearson coefficient of (-0.338^{**}).

The ratio of the debt to equity ratio (X4) and the market value added (Y4) by the Pearson correlation coefficient is (0.544^{**}).

The correlation between the total debt (X5) and the market value added (Y4) is explained by the Pearson coefficient of (0.634^{**}).

The relationship between the sixth risk management index and the return on the risk weighted capital (X6) and the market value added (Y4) are statistically significant and at a significant level (1%). This is confirmed by the Pearson coefficient of (0.300^{**}).

On the basis of this, the fourth sub-hypothesis arising from the first hypothesis (H01), which states that there is no statistically significant and significant correlation between the credit risk management indicators and the fourth indicator of market value indices (Y4), is rejected. (1%), the NPL indicator (X2) confirms this hypothesis.

Thus, the first major hypothesis (H01), which states that there is no significant statistical and moral correlation between the credit risk management indicators and the financial market indicators, is rejected and the alternative hypothesis is accepted.

4.2. The Effect of Indicators of the Independent Variable in the Indicators of the Variable Adopted

In this section, we analyze and discuss the impact relationships of the independent variable. Credit risk management (capital adequacy ratio, NPL ratio, loan to deposit ratio, debt to equity ratio, ratio of total debt and return on risk adjusted capital) (Regression Liner) to determine the effect of each independent variable with a dependent variable, as well as the application of the multiple regression model to determine the effect of the independent variables by a dependent variable to measure the (R2) parameter and test their hypotheses by finding the value of F Of (T) Mahsuptan and Almstkhrtan agenda (ANOVA), as well as the tendency to determine the value of the regression model (B) and using statistical analysis software (SPSS V.23).

1) The effect of indicators of the independent variable (credit risk management) in earnings per share

Table 5 shows the effect of the independent variable (fiduciary risk) indicators in the financial market indices which are considered to be one of the banking objectives of Y1. The value of R (0.692) (R2). This indicates that the ratio of independent variable indicators in the dependent variable to earnings per share is (48%). The rest of the effect is caused by other factors not known. While the value of (F) calculated and extracted from the table (ANOVA) was (12.420^{**})

Table 5. Relation of the effect of indicators of the independent variable in the price-earnings ratio.

(Y1)					
R	R ²	F	T	A	B
X	0.692	0.479	12.420**	1.020	4.643

Source: Prepared by the researcher depending on the program (SPSS V.23).

This means the significance of the relationship between the variables and a level of 1%. The value of (T) was (1.020), which indicates the significance of some variables of the model. A value of (4.643) shows the value of the dependent variable (Y1) when the value of the independent variable is zero. The value of (B) refers to the coefficients of the variables of the independent variable shown at different values, as shown in **Table 5**.

In this way, the first hypothetical hypothesis arising from the second hypothesis (Ho2) is rejected, which states that there is no significant statistical and moral effect on the management of credit risk in earnings per share and accepts the alternative hypothesis.

2) Indicators of the independent variable (credit risk management) are reflected in the price-earnings ratio

Table 6 shows the effect of the independent variable (fiduciary risk) indicators in the second indicator of financial market indices, the price-earnings ratio (Y2), by the value of R (0.248), And the value of the coefficient of determination (R2) was (0.062). This means that the ratio of the independent variable's indicators in the variable to the price-to-profit ratio is 6%. The rest of the effect is caused by other factors not known. The value of (F) calculated and extracted from the table (ANOVA) was (0.887) This indicates that the relationship is not significant between the variables. The value of (T) has reached (-0.212) indicating that the variables of the model are not significant. While the value of (A) is (1763.210). It interprets the value of the dependent variable (Y2) when the value of the independent variable is zero. The value of (B) refers to the coefficients of the variables of the independent variable shown in different values as in **Table 6**.

On the basis of this, the second sub-hypothesis arising from the second hypothesis (Ho2) is accepted, which states that there is no significant statistical and moral impact of credit risk management in the price-earnings ratio.

3) The effect of indicators of the independent variable (credit risk management) in the turnover of the stock

Table 7 shows the effect of indicators of the independent variable (credit risk management) in the third indicator of the financial market indices, which is the rate of turnover of the stock (Y3). The value of (R) was (0.324) The value of the coefficient of determination (R2) was 0.105, which explains that the percentage of independent variable indicators in the approved variable is 10%. The rest of the effect is caused by other factors not known. The value of (F) calculated and extracted from the table (ANOVA) has reached (1.586) This means that the relationship is not significant between the variables. While the value of (T) has

Table 6. Relation of the effect of indicators of the independent variable in the price-earnings ratio.

(Y2)					
R	R ²	F	T	A	B
X	0.248	0.062	0.887	-0.212	-1763.210

Source: Prepared by the researcher depending on the program (SPSS V.23).

Table 7. Relation of the effect of indicators of the independent variable to the turnover of the stock.

(Y3)					
R	R ²	F	T	A	B
X	0.324	0.105	1.586	0.102	96.893

Source: Prepared by the researcher depending on the program (SPSS V.23).

reached (0.102) which indicates the insignificant variables of the model. A value of 96.893 indicates the value of the dependent variable (Y3) when the value of the independent variable is zero. The value of (B) refers to the coefficients of the indicators of the independent variable shown at different values, as shown in **Table 7**.

In this way, the third hypothetical hypothesis derived from the second hypothesis (Ho2) is accepted, which states that there is no statistically and morally significant effect of the management of credit risk in the rate of turnover.

4) Effect of indicators of the independent variable (credit risk management) in the market value added

Table 8 shows the effect of indicators of the independent variable (fiduciary risk management) in the fourth indicator of the financial market indicators of market value added (Y4) and the value of R (0.681) which explains the correlation of independent variable indicators with this variable, The value of the (R2) factor was (0.464), which means that the percentage of independent variables in the dependent variable is 46%. The rest of the effect is caused by other factors not known. The value of (F) calculated and extracted from the table (ANOVA) has reached (11.684**) and this indicates the significance of the relationship between variables and a level of 1%. The value of (T) was (-0.752) which means the significance of some variables of the model. While the value of (A) was (-2,966,469,432) and shows the value of the dependent variable (Y4) when the value of the independent variable is zero. The value of (B) refers to the coefficients of the variables of the independent variable shown in different values and the phenomenon in **Table 8**.

Thus, the fourth hypothetical hypothesis of Ho2, which states that there is no statistically significant and significant effect of credit risk management in the market value added, is rejected and the alternative hypothesis is confirmed.

Table 8. Relation of the effect of indicators of the independent variable to the market value added.

(Y4)					
R	R ²	F	T	A	B
X	0.681	0.464	11.684**	-0.752	-2,966,469,432

Source: Prepared by the researcher depending on the program (SPSS V.23).

5. Conclusion

1) The theoretical and practical review shows that credit risk decisions are influenced by a combination of personal, rational and institutional factors.

2) The study showed the analysis of some important factors in the process of credit risk management and the identification of indicators that show the objectives in banks.

3) Review the literature on identifying the basic information for credit risk management in banking organizations.

4) Credit risk assessment in banks Sample of the study through a set of indicators to determine the level of risk for each bank during the study period.

5) The results showed weak banking awareness and the absence of a real credit culture that increases trust and commitment between the credit parties and does not overshadow the granting of bad credit.

6) The analysis shows the impact of the credit policy on the quality of credit granting decisions, as it is a tool to be guided by credit granting officials.

7) The correlation between independent variables and dependent variables was tested to determine the level of correlation between these variables.

8) The regression analysis series of relationships shows that sound credit risk management reinforces the Bank's strategies in achieving objectives.

9) By demonstrating the relationships between variables we conclude that the best management of credit risk gives the best ability to achieve the objectives of banks, because decisions taken by chance open gaps in the practices of credit risk management.

10) The credit management activities play a crucial role in maintaining the bank's continuity and survival and preserving its assets. This is the most important issue for managers because it affects the bank's position regarding financial losses due to the customer's failure to pay.

11) The results revealed the change and volatility of the credit risk management indicators of the sample during the study period. This reflects the instability of the political, security and economic conditions as well as the internal conditions of the bank as the efficiency of credit risk management in the bank.

12) The results revealed the change and volatility of indicators of the financial market indicators of the sample during the study period due to the political, security and economic conditions as well as the internal situation of the bank as the efficiency of credit risk management in the bank.

13) The null hypothesis is rejected and the alternative hypothesis which

proves the existence of the effect is rejected.

6. Recommendations

- 1) The importance of the management of banks to learn about modern literature, studies and research that deal with principles, concepts and mechanisms of measuring credit risk.
- 2) Banks should follow the modern and scientific methods to face risks through the type of investments that lead to risk reduction.
- 3) To develop a comprehensive program for reforming the banking system in line with the environmental changes in all its fields, including the emphasis on credit risk management according to these variables.
- 4) Taking advantage of the regression relationships in the time series during the study period, to predict the level of credit risk and to take the necessary action to confront them.
- 5) Credit risk managers should pay attention to terms and criteria for granting credit and evaluate the parties that banks wish to grant credit according to these criteria to achieve satisfactory performance of loan management.
- 6) Develop a general policy framework that guides all credit officers when making credit decisions.
- 7) Focus on providing more training opportunities for credit risk managers to increase their knowledge, expertise and decisions in deciding to grant credit on the right basis.
- 8) Credit risk managers should make more efforts to manage credit risk, especially with respect to granting loans, which means relying on more accurate information regarding repayment ability to improve decision accuracy.
- 9) The need to raise the level of banking awareness and improve the culture of credit among employees in the management of credit in banks.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

- Abdul Rahman, A. A. A. (2017). The Relationship between Solvency Ratios and Profitability Ratios: Analytical Study in Food Industrial Companies Listed in Amman Bursa. *International Journal of Economics and Financial Issues*, 7.
- Abu Kamal, M. A. (2007). *Modern Credit Risk Management in Banks According to Basel II International Standards*. Master of Business Administration, Gaza: Islamic University.
- Ajayi, L. B., & Ajayi, F. I. (2017). Effects of Credit Risk Management on Performance of Deposit Money Banks in Nigeria. *International Journal of Research in Management & Business Studies*, 4, 50-55.
- Alexandra, W.-T. (2014). The P/E Ratio and Profitability. *Journal of Business & Economics Research*, 12.

- Al-Lozi, K. M. (2013). *The Effect of Profit Management Practice on Stock Prices—A Test Study on Industrial Companies Listed on the Amman Stock Exchange*. Master of Accounting, Middle East University.
- Almaududi, S. (2016). Eva (Economic Value Added) Dan Mva (Market Value Added) Serta Pengaruhnya Terhadap Nilai Perusahaan. *Jurnal Ilmiah Universitas Batanghari Jambi*, 16, 102-114.
- Aloy Niresh, J., & Alfred, M. (2014). The Association between Economic Value Added, Market Value Added and Leverage. *International Journal of Business and Management*, 9.
- Al-Shubiri, F. N. (2012). Debt Ratio Analysis and Firm Investment: Evidence from Jordan. *International Journal of Economics and Financial Issues*, 2, 21-26.
- Al-Zubaidi, H. M. (2000). *Banking Management Strategy for Filling Deposits and Provision of Credit*. Amman: Al-Warraaq Foundation.
- Ansah, A. Y. (2013). *Comparative Analysis of Statistical Models in Credit Assessment*. Thesis, Legon: The School of Research and Graduate Studies of the University of Ghana.
- Asha, S. (2013). Credit Management in Indian Commercial Banks. *International Journal of Marketing, Financial Services & Management Research*, 2, 47-51.
- Bagchi, S. K. (2004). *Credit Risk Management*. Mumbai: TAICO Publishing House.
- Basel Committee (2000). *Principles for Management of Credit Risk*.
- Bergendorff, I., & Osback, M. (2017). *Banking Soundness in Europe—The Impact of the Capital Requirements Regulation*. Master Thesis.
- Bhattarai, Y. R. (2016). *Effect of Credit Risk on the Performance of Nepalese Commercial Banks*. Kirtipur: Tribhuvan University.
- Bjorkholm, J., & Johansson, V. (2015). *Debt versus Equity—In a Low Interest Rate Environment*. Master Thesis, Växjö: Linnaeus University.
- Culp, C. L. (2000). RAROC Revisited. *Journal of Lending & Credit Risk Management*.
- Dhani, R., & Hersugondo, H. (2016). Does Economic Value Added Influence the Shareholder Value in Indonesia? *International Journal of Applied Business and Economic Research*, 14, 1547-1560.
- Edwards, B. (2004). *Credit Management Handbook*. Hants: Gower Publishing Limited.
- Everett, P. (2015). *Using Economic Capital to Manage a Bank and beyond*. The Actuaries Institute.
- Fight, A. (2004). *Understanding International Banking Risk*. Chichester: Wiley.
<https://doi.org/10.1002/9781118673294>
- Gestel, T. V., & Baesens, B. (2009). *Credit Risk Management Basic Concepts*. New York: Oxford University Press Inc.
- Hasnawi, S. S. R. (2007). Determinants of the Rate of Return on Investment in Shares of Companies Participating in the Iraqi Market for Securities. *Journal of the Axis of Financial and Banking Sciences Qadisiyah for Administrative and Economic Sciences*, 9.
- Hosna, A., Manzura, B., & Sun, J. (2009). *Credit Risk Management and Profitability in Commercial Banks in Sweden*. Master of Science in Accounting, Graduate School.
- Hull, J. (2010). *Risk Management and Financial Institutions* (2nd ed.). Boston: Pearson Education.
- Islam, Md. R., Khan, T. R., Choudhury, T. T., & Adnan, A. M. (2014). How Earning per Share (EPS) Affects on Share Price and Firm Value. *European Journal of Business and Management*, 6, 97-108.

- Kagoyire, A., & Shukla, J. (2016). Effect of Credit Management on Performance of Commercial Banks in Rwanda (A Case Study of Equity Bank Rwanda LTD). *International Journal of Business and Management Review*, 4, 1-12.
- Kamar, K. (2017). Analysis of the Effect of Return on Equity (Roe) and Debt to Equity Ratio (Der) on Stock Price on Cement Industry Listed in Indonesia Stock Exchange (Idx) in the Year of 2011-2015. *IOSR Journal of Business and Management*, 19, 66-76. <https://doi.org/10.9790/487X-1905036676>
- Khan, S., Chauhan, V., Chandra, B., & Goswami, S. (2012). Measurement of Value Creation Vis-A-Vis EVA: Analysis of Select BSE Companies. *Pacific Business Review International*, 5, 114-131.
- Khatywa, T. (2009). *Mathematical Models of Credit Management and Credit Derivatives*. Cape Town: University of the Western Cape.
- Kumar, P. (2017). Impact of Earning per Share and Price Earnings Ratio on Market Price of Share: A Study on Auto Sector in India. *International Journal of Research—GRANTHAALAYAH*, 5, 113-118.
- Lawrence, J. G., & Chad, J. Z. (2012). *Principles of Managerial Finance* (13th ed.).
- Meyer, P. G. (2005). *The Determinants of Credit Risk Mitigation in Lending to Black Economic Empowerment (BEE) Companies, from a Banker's Perspective*. Business Leadership University of South Africa.
- Mulugeta, T. (2016). *A Comparative Study on the Financial Performance of Commercial Banks in Ethiopia—An Application of Camel Model*. MSc Thesis, Addis Ababa: Addis Ababa University.
- Naima, K. (2009). *Risk Management of Banking-Comparative Study between Traditional and Islamic Banks*. The Requirements of the Master Degree in Economic Sciences, University of Mohamed Khiedr.
- Nakhaei, H. (2016). Market Value Added and Traditional Accounting Criteria: Which Measure Is a Best Predictor of Stock Return in Malaysian Companies. *Iranian Journal of Management Studies*, 9, 433-455.
- Naresh, C., & Rao, R. (2015). Credit Risk Management Practices of Indian Commercial Banks. *International Journal of Marketing, Financial Services & Management Research*, 3, 47-51.
- Poorzamani, Z., & Otari, F. (2015). Information Content of Market Value-Added (MVA) and Cash Value-Added (CVA) vs. Accounting Profit to Assess Management Performance in The Companies Accepted in Tehran Stock Exchange. *Indian Journal of Fundamental and Applied Life Sciences*, 5, 185-193.
- Rengasamy, D. (2014). Impact of Loan Deposit Ratio (LDR) on Profitability: Panel Evidence from Commercial Banks in Malaysia. *Proceedings of the 3rd International Conference on Global Business, Economics, Finance and Social Sciences* (pp. 1-18).
- Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2013). *Fundamentals of Corporate Finance* (10th ed.). Dissertations & Thesis.
- Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2016). *Fundamentals of Corporate Finance* (11th ed.).
- Sareewiwatthana, P. (2014). PE Growth and Risk: Evidences from Value Investing in Thailand. *Journal Technology and Investment*, 5, 116-124. <https://doi.org/10.4236/ti.2014.52012>
- Saunders, A., & Marcia, M. C. (2003). *Financial Institutions Management: A Risk Management Approach* (4th ed.). Boston: McGraw-Hill Companies.
- Sayed, N. S., & Sayed, G. (2015). Indian Banking Sector: Measurement and Analysis of

Market Value Added an Empirical Study in the Select Indian Banks. *Great Lakes Herald*, 9, 19-34.

Sezgin, F. H. (2010). An Empirical Investigation of the Relationship among P/E Ratio, Stock Return and Dividend Yield for Istanbul Stock Exchange. *International Journal of Economics and Finance Studies*, 2, 15-23.

Shanti, D., & Ottemoesoe, S. E. (2009). Market Value Added and Internet-Dependent Firms (Some Empirical Evidence from Asian Region). *International Journal of the Computer, the Internet and Management*, 17.

Smithson, C., & Hayt, G. (2001). Optimizing the Allocation of Capital. *The RAM Journal*, 67-72.

Song, Q. H., & Li, Z. H. (2008). *Financial Risk Management*. Beijing: China Financial Publishing House.

Srinivasan, G. U., Veerakumar, K., & Balachandran, S. (2012). Economic Value Added and Market Value Added of Private Steel Companies. *International Journal of Social Science & Management*, 2.

Talamati, M. R., & Pangemanan, S. S. (2015). The Effect of Earnings per Share (EPS) & Return on Equity (ROE) on Stock Price of Banking Company Listed in Indonesia Stock Exchange (IDX) 2010-2014. *Journal EMBA*, 3, 1086-1094.

Tarko, W. (2015). *The Impact of Non-Performing Loans on Banks Profitability in Case of Dashen Bank S.C.*

Teka, B. (2012). *The Credit Risk Management Skills Shortage in Nelson Mandela Bay Metropole*. Port Elizabeth: Nelson Mandela Metropolitan University (NMMU) Business School.

Tsumake, G. K. (2016). *What Are the Determinants of Non-Performing Loans in Botswana?* Cape Town: University of Cape Town.

Tugas, F. C., CISA, & CPA (2012). A Comparative Analysis of the Financial Ratios of Listed Firms Belonging to the Education Subsector in the Philippines for the Years 2009-2011. *International Journal of Business and Social Science*, 3, 173-190.

Ulzanah, A. A., & Murtaqi, I. (2015). The Impact of Earnings per Share, Debt to Equity Ratio, and Current Ratio towards the Profitability of Companies Listed in LQ45 from 2009 to 2013. *Journal of Business and Management*, 4, 18-27.

Van Benthem, C. S. (2017). *The Relation among Non-Performing Loans, Operating Efficiency, and Capitalization in Commercial Banking*. Enschede: University of Twente.

Wanjiku, K. R. (2015). *Credit Risk Management Strategies and Performance of Standard Chartered Bank, Kenya*. Nairobi: University of Nairobi.

Westgaard, S., & Wijst, N. (2001). Default Probabilities in a Corporate Bank Portfolio: A Logistic Model Approach. *European Journal of Operational Research*, 135, 338-349. [https://doi.org/10.1016/S0377-2217\(01\)00045-5](https://doi.org/10.1016/S0377-2217(01)00045-5)

Wibowo, P. P., & Berasategui, R. G. (2008). The Relationship between Economic Value Added (EVA®) and Market Value Added (MVA) with Reported Earnings: An Empirical Research of 40 Listed Companies in Indonesia Stock Exchange for the Year 2004-2007. *Journal of Applied Finance and Accounting*, 1, 60-72.

Yves, M. (2016). *Effects of Debt Financing on Business Performance. A Comparative Study between I&M Bank and Bank of Kigali in Rwanda. 2010-2015*. Kigali: University of Lay Adventists of Kigali.

Zewdu, A. M. (2016). *Performance of Private Commercial Banks in Ethiopia, Pre and Post NBE Bill Periods*. Addis Ababa: Addis Ababa University, Department of Management, College of Business and Economics.