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By Mohannad Mohammed Al Ajlouni & Dr. Ghazi Abdul Majeed Alrgaibat

Al al-Bayt University, Jordan

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IMPACT OF RISK ON THE DEGREE OF BANKING SAFETY IN TRADITIONAL JORDANIAN BANKS 2000-2011

Strictly as per the compliance and regulations of:



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Mohannad Mohammed Al Ajlouni ^α & Dr. Ghazi Abdul Majeed Alrgaibat ^σ

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I. INTRODUCTION

The banking system considers the backbone in the economic life of countries because the important role and vital to support the economy and provide credit facilities for individuals, economic sectors and the government, in addition to its role as a financial intermediary between the various economic sectors, also represents a fundamental objective for conventional banks, like other entities aims to maximize their profits, which maximize the wealth of the owners and increasing profitability, through Bank's investment in assets to generate the greatest return with lowest level of risk, this process leads to maximize the wealth of the owners, but investments are usually exposed to a significant risk like capital losses. Through the functions of traditional banks, they are exposed to banks risk that will affect the achievement of the primary objective of maximizing profitability which was able for conventional banks that contribute some extent to finance investment projects in various sectors of the economy, where funded several development projects, On the other hand there are many obstacles faces banks through financing projects in different sectors, the great risk comes from analyzing the impact of banking risk (capital risk, interest rate risk, liquidity risk, credit risk) on the safety of traditional Jordanian banks.

Author ^α : Al al-Bayt University, Mafrq, Jordan.
e-mail: ghazi.alrgaibat@yahoo.com

The importance of the study comes from the fundamental objective of conventional banks, which seeks to achieve maximizing profitability, the risk is part of traditional banks, and given the importance for banks in the national economy, The study also aims to identify the impact of banking risks (liquidity risk, credit risk and interest rate risk) on the degree of safety for traditional banks, also aims to identify the magnitude of these risks that raised by measuring the impact of these risks on the degree of safety for traditional Jordanian banks, through analysis the annual financial statements for the studying sample during the period (2011-2000). The problem of the study appears through answering the following questions :

- 1 What is the impact of liquidity risk on the degree of safety with conventional banks in Jordan.
- 2 What is the impact of the credit risk on the degree of safety with conventional banks in Jordan
- 3 What is the impact of interest rate risk on the degree of safety with conventional banks in Jordan.

II. HYPOTHESES OF THE STUDY

The main Hypotheses: No statistically significant effect of the banking risks on the degree of safety for traditional Jordanian banks, that can be subdivided into the following sub-hypotheses

- 1 There is no statistically significant effect of liquidity risk on the degree of safety for traditional Jordanian banks.
- 2 There is no statistically significant effect of the credit risk on the degree of safety for traditional Jordanian banks.
- 3 There is no statistically significant effect of the interest rate risk on the degree of safety for traditional Jordanian banks.

III. PREVIOUS STUDIES

study Zaid Aezzki, (2012) entitled: "The impact of banking risks on the profitability for Yemeni commercial banks during the period 1999-2009." The study aimed to identify the impact of banking risk (capital risk, interest rate risk, liquidity risk and credit risk) on the profitability of the commercial banks during the period (1999-2008) The importance of the study appeared from the objective of the commercial banks that seek to achieve the goal of maximizing profitability through carried out the functions of commercial banks,

measurement and analysis of banking risk, the impact of each bank alone, where application of this study on a sample of commercial banks during the study period, the study sample included five commercial banks were used model Stepwise multiple linear regression to test hypotheses on the level of each bank individually' using time series, and the results showed the presence of traces risks of banking on the profitability of the commercial banks at the level of each bank individually, at the level of banks' combined on different degrees, the capital risk led to decline the profitability of Bank for Reconstruction and Development, while there is no affect of capital risk on the profitability of other banks, either for credit risk, the decline has led to increased profitability at the National Bank of Yemen and Yemen Kuwait Bank and international Bank of Yemen, while contributed to increase credit risk for the commercial Bank of Yemen, as results of the study showed that the increases in interest rate risk led to the high profitability for National Bank of Yemen , while accompanied by an increased risk of high liquidity, profitability of international Bank of Yemen and Yemen Kuwait Bank. Also In a study of Ali Sahin, (2010) entitled: " practical measured of credit risk in Palestine commercial banks as analytical study of application." The aim of this study is to identify the most important variables that affect by risk degree of credit commercial banks in Palestine, the purpose was to measure those risks in accordance the basis of a fair and realistic for all installations of borrowers credit, the problem of the study appeared from Question "What is the proposed framework for measuring risk indicators of credit bank," also the search used the descriptive approach to reach reasonable results which supported the hypotheses, the study reached some results, mainly that the proposed framework to achieve measuring the risk of bank's credit, which serves the objectives of management and shareholders alike, also studying Shaheen, (2008) entitled: "influence of risk Management on the safety degree of the Palestinian banking system. " The study examined the impact of risk management on the safety of Palestinian banking system through analysis of the financial statements for the variables of the study", liquidity risk, credit risk, interest rate risk, capital risk, return on assets and that of a sample of banks", which consists of twelve banks during the period (1997-2008), and centered problem of the study proposed framework for measuring the impact of risk management on the banking safety for Palestinian banking system by using method of statistical analysis "panel data" and the application of the equation of appreciation for the safety of banking, the study found a positive relationship between the degree of safety with degree of liquidity, inadequate capital, interest rate fluctuations and the return on assets, also showed an inverse relationship between the degree of safety of banking and credit risk. at the study of al-Atrash, (2005) entitled: "The effect of

banking risks on the market value of shares for commercial banks of Jordan during the period 1989 - 2002. " The study aimed to test the impact of banking risk of (capital risk, interest rate risk, liquidity risk and credit risk) on the market value of shares for commercial banks, also the study applied on a sample from Jordanian commercial banks, which shares traded in Amman Stock Exchange, the study sample included (Arab Bank, Jordan Bank, Cairo Amman Bank, Jordan Kuwait Bank and the Jordan National Bank) during the period (1989 – 2002), the study used the descriptive and analytical method for quantitative data were used multiple linear regression method by EvIEWS program to test hypotheses on the level of each bank individually by using the time series. The study found a lack of effect for banking risks on the market value of shares for Arab Bank, and there is a variation impact of bank's risk on the market value of shares for other banks, but the interest rate risk increased to lower of market value of shares for National Bank of Jordan, Jordanian Kuwait Bank and Bank of Jordan. As for the credit risk had led to increase the market value of shares for Bank of Jordan. The study of Omer, (2004) entitled: "The banking risks and their impact on the credit facilities to the Jordanian commercial banks for the period 1988-2002." Where the study aimed to identify the impact of banking credit risks for commercial banks in Jordan for the period (1988-2002) an objective and analytical focused on the extent of credit facilities provided by commercial banks, the banking risks in terms of its aims and size, are identify the most important aspects of banking risks, manifestations, and standards, in addition to the identification of foundations for banking risk management, in order to avoid or reduce its negative effects on the operation of credit, and addressed to non-performing loans as a result of the banking risks, the analysis of data used in the study based on each of the descriptive and analytical approach by using the (spss) program, the study sample included four Jordanian commercial banks (Arab Bank, National Bank, Cairo Amman Bank and Arab Banking Corporation), the study results showed that there is a disparity in the impact of the risks on credit facilities, The results indicate that the low liquidity risk leads to increase the size of the total facilities at banks, reducing risk of capital leads to increase the size of credit facilities, the study recommended to improve the level of their risk management. study Khryosh et al (2004) entitled: "The factors affecting degree of safety for Jordanian banks." The study aimed to identify factors that affect degree of safety in Jordanian commercial banks while collecting data by financial statements of banks in addition to the reports issued by the Central Bank of Jordan during period (1992 - 2002), processing data used a regression multiple linear, the results showed the existence of a positive relationship statistically significant between degree of safety and the rate of return on equity, the rate

of return on investment, and also pointed to the existence of an inverse relationship between degree of safety and liquidity risk, either the relationship between degree of safety and credit risk was counterproductive, also required to reduce the proportion of investment in risky assets, while the relationship between degree of safety and credit risk was counterproductive, also showed lower rate of property rights to hazardous assets, low-margin of safety in an interview the investment risks of commercial banks, the study recommended to find a balance between safety and all of the risk, liquidity risk, capital and investment risks through compliance with regulations and laws by central bank, especially with regard to the legal financial liquidity and proportion of credit bank, the proportion of equity divided by total assets to find a balance between safety for each of the rate of return on equity and the rate of return on investment. *Study of Simone Varotto (2011) "Liquidity risk, credit risk, market risk and the capital of banks.* Said the aim of this paper is to examine the relationship between liquidity and credit risk, where they were employing the results of this study to assess the statement is responsible for the additional risks (IRC) and the spin problem of the study focus on the following question: "is there a relationship between liquidity risk, credit risk, market risk and the bank's capital," according to the rules and suggestions of modern Basel Committee, the study showed that there is an agreement between the decisions of the Basel Committee - the second and the value of private capital for commercial banks through sample of the bond's profits, although the credit risk of commercial banks may be significant, it can be absorb capital market risk - related to losses in scenarios aggravating. *Jose, M & Amyuatosh; and Uday Rajan, (2010) "Security, investments and the value of companies".* This study aimed to identify the impact of policy on corporate finance, performance and value of companies, where the study shed light on the environment macroeconomic ticking off during the crisis the local currency of Brazil in

1999, problem of study must answer the following question: "Is there an impact for policies of finance in Brazil on the performance of these companies and their value," then the study examined changes in the exchange rate and its impact on the safety and the study used (fixed effect) as a method used in the analysis, the study concluded that there are significant relationship and positive correlation between market value and the facility's amount, the decisions of operating safety with profit margin, derivative contracts for the currency of Brazil and capital spending, while the results indicated that lack of significant facility size, the sales growth with security decisions, as the study reported that users of derivative contracts and security system invest more users for decades derivative.

a) The most important characteristic of this study

The most important characteristic of this study is to measure the impact of banking risks, especially (liquidity risk, credit risk and interest rate risk) on the safety's for the Jordanian traditional banks, the study relied on a sample from Jordanian conventional banks of five banks which possess market share in excess of 50% of the Jordanian banking sector.

b) Data of the study include

The period of the study (2000 - 2012), which using data from the annual financial statements to the banks of the study sample Sources of data collection: to achieve the goals of the study by receiving data from books, pamphlets, and periodic reports issued by the Central Bank as well as the financial statements that issued by conventional banks and the Securities Commission for the study period.

c) Methodology of the study include

Variables of the study: The study consists of the following variables Independent variables: (liquidity risk, credit risk, interest rate risk). The dependent variable the degree of banking safety.

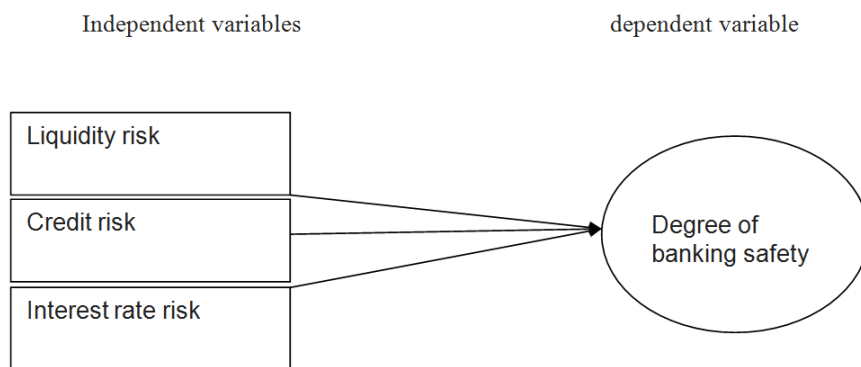


Figure 1 : Model study

Mathematical model study: Depending on the previous model. Was built the following mathematical equation, which was used in the study (Aezzki 0.2012):

$$S_{it} = \alpha + B_1 LR_{it} + B_2 CR_{it} + B_3 IR_{it} + e_{it}$$

Where is :

S : refers to the degree of safety in the traditional banks of Jordan.

i : refers to the sample of the study (number of banks)

t : refers to the time.

$B1$: laboratories of the first independent variable (liquidity risk)

$B2$: laboratories for the second independent variable (credit risk).

$B3$: laboratories for the third independent variable (interest rate risk).

e : random error.

The study population consists of local conventional banks operating in Jordan 13 banks. The study sample consists of five traditional Jordanian banks, (Arab Bank, Jordan Kuwait Bank, the Housing Bank for Trade and Finance, Cairo Amman Bank, and Bank of Jordan).

of independent data variables were together with banking risks through test of normal distribution, there is no problem link multiple linear between the independent variables (multi collinearity) through test inflation variability (VIF) and the allowable variance test (Tolerance) where the following tables shows the tests results.

IV. STATISTICAL ANALYSIS AND HYPOTHESIS TESTING

a) Test of hypotheses

Before starting the implementation of the linear regression analysis, the researcher ascertain the extent

Table 8 : The arithmetic mean and standard deviation

Standard Deviation	Mean	Banking Risks
0.121154	0.457167	Liquidity Risk
0.148947	0.526667	Credit Risk
0.118850	0.321743	Interest Rate Risk
0.051941	0.180667	Safety Degree

prepared by Researchers

The above table gives an indication that the credit risk is due account in particular with the relative other risk in terms of impact on safety degree when the arithmetic mean and standard deviation was (0.526667

and 0.148947), respectively, also to know the behavior of the independent variables, allocation of normal in terms of their impact on The dependent variable will be dealt with the following table:

Table 9 : The results of testing the data independent variables (banking risk)

Sig.	k-s Test	Coefficient sprains	Banking Risks
0.310278	0.964275	1.083840	Liquidity Risk
0.837646	0.619368	0.536622	Credit Risk
0.846724	0.612922	0.512714	Interest Rate Risk

prepared by Researchers

Through table (9) which shows that the values of transactions may sprains confined between (-0.512714 and 1.083840) it considers all these values close to the normal distribution that accepts the values of coefficients sprains to be between -1 - $+1$ the coupling data distribution with normal distribution ,this is an important requirement and essential for the application of the linear regression analysis test, this is an indication that the behavior of these risks is distributed naturally in terms of the influence's degree on the credit's degree of banks also the values of the test Kolmejevov - Smirnoff ks)) that test the distribution matching data to the normal distribution of non statistically significant differences between tow distributions, where all values were calculated

significance level greater than 0.05, as shown in the table above .

The following table shows the values he correlation coefficients between the different variables.

Table 10 : Matrix correlation coefficients between the independent variables

Interest Rate Risk	Credit Risk	Liquidity Risk	Banking Risks	
0.031072	0.361671-	1.000000	correlation	Liquidity Risk
0.813683	0.004520	0.000000	Sig.	
0.344572	1.000000		correlation	Credit Risk
0.007018	0.000000		Sig.	
1.000000			correlation	Interest Rate Risk
0.000000			Sig.	

prepared by Researchers

Values of correlation coefficients in Table (10) it was weak in addition to that it is not statistically significant (with the exception of the relationship between liquidity risk and credit risk, which was significant relationship because the significance level which calculated was less than 0.05), where notes the lower values of the relationships among independent

variables (Even the significant and the strongest worth .361671), which indicates that the variables are independent with each other, thus conclusion of the study reveals affect for each on safety degree, the following table shows the results of correlation between banking risks.

Table 11 : The results of the test multiple linear correlation between banking risk

Variance allowed (Tolerance)	Variance inflation factor (VIF)	Banking Risk
0.841688	1.188089	Liquidity Risk
0.742471	1.346854	Credit Risk
0.853381	1.171809	Interest Rate Risk

prepared by Researchers

Table (11) shows that the values of coefficient variability inflation ranged between (1.171809 - 1.346854) These values are considered appropriate and refers to the absence problems of linear correlation between banking risk because all of these values were less than (10) also notes that the allowed values of variation it has ranged between (0.742471 - 0.853381) and all these values are considered greater than (0.10), which helps in the conclusion that there is no problem of multi-linear correlation between banking risks, where it

should not bypass this problem in order to verify the random distribution of the values for residuum in the regression model.

V. THE RESULTS OF TESTING HYPOTHESES

a) Test the hypothesis Home

H0: No statistically significant effect of the banking risks on the safety degree of Jordanian commercial banks.

Table 12 : Results of multiple linear regression

Sig (f)	F	R ²	Independent variables
0.006068	4.591417	0.197412	Liquidity Risk
			Credit Risk
			Interest Rate Risk

prepared by Researchers

Table (12) shows that the value of (R²) has reached (19.7412%), which indicates that the independent variables was able to interpret the 19.7% of the change or the discrepancy in the dependent

variable, the reason can be attributed to the regulatory measures adopted by the Jordanian Central Bank with commercial banks, which plays a major role in reducing the exposure of commercial banks to risks.

Table 13 : The results of analysis of variance one way ANOVA

The level of significance	The value of f	Average squares	Degrees of freedom	Sum of squares	Source of variation
0.006068	4.591417	0.010474	3	0.031423	Regression
		0.002281	56	0.127751	Residuals
			59	0.159173	Total

prepared by Researchers

Table (13) shows that the value of f calculated (4.591417), a value statistically significant because the value of the significance level accompanying reached (.006068), which is less than 0.05, which means rejection of the zero hypothesis of the study, which refers to the absence of the impact for banking risks on the safety degree, thus the conclusion accepted the

alternative hypothesis, there is at least one of the banking risks affecting on the safety degree of commercial banks, where it can rely on values of t-test to identify risks that could affect the safety degree of commercial banks, where table (13) shows values of transactions for regression model that has been reached.

Table 14 : The values of the regression coefficients for the prediction model

Sig(t)	T	β	Elements
0.000000	6.741240	0.275680	The constant term
0.014543	2.521898-	0.141083-	Liquidity risk
0.003301	3.069803-	0.148730-	Credit risk
0.011176	2.624076	0.148616	Interest rate risk

prepared by Researchers

Table (14) shows that the values of multiple regression, which predicts the value of the safety degree through liquidity risk, credit risk and interest rate risk, also as demonstrated by the value of T calculated: the importance of all risks of the three in forecasting model, so that the value of significance level facilities to value of T calculated be statistically significant if less of 0.05. And inferred on the credibility of the impact for these risks through: values of T calculated and the level of significance (-2.521898) with level of significance (.014543) for liquidity risk, and (-3.069803) with level of significance (.003301) to credit risk, and amounted to (2.624076) with level of significance (.011176) for interest rate risk. Since all the values of the significance level was less than 0.05, it indicates the acceptance of the hypothesis " the impact of these risks in predicting the value of the safety degree, and from here we can take advantage to predict the value of the safety degree as follows:

$$\text{Safety Degree} = 0.275680 - 0.141083 \times \text{liquidity risk} - 0.148730 \times \text{credit risk} + 0.148616 \times \text{interest rate risk}.$$

b) Multiple linear regression results for the variables of the study

H1: No statistically significant effect of liquidity risk on the safety degree in Jordanian commercial banks.

To test this hypothesis had used multiple regression analysis that described the results in table (14), which is showing the values of T calculated (-2.521898) with level of significance of (.014543) and a linear relationship between liquidity risk and safety degree in commercial banks as evidenced value of β value of independent variable effect on the dependent variable in the study, if we assume that the value of influence in safety degree of was worth (100%), thus liquidity risk affects by (-0.141083), and this result is rejection of the hypothesis of the study and accept the alternative hypothesis, these results indicate the existence of a negative impact of liquidity risk on the

banking, where the safety degree greater than the degree of liquidity risk.

H2: No statistically significant effect of the credit risk on the degree of safety at commercial banks of Jordan. To test this hypothesis had used multiple regression analysis, to describe the results table (14), shows the values of T calculated (-3.069803) while the level of significance (.003301) and a linear relationship between credit risk and the safety degree in commercial banks as evidenced by the value of β effect of the independent variable on the dependent variable, so if we assume that the value of influence in the safety degree worth (100%), credit risk affect by (-0.148730), so this result is rejection of the hypothesis, and accept the alternative hypothesis, which refers to the presence of trace credit risk on the safety degree, these results indicate the existence of a negative impact of credit risk on the banking. H3: No statistically significant effect of interest rate risk on the safety degree for commercial banks. To test this hypothesis using multiple regression analysis described the results in the table (14), that showing values of T calculated (2.624076) when level of significance (.011176) and a linear relationship between the interest rate risk and the degree of safety in commercial banks as evidenced by value of β as effect of the independent variables on the dependent variable, so if we assume that the influence value of safety degree was worth (100%), interest rate risk affects by (.148616), this result rejected the hypothesis and accept the alternative hypothesis, these results indicate the existence of a positive impact for interest rate risk on the safety degree, and shows that the greater interest rate risk has increased the safety degree.

VI. CONCLUSIONS

After analyzing the financial statements of the study's sample there is a group of results as follows:

- 1 There is an impact of liquidity risk on the safety degree for Jordanian commercial banks, which is due to repay some of its financial liabilities as a

highest cost Sometimes , usually connected with short-term , through value of T calculated (2.521898) when level of significance (.014543), which showed an inverse relationship between liquidity risk and the safety degree for the Jordanian commercial banks.

- 2 There is an impact of credit risk on the safety degree, it considered one of the most influential factor on the safety degree for Jordanian commercial banks comparable with other risks, due mainly to the large number of delays repayment of loans (annuities) and interest obligations on time, in addition to sometimes Banks provide some loans to its customers without sufficient guarantees to repay the loan, where earned this factor the highest arithmetic average and standard deviation was (0.526667 and 0.148947), respectively, also through values of T calculated (-3.068803), and level of significance of (.003301), which means that there is an inverse relationship between credit risk and safety degree in the Jordanian commercial banks.
- 3 There is an impact of interest rate risk on the safety degree for Jordanian commercial banks, due to the intensity of competitiveness among Jordanian commercial banks, which are operating in the domestic market on each "of the interest payable on the granted credit facilities to customers, debit interest on both loans and bonds issued by commercial banks" with volatility of interest rates because of complexities of the economic conditions surrounding, through the values of T calculated (2.624076) and the level of significance (0.011176), So there is a positive relationship between interest rate risk and the safety degree in the Jordanian commercial banks.

VII. RECOMMENDATIONS

- 1 The risk management framework should be subject to continuous review, by the administration for Jordanian commercial banks, through reviewing policies and procedures, so as to comply with internal and external variables, that allows for each bank to manage liquidity with efficiently and high preferably identify various commitments by scheduling priority paid to be there prepared in advance to meet various obligations, especially short-term.
- 2 Permanent and advance coordination with the client to remind him dates of repayment of loans and benefits to reach solutions in cases when individual faced financial bust.
- 3 Continuous development and effective regulatory controls and commercial banks needed to ensure proper risk administration, and its impact power on the banking safety.

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