

## **INTERNAL RISKS AFFECT THE FINANCIAL PERFORMANCE OF THE BANKS: EVIDENCE FROM JORDAN**

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### **Abstract**

The study examines the effect of internal risks on the financial performance of the banks in Jordan. The study was conducted on the financial statements of 15 banks, which covered the period from (2010-2019). The financial statements of these banks for the year 2020 were excluded due to the exposure of various economic sectors to a decline in their performance as a result of the continuous ban under the Defense Law applied during the Corona period. Averages and standard deviations are used to describe the data, and correlation coefficient and regression are used to test the study hypotheses. The findings of the study showed that the impact of capital adequacy on the financial performance of banks in Jordan was positive, while the impact of credit risk, liquidity risk, and operational risk were negative on the performance of these banks. The study recommends bank management in Jordan abide by the instructions issued by the Central Bank of Jordan, and the successive decisions issued by the Basel Committee to face risks that affect their performance.

**Keywords:** Financial performance, capital adequacy, credit risks, liquidity risks, Operating risk.

### **1. Introduction**

Banks play an important role in the financial system of countries as an intermediary to absorb savings and restart them and provide banking facilities and loans to their applicants, although they operate in an environment characterized by instability, the diversity of risks they face, which may lead to the bankruptcy of some of them, especially if their managements are not qualified to direct deposits. The most important risks faced by banks are: credit risks, liquidity risks, operational risks, capital insufficiency risks, changes in interest rates, and inflation risks that affect their performance. The management of banks can manage these risks to reduce their adverse effects on their financial performance. In view of the financial crises that have left their effects on the economy in many countries, researchers' interest in tracking the effects of these crises on the performance of banks has increased, and as a result, decisions of the Banking Supervision Committee, Basel I, II and III were issued, which carried directives to banks to manage the risks they face, especially after the decline in the interest of the management of these banks in managing these risks, which called for attention to the banks achieving the minimum amount of capital sufficient to face crises, and attention to the management of the remaining risks.

rewarding. In mid-2017, the Central Bank of Jordan issued instructions to local banks to enhance their ability to maintain the soundness and soundness of their financial positions, and reduce the negative effects of financial problems that affect the stability of their financial system. It also allowed them to implement the successive decisions of the Basel Committee, especially after the global financial crisis in 2007. Which revealed the failure and weak performance of many European banks, which negatively affected the stability of the financial and economic system in the world, due to the increase in the size of these banks, their expansion, the multiplicity and spread of their

branches across borders, the complexity of their operations, and their weak capabilities in the field of financial services they provide. In order to ensure that Jordanian banks implement the instructions of the Central Bank and the implementation of the decisions of the Basel Committee, the Central Bank of Jordan has been in contact with the boards of directors of these banks and follows their plans to face these risks. The Central Bank of Jordan has granted these banks a period of one and a half years to implement governance procedures and set procedures for risk management, starting from the end of 2017, especially with regard to implementing additional capital requirements and completing this at the end of 2020.

Risk analysis aims to assess the bank's ability to meet its debts, manage direct deposits and loans it obtains from other banks, and direct them to safe investments with rewarding returns. The management of these risks will affect the banks' profits, continuity, stock values, and asset values in the market.

This is the first study in Jordan that deals with the need for Jordanian banks to adhere to the decisions of the Basel Committee to avoid the various risks they face, such as credit risk, liquidity risk, and operating risks in addition to the adequacy of their capital. This study examines the impact of these risks on the financial performance of these banks. In the remainder of the study, the importance, objectives and hypotheses of the study will be presented, the theoretical framework and previous studies will be presented, then the study methodology will be shown, and the results will be analyzed, conclusion, and recommendations.

## **2.The Problem of the study**

The interest in studying the impact of risk management in banks on their financial performance increased, especially after the repeated recommendations of the Basel Committee. The Central Bank of Jordan was interested in directing banks to pay attention to risk management, possess sufficient capital, and take appropriate measures to protect their funds and depositors' money. This study came to identify the impact of Jordanian banks' application of the Central Bank of Jordan's recommendations regarding their ability to manage the risks they face, maintain sufficient capital, and examine their impact on the performance of these banks.

## **3.The importance of the study**

The importance of the study comes from the fact that it aims to study the impact of Jordanian banks' application of the directives of the Central Bank of Jordan with regard to managing the risks they face in their financial performance, and that it will help financial policymakers in the most important sectors of the national economy. The role played by banks is important in attracting and directing investments from depositors. To borrowers in a developing country, and its importance in the first study in this field in Jordan.

## **4. The objectives of the study**

The study aims to examine the effect of financial risk management on the financial performance of banks in Jordan, represented in capital adequacy, market risk, credit risk, and liquidity risk.

## **5. Hypotheses of the study**

After reviewing the previous literature that dealt with the relationship between risk management and financial performance, and to achieve the objectives of the study, the following hypotheses

were developed:

H01: Capital adequacy (CAP) doesn't affect the return on assets (ROA) of the banks.

H02: Credit risk (CRR) doesn't affect the return on assets (ROA) of the banks

H03: Liquidity risk (CRR) doesn't affect the return on assets (ROA) of the banks

H04: Operating risk (CRR) doesn't affect the return on assets (ROA) of the banks

## **6.The theoretical framework and previous studies**

Banks contribute to economic stability, as they play the role of intermediation between depositors and borrowers (Flamini, et al., 2009, Owojori et al., 2011). When the ability of borrowers from these banks to repay their loan installments on their due date decreases, the indicators of liquidity in them decrease, and credit risks will appear (Baldwin and Scott, 1983), and this requires the bank management to start taking appropriate measures to manage these risks (Whitaker, 1999) And banks can address indicators of low liquidity by investing part of their money in the purchase of financial assets, which can be converted into cash quickly when needed (Olalekan, et al., 2018). The financial crisis of the last decade revealed the shortcomings of banks in their risk management, and the impact of this on their financial performance (Mathghagamna, 2011, Selma et al., 2011, Sowemi et al.,2014). Financial risks can be divided into internal risks that can be controlled, such as capital adequacy, credit risks, liquidity risks, and operational risks (Shafiq and Nasr, 2010, Athanasoglou et al. 2005, Olweny and Shipho, 2011) and external risks that are difficult to control, as in interest rate risks, inflation risks, and currency exchange risks, changes in demand for goods and services, and changes in customer tastes, that can be affected by diversification in investments (Dang, 2011, and Yimka et al., 2015). In order to face these risks, banks should manage them (Afriyie and Akotey, 2012). External risks require stress tests, that allow banks to continue performing their services, and protect the rights of their depositors, these tests include banks maintaining sufficient capital to face the various crises (Basel, 2009), but they are still ambiguous in terms of their nature and procedures, that began to be applied after the financial crisis, that occurred in East Asian countries in the nineties of the last century, and its application increased after the financial crisis in 2008 in many banks because it enables these banks to faces risks (Basel, III, 2010, 2011,2019, and Central Bank of Jordan, 2009 and 2016, and Heffernan, 1996 ). Successful companies are concerned with managing the risks they face, to reduce their effects to an acceptable limit, and this is reflected in their financial performance, increasing the value of the company, and maintaining sufficient capital needed for productive investment (Servaes et al. 2009), reduce volatility in cash flows, reduce foreign exchange losses (Fatemi and Glaum, 2000).

Many studies have been conducted that are concerned with examining the variables that affect the financial performance of banks, but none of them has been able to reach a model that reflects the impact of these factors on the financial performance of banks, especially in developing countries (Mirza and Javid, 2013). Among the most important internal variables that affect the financial performance of banks is their capital that helps them in carrying out their activities, and the more it is sufficient the more it helps them in facing financial crises, bearing credit risks, market risks, operational risks, and facing potential losses, and this will be reflected in increasing their financial performance (Diamond, and Raghuram, 2000). Haque and Wani, (2015) found a significant impact of capital on financial performance. it was found from the study of Reynolds

and Rattanakomut (2000) and the study of Yu (2000) that the relationship between bank profitability and capital adequacy is positive, and no relationship was shown between the two variables in the studies of Javaid, et al., (2011) and Ani, et al., (2012), Adeusi et al., (2014), and Demirguc- Kunt and Huizinga, (1999), while Gizaw, et al., (2015) and Mardiana and Diana (2018) that capital adequacy negatively affects profitability, or has a weak impact on profitability, according to the study of Frederick (2012), and may not have any impact on the profitability of the bank, according to a study (Al-Shatti, 2015), or Liquidity is negatively related to ROA, according to Nuhui et al.,(2017).

Banks exercise their activity by attracting depositors and exploiting their deposits in the activity of providing loans to customers. Therefore, banks face risks associated with extending credit facilities to customers, and some borrowers may default or fail to repay their loan installments on their due dates. These risks will affect the banks' liquidity and their profitability (Luy, 2010), especially if there is no diversification in the loan portfolios held by these banks (Cooper, et al., 2003). Credit risk is one of the most important risks faced by banks (Kolapo et al., 2012, anedi and Onuegbu, 2014), as it was found from the study of axwell and Peter (2016) that the relationship between credit risk and the bank performance is important, or strong (Mudanya and Motouri, 2018, while Amza (2017), Olamide et al., (2015), Duca and McLaughlin (1990) found a negative relationship between credit risk and bank performance, or positive according to study of (Maritim, 2013). Among the studies that dealt with the effect of credit risk on the financial performance or profitability of the bank, is the studies of Bagh, Khan, et al., (2017), Adikonle et al. (2015), and Tefri et al. (2009) showed that credit risk has a significant impact on financial performance, while the study of Hosna et al, (2009) showed a negative and significant relationship between credit risk and financial performance, or a negative relationship between the two variables according to Poudel (2012), while it was found from Wood, and Mc Conney, (2018) that credit risk has a negative impact on the financial performance of the bank, or a positive effect of risk management on financial performance (Mwangi et al., 2014), while the study ( Lelgo and Obwogi, 2018) revealed a negative effect of credit risk on financial performance, the studies of Shingjergji and Hyseni (2015) and Jonathan, and Michael (2018) showed that there is no relationship between the two variables.

In all cases, bank management should track the credit risks, because this will increase their profits (Li and Zou, 2014), and help in maintaining an acceptable level of non-performing loans, which are the highest risks facing banks.

Banks should invest their surplus cash by facilitating customers' access to loans, or purchasing financial assets that can be converted into cash quickly when needed, because the accumulation of cash in banks is accompanied by the risks of not exploiting the surplus cash in productive investments, and therefore The impact on the profits of banks, and their performance in general (Kamau and Negro, 2016), and the lack of cash liquidity has a risk represented in the inability of banks to pay their obligations or to finance customers' withdrawals from their deposits. Cash is one of the drivers of profitability (Hussain et al., 2016). Studies by Modania, Horn, (2018), Juma, and Etero, (2018) showed an important relationship between liquidity and financial performance, or profitability (Juma, Etheru, 2018), while the studies of Muteti (2014), Molinius and Thorton (1992) and Adin (2009) showed a negative relationship between liquidity and financial performance, while studies of Frederick (2014), and Nasser et al., (2013) showed a weak

relationship between liquidity risk and financial performance.

Banks also face operational risks due to the use of complex electronic technologies and tools in carrying out their banking operations (Holmes, 2003, Pakhchanyan,2016). The studies of Luís et al., (2011) and Habib et al., (2014) examined the relationship between operating risks and the financial performance of banks. Rashid and Jabeen (2016) found no significant, negative effect of operating efficiency on bank performance. The study by Harelimana (2017) showed that the relationship between the operating efficiency and the financial performance of the bank is important, but the study of Yossi (2015) appeared that there is a negative and significant impact of operating risks on the performance of banks, while the study of Pradhan and Shrestha (2017) appeared a positive and important effect for operating efficiency on the financial performance of commercial banks.

## 7. The methodology of the study

### 7.1 Study sample

The study population consists of all Jordanian commercial banks, their number is 15, with the exception of Islamic banks that adhere to the rules of the Islamic system in their transactions.

### 7.2 The data and sources of the study

The study relies on the financial statements published on them in the Amman Financial Market, the various bulletins issued by the Central Bank of Jordan, and the financial statements covering the period from (2010) -2019), The financial data for the year 2020 were excluded because the Jordanian economy was greatly affected by the embargo imposed by defense laws to address the Corona.

To identify the characteristics of the data, the mean and standard deviation were used, as the skewness test, and the Durban test, and to examine the hypotheses of the study, the Pearson correlation coefficient, and linear regression model were used to identify the model that links the dependent variable (return on assets), and the independent variables (capital adequacy), Credit risk, liquidity risk, and operational risk).

### 7.3 The Model and the variables of the study

The study model was developed after reviewing the relevant studies, and the return on assets ratio was chosen as a measure of financial performance, this ratio explains the quality of use of the bank's assets. The model shows the effect of the independent variables (capital adequacy, credit risk, liquidity risk, and operational risk) on the dependent variable (return on assets, as a measure of financial performance).

The model of the study is below:

$$FP_{i,t} = \alpha + \beta_1 CAP_{i,t} + \beta_2 CRP_{i,t} + \beta_3 LRP_{i,t} + \beta_4 ORP_{i,t} + \epsilon$$

Where table 1 summarizes the variables, how to measure them, and how they are used in their studies.

Table 1 summarizes the model's variables and how they were measured

Variable	Symbol	Measuring the variable	Source
Financial Performance	ROA	Net income to Total Assets	Raci, et al.,(2021 )
Capital Adequacy ratio	CAP	Total capital risk-weight edited assets	BCBS.

(1988)			
Credit Risk Ratio	CRP	Nonperforming loans to Total loans	
BCBS. (2004)			
Liquidity Risk Ratio		Loans and advances to deposits	BCBS
(2010, 2019), and			
Ongore, and Kusa (2013).			
Operational Risk Ratio	ORP	Operating expenses to Operating income	
BCBS. (2019)			
$\varepsilon$		The equation constant,	
$\beta_1 - \beta_4$		Error term	
		The coefficient	

Source: the author

Table 2: Co-linearity Statistic Values of Variance Inflation Factor (VIF).

		Tolerance	VIF
Capital Adequacy rate	(CAR)	0.189	5.312
Credit Risk rate	(CRR)	0.083	12.112
Liquidity Risk rate	(LRR)	0.443	2.257
Operating Risk rate	(ORR)	0.065	15.489

Source: the author

Table 2 shows that there is no multi-co-linearity between the study's variables, this supports the validity of the regression outputs, where the variance inflation factor (VIF) of the variables is less than 10, and there is no problem with heterogeneity in the regression results (Gujarati,2003).

### 8. Analyze data and discuss results

Table 3 shows the averages of the study's variables and their standard deviations. The standard deviations were small, and this means that the data are not dispersed. It also shows that the value of the Durbin-Watson test (1.667) is within the period (-2,2), which means that the data distribution is normal.

Table 3: Descriptive statistics

Variables	Observations	Minimum	Maximum	Mean	Std.dev.
ROW	650	0.0060	0.0190	0.0118	0.0045
CAR	650	0.1010	0.1621	0.1284	0.0189
CRR	650	0.0678	0.1786	0.1340	0.0406
LRR	650	0.1170	0.1980	0.1608	0.0239

ORR                      650      0.2678      0.4980      0.40234      0.1807

Table 3 shows the statistics of the study variables during the period of this study, as the standard deviations of most of the variables are small in value, and this means that the dispersion in their values is low, and the least of them was due to the return on assets variable 0.0118, and the largest to the operational risk variable 0.402. And that the value of the return on assets ranged between 0.06 and 0.019, and this means that the decline in the performance of banks came in the periods that followed the 2008 financial crisis, but it began to improve due to the increased supervision exercised by the Central Bank on the activities of Jordanian banks, its direct support for their activities, and the provision of loans to them at interest rates acceptable in times of crisis. And that the values of the capital efficiency variable range between 0.1010 and 0.1621, and this means that they are within acceptable limits and that Jordanian banks have continued their activities, and were able to face the conditions of recession and the conditions of inflation that the Jordanian economy has suffered for a long time. The value of the credit risk also ranged between 0.0678 and 0.1786, and this means that the risks of non-performing loans are within acceptable limits. However, banks must strive to reduce non-performing loans to the minimum possible, so they must study the solvency of the customer before providing the loans to them while maintaining mortgages for these loans. As for the liquidity risk, it ranged between 0.117 and 0.198, which means that Jordanian banks did not exaggerate the number amount of loans provided to customers compared to the size of their deposits, and this enables them to grant more loans to customers in exchange for their deposits, taking into account the control of the conditions for granting credit. Banks seek to invest surplus cash in securities that are easy to convert into cash when needed. The increase in cash at banks means that their investment will be disrupted, and they must maintain a sufficient cash surplus to cover their various payments and depositors' sudden withdrawals. The table also shows that the value of the operational risks ranged between 0.268 and 0.498, and this means that the operational risks came within their acceptable limits, and the banks must control their expenses, in order to achieve more profits.

Table 4: Correlation Matrix

	ROA		CAR		CRR		LRR		ORR	
	P.C	Sig	P.C	Sig	P.C	Sig	P.C	Sig	P.C	Sig
P.C	Sig									
ROW	1.000									
CAR	0.889**	0.001	1,000							
CRR	- 0.769**	0.009	-0.831**	0.003	1,000					
LRR	- 0.793**	0.006	-0.684*	0.029	0.685*	0.028	1.000			
ORR	- 0.799**	0.006	- 0.881**	0.001	0.949**	0.000	0.629	0.051	1,000	

\* Correlation is significant at the 0.05 level (2- tailed).

Source: the author

Table 4 shows that the relationship between capital adequacy and return on assets is positive and significant at the 0.001 level, this means that the greater the capital adequacy, the need to borrow becomes low, the cost of financing becomes low, this will lead to an increase in the return on

assets. the relationship between credit risk and return on assets is negative and significant at the level of 0.01, this means that the higher the credit risk, the lower the return on assets, and the relationship between liquidity risk and return on assets is negative and significant at 0.01, this means that an increase in liquidity risk will lead to a decrease in the return on assets. And shows also, that the relationship between operational risk and return on assets is negative and significant at 0.01 level, this means that increasing operational risk will reduce the return on assets.

These results mean that Jordanian banks adhere to the instructions of the Central Bank of Jordan, and the decisions of the Basel Committee (I, II, III), which are related to managing credit risks, liquidity risks, and operational risks, as well as paying attention to maintaining sufficient capital.

Table 5: Test of Ordinary Least Squares (OLS) Method

	Coefficient	S.E	t-statistic	P-
value				
Constant	0.00720.023	0.310	0.769	
Capital Adequacy Proxy (CAP)	0.01420.092	1.543	0.184	
Credit Risk Proxy (CRP)	- 0.02620.065	- 0.348	0.742	
Liquidity Risk Proxy (LRP)	- 0.07200.048	- 0.151	0.191	
Operating Risk Proxy (ORP)	- 0.01260.037	- 0.339	0.749	
Number of Observation				
F-statistic	7.556			
Sig	0.024			
R Square	0.858			
Adjusted R Squared	0.744			

Source: the author

Table 5 shows that the R-Square value is 0.960, which means that 95% of the variance in the dependent variable ROA is explained by the regression model. The F value is 20.668, at a significant 0.0002 level, this supports the validity of the study model. Table 5 also shows that there is a significant and positive effect of CAP on ROA, where p-value  $0.119 < 2$ . This means that an increase in CAR by one unit will leads to an increase in the return on assets by 0.067 of unit, more than that the relationship between CAR and ROA is positive and significant (see table 4), there is a significant and negative effect of the CRR variable on the ROW, where p-value  $0.683 < 2$ , and this means that a decrease in CRR by one unit, the return on assets will increase by 0.01of unit, more than that the relationship between the two variables is significant and negative, there is a significant and negative effect of the LRP variable on ROW, p-value  $0.923 < 2$ , and the relationship between the two variable s is significant and negative, 0.012, this means that a decrease in LRP by one unit, the return on assets will increase by 0.008 of unit, more than that the relationship between LRR and ROA is negative and significant (see table 4), and finally there is significant and negative effect of the variable ORP on the ROW, this means that a decrease in the ORP by one unit, the return on assets will increase by 0.006 of unit, more than that the relationship between the two variables is significant and negative.. Depending on these results, the study hypotheses are rejected, and the alternative hypotheses should be accepted, as in table 6.



**Table 6 Testing hypotheses**

Hypothesis	Expected	Observed	
Accepted			
	affect	affect	or
Rejected			
<b>H01: Capital adequacy doesn't affect the return on assets</b>	-	+	
rejected			
<b>H02: Credit risk doesn't affect the return on assets.</b>	+	-	rejected
<b>H03: Liquidity risk doesn't affect the return on the n assets</b>	+	-	rejected
<b>H04: Operating risk doesn't affect the return on assets</b>	+	-	rejected

$$FP = -0.0015 + 0.0669 \times CAR - 0.0102 \times CRR - 0.0008 \times LRR - 0.0035 \times ORR$$

## Conclusion

Banks face many risks, including internal risks, such as capital adequacy risks, credit risks, liquidity risks, and operational risks, including external risks, such as interest rate risks and currency exchange risks. The study aims to examine the impact of internal risks on the financial performance of Jordanian banks during the period (2010-2019). The financial statements of these banks were obtained from the data published in the Amman Financial Market, and from the bulletins issued by the Central Bank of Jordan

The study showed a significant and positive effect of CAP on ROA, and this result is consistent with the results of studies of Reynolds and Rattanakomut (2000) and Yu (2000), and a significant and negative effect of CRR variable on ROW, and this result is consistent with the results of the studies of Makoni, (2018), Jelgo and Obwogi, (2018), are a significant and negative effect of the LRP variable on ROW, and this result is consistent with the results of the studies of Muteti (2014)), Molinius, Thorton (1992) and Adin (2009), and finally a significant and negative effect of the ORP variable on ROW, and this result Consistent with the results of the Yosfi study (2015).

## Recommendations

The studies recommend Jordanian bank administrations to abide by the instructions of the Central Bank of Jordan and the decisions of the Basel Committee with regard to maintaining sufficient capital that enables these banks to face financial crises, and to reduce non-performing loans as much as possible due to their impact on their performance, by studying clients well and identifying their financial solvency before granting them loans. And maintaining sufficient cash, increasing it means disabling its investment in productive investments, and thus affecting the performance of banks. Finally, the study recommends limiting non-income-generating expenses, because of its direct impact on the bank's profits and thus on its performance.

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