"The role of corporate governance in reducing the global financial crisis implications in light of the Central Bank of Jordan"

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BUSINESS PERSPECTIVES

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THE ROLE OF CORPORATE GOVERNANCE IN REDUCING THE GLOBAL FINANCIAL CRISIS IMPLICATIONS IN LIGHT OF THE CENTRAL BANK OF JORDAN

Abstract

The study aims to test the role of the measures implemented by the Central Bank of Jordan to reduce the effect of financial crisis on the Jordanian banks, using two independent variables (loans and advances rate, overnight deposit window), which are the actions of the Central Bank of Jordan, and four dependent variables (liquidity ratio, ROA ratio, capital adequacy ratio, non-performing loans ratio), which are financial stability indicators for the banks for six years (2005–2011).

To get the study results, these data are measured and analyzed using SPSS (Statistical Package for Social Sciences). It was found that the actions of the Central Bank of Jordan (loans and advances rate, overnight deposit window rate): have a statistically significant impact on the non-performing loans ratio (2005–2011); do not have a statistically significant impact on the capital adequacy ratio (2005–2011); have a statistically significant impact on ROA ratio (2005–2011); do not have a statistically significant impact on the liquidity ratio (2005–2011).

Keywords	Jordanian economy, commercial banks of Jordan, financial crisis
JEL Classification	G21, E58

INTRODUCTION

Banking is a major sector of any economy and dedicated to holding financial assets for people and institutions and investing those assets as leverage to generate wealth. Government agencies regulate these activities. The banking sector is a network or a group of institutions that provides financial services. Banking systems perform several different functions, depending on its network of institutions. The banking sector in Jordan is considered one of the most important parts of the Jordanian financial system and the economy as a whole. Despite the Arab Spring's impact on the Arab region and its financial institutions, the banking sector in Jordan proved steadiness maintaining existence and growth. The Jordanian banking sector comprises twenty-six banks; fifteen banks are listed on the Amman Stock Exchange (ASE) (ASE) (CBJ, 2012; Alqaisi, 2018).

The central bank is a separate national authority that controls monetary policy, regulates banks, and provides financial services, including economic research. The main objectives are to stabilize and maintain the nation's currency, control and keep unemployment low, and prevent an increase in inflation. Moreover, it affects economic growth by

controlling the liquidity in the financial system. There are many monetary policy tools to achieve these objectives, which, if achieved, would lead to an improvement in financial stability. To have an efficient financial system, central banks must set a reserve requirement that obligates private banks on how much cash they need to have on hand. This reserve is needed if any financial problems occur, preventing them from collapsing (Al Qaisi, 2018).

The world economy in general, and international and national financial markets in particular, have experienced unrest and imbalance not seen since the Great Depression of 1929. Never before have we witnessed sharp turmoil in stock markets, money markets, energy markets, and precious metals. International and Arab stock exchanges fell and achieved record losses and European and emerging markets, especially the Gulf and Egyptian stock exchanges, which have lost more than half their value during the global financial crisis, a rate of decline not seen in a long time. Besides, some stock exchanges closed their doors on some days after they opened on a large decline for fear that the collapse of stock prices too much as the Indonesian stock market. The unrest was not only limited to money markets, financial markets, and stock exchanges. There have been turmoil and collapse in financial institutions such as investment banks, insurance companies, and financial institutions that provide mortgage finance, large financial institutions with a global reputation. The collapse began in the United States and was followed by financial institutions in Europe, particularly Britain and Germany (Bseiso, 2006). The banking sector in modern economies is one of the most important sectors because it mobilizes domestic and foreign savings, finances investment, and is the most important relationship between the investor and finance sources. As the sector expands, its development and robustness are the important criteria by which the economy is governed by the country and its ability to attract domestic and foreign capital (Saini & Sindhu, 2014).

The growth rates of money supply of M1 and M2 were calculated using the data from the Ministry of Planning and International Cooperation of Jordan in 2019.

Growth rates of money supply	Year 2007 Q4	Year 2008 Q4
Growth rate of Money supply M1	5.9%	15.31%
Growth rate of Money supply M2	10.61%	17.28%

The above growth rate shows the expansion of the money supply by the Central bank of Jordan in dealing with the international financial crisis at the time. The growth rates of 2008 were higher than the usual increase in the money supply by the Central bank.

This study aims to evaluate the function of the Central Bank of Jordan in mitigating the reflections of the global crisis on the Jordanian banking sector and the role of corporate governance and regulations in reducing of the global financial crises implications in light of the Central Bank of Jordan's instructions, which can be demonstrated by answering the main question: Do actions of the Central Bank of Jordan in the field of loans and advances rate and on overnight deposit window rate during the crisis have a significant effect on reducing the reflections of the crisis on banks that operate in Jordan in the field of financial robustness indicators "non-performing loans ratio, ROA ratio, liquidity ratio, and capital adequacy ratio?"

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Ani (2010) found that Jordanian banks' performance is negatively impacted by the global financial crisis, especially operating performance and financial performance. The study showed that the average performance rate after the global financial crisis declined (compared to the pre-crisis years 2009 and 2008). This study recommends that Jordanian banks share expertise in crisis management and joint coordination to protect the private banking sector of any crises reflected negatively on the Jordanian economy. From here, the Central

Bank of Jordan should take appropriate measures and use fiscal and monetary policies that can deal with financial crises, such as non-expansion of bank credit granted.

The study of Toukan (2005) links between monetary variables and financial indicators during the global financial crisis through the analysis of linear regression and the reality of financial reports to analyze the role of economic policies of the Central bank of Jordan in mitigating the impact of the global financial crisis on the Jordanian banking sector. Also, Ahid and Ayuba (2012) found out that the stock market index in Jordan was affected negatively by the global financial crisis, which led to foreign investors' flight, especially Arabs, from the market.

Due to the importance of the banking sector, the Central Bank of Jordan, like others, intensified its efforts to achieve the safety of the banking system's financial condition to enable it to compete globally and locally. Through the application of international standards, especially Basel standards, the global financial crisis has had a big effect on the financial systems on the world, and here comes the function of the Central Bank of Jordan to reduce the reflections of the crisis on the banking system, as well as the burden that central banks take due to the interconnected financial problems with political problems (Gamal, 2012).

Ahid and Ayuba (2012) proved the effect of the global financial crisis on Jordan's economy. The study found that the banking and tourism sectors were not affected by the global financial crisis. Albustanji (2012) aimed to find out Central Bank of Jordan's role in containing these crisis repercussions on the Jordanian banking sector. A study found that the global financial crisis raised the ratio of non-performing loans to total debts and the capital adequacy ratio, and decreased the return on assets as a result of lowering the interest rate on the overnight window deposit.

Al-Tayeb (2011) confirmed that the most important findings were that the pace of economic growth is still below the desired level and that such a situation requires the continuation of

monetary and banking explanatory policies. The Central Bank of Jordan should review this policy periodically and work to change it if circumstances economic and credit conditions. In light of this, the study recommended that the Central Bank of Jordan issued a directive to increase the minimum of capital, and banks continue to compel banks to abide by for risk management at all levels.

Lin (2008) aimed to study the effect of the financial crisis on the developing countries and the study results:

- a noticeable decline in the developing countries exports and a decline in the international trade volume in those countries from 9.3% to 4.1% in 2008;

- foreign investments declined in the developing countries, especially direct investment, which requires a high interest in them;

- failure to complete the investment projects because of the decline in the investments and the lack of transfers to complete them.

This study recommended that the developing countries should ensure the deposits of the banks that work within it.

Orozco and Lesaca (2009) pointed out that not all stock markets in Arab countries have been impacted by the crisis at the same level, such as Kuwait, Qatar, the United Arab Emirates, and the Kingdom of Saudi Arabia, by fifty percent, while Morocco, Lebanon, and Jordan stock markets were relatively unaffected. Hussien (2009) discussed the effect of the financial crisis on the Egyptian financial system. He found that the financial market in Egypt was greatly affected by the global financial crisis of 2008. The study of Levitin, Pavlov, and Wachter (2009) could not confirm that the policy of securitization was the cause of the global financial crisis but found a major reason that the lending policy adopted by the banks market was hostile and without prior study and especially the policy of lending on loans.

Khoon and Muh-Hui (2010) pointed out that Malaysia, on many sides, such as the flow of money across the border, import and export, and curren-

cy exchange rates, has been affected by the global financial crisis. On the other hand, the banking sector and the unemployment rate have been relatively not affected by the crisis (Baum, Cagayan, & Ozka, 2008). The study aimed to re-evaluate the lending behavior in the commercial banks in the USA considering the monetary policy used in the country and the fluctuations and the instability in the financial market represented in the fluctuations in interest rates. The result of the study was that the fluctuation in the interest rates has a significant effect on the lending unit and banks' budget power or ability to lend, and showed that small banks tend to lend more in the time of fluctuations in the financial market, while larger banks tend to lend less under the management that attracts less risky loans.

Krstic and Jemovic (2009) pointed out that the central banks were affected by the financial crisis due to the lack of financial stability, and an increase in interest rates, debts in the market of financial institutions, and recommended the importance of the revision of the monetary policies through the credit facilities and reducing the interest rates.

Tan and Floros (2018) examine the relationship between different types of risk (credit risk, liquidity risk, capital risk, and insolvency risk), competition, and efficiency in the Chinese banking industry. They found that higher efficiency levels are significantly and positively related to credit risk and insolvency risk, but significantly and negatively related to liquidity risk and capital risk.

Pozen and Shiller (2009) state that there are two types of loans in American real estate banks, which are, of course, joint-stock companies. The first is collateralized loans; this type is characterized by a low-interest rate of up to 6% due to its guarantee to repayment. The other type is loans without collateral and is characterized by a high-interest rate of up to 14%, due to the customer's failure to provide certain guarantees for repayment loans. The second type of loans has increased significantly, with the decline in the level of economic activity in the United States starting in 2006 and upwards, and the rise in unemployment and inflation, most borrowers could not meet their debts, which led four of the largest mortgage lenders in the United States to have declared bankruptcy.

Study hypotheses:

H0: *The actions of the Central Bank of Jordan have no statistically significant effect in the area of loans and advances rate and overnight deposit window rate on reducing the repercussions of the financial crisis on Jordanian banks in the field of financial robustness indicators (non-performing loans ratio, ROA ratio, liquidity ratio, and capital adequacy ratio).*

- H01: *The actions of the Jordan central bank have no statistically significant effect on the non-performing loans ratio of banks operating in Jordan (2005–2011).*

- H02: *The actions of the Jordan central bank have no statistically significant effect on the capital adequacy ratio of banks operating in Jordan (2005–2011).*

- H03: *The actions of the Jordan central bank have no statistically significant effect on the ROA ratio of banks operating in Jordan (2005–2011).*

- H04: *The actions of the Jordan central bank have no statistically significant effect on the liquidity ratio of banks operating in Jordan (2005–2011).*

2. METHODOLOGY

This study takes two independent (loans and advances rate, overnight deposit window), which are the actions of the Central Bank of Jordan and measures how the four dependent variables, which are the financial robustness indicators (non-performing loan ratio, ROA ratio, legal liquidity ratio, and capital adequacy ratio), react to the actions of the central bank during the global financial crisis.

It took its sample data three years before the crisis and three years after (2005–2011).

Loans and advances rate and overnight deposit window rate are used as dependent variables for this study. The author also includes several independent variables: capital adequacy ratio, liquidity

Table 1. Independent variables (in %) for six years (2005–2011)

Year	Loans and advances rate	Overnight deposit window rate
2005	8.1	4.5
2006	8.56	5.25
2007	8.86	4.75
2008	9.48	4
2009	9.07	2.5
2010	9.01	2
2011	8.67	2.25

Table 2. Dependent variables (in %) for six years (2005–2011)

Dependent variables	2011	2010	2009	2008	2007	2006	2005
Capital adequacy ratio	19.3	20.3	19.6	18.4	20.8	21.4	17.6
Non-performing loans/total loans ratio	8.5	8.2	6.7	4.2	4.1	4.3	6.6
ROA ratio	1.1	1.1	1.1	1.4	1.6	1.7	2.0
Liquidity ratio	152.9	161.4	159.1	141.2	157.7	161.4	168.0

ratio, non-performing loans ratio, and ROA ratio. This model (Figure 1) adopted illustrates the aim of this paper

To achieve the objectives of this paper and test the hypothesis, the researcher dealt with one type of data: secondary data.

This research is based on secondary data containing the data of financial reports of the Central Bank of Jordan and Association of Banks in Jordan, the period of the study taken in this research is six years from 2005 to 2011, and also data which are used by the researcher to describe the financial crisis and its effect on the financial systems globally, and the rules of central banks during the financial crisis of 2008 in maintaining the financial stability using the various sources and references, including articles and academic researches that are related to the topic, as well as internet and websites.

To test the relationship between the two variables and the effect of independent variables on the dependent variables, these data and information are measured by the statistical program SPSS (Statistical Package for Social Sciences) and ANOVA.

Al-Abdallah and Bataineh (2018) used descriptive statistics and regression analysis methods to describe the data and test the hypotheses.

3. STUDY RESULTS AND DISCUSSION

Table 3 indicates a summary of the important descriptive statistics for the Jordanian banks' financial indicators from 2005 to 2011. The loans and advances rate satisfied a mean value of 8.82, with a standard deviation value of 0.17.
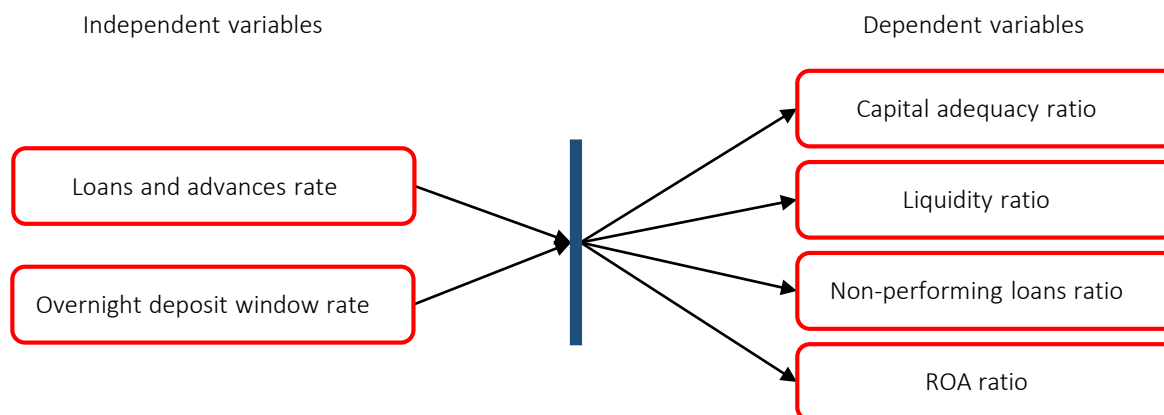
Independent variables

Dependent variables

Figure 1. Model of the study

Table 3. Descriptive statistics for the study variables during 2005–2011

Variables	Loans and advances rate	Overnight deposits window rate	Non-performing loans ratio	Capital adequacy ratio	ROA ratio	Liquidity ratio
N	7	7	7	7	7	7
Minimum	8.10	2.00	4.10	17.60	1.10	141.20
Maximum	9.48	5.25	8.50	21.40	2.00	168.00
Mean	8.82	3.61	6.09	19.63	1.44	157.36
Standard deviation	0.17	0.50	0.72	0.50	0.14	3.20
Std. deviation	0.44	1.33	1.90	1.34	0.36	8.46
Skewness	−0.25	−0.13	0.12	−0.27	0.50	−1.14
Kurtosis	0.62	−2.23	−2.08	−0.82	−1.30	2.05
K-s test	0.142	0.226	0.255	0.121	0.252	0.221
Sig	0.200	0.200	0.187	0.200	0.199	0.200

The overnight deposits window rate during the study period (2005–2011) satisfied a mean value of 3.61, with a standard deviation value of 0.50.

Concerning the non-performing loans ratio during this period, the mean value was 6.09, with a standard deviation of 0.72.

The capital adequacy ratio had satisfied a mean of 19.63, with a standard deviation of 0.50.

Regarding the ROA ratio during this period, the mean value was 1.44, with a standard deviation of 0.14.

Regarding the liquidity ratio, it satisfied a mean of 157.36, with a standard deviation of 3.20.

The standard deviation is a statistic that measures the variability among the data concerning the mean. As the value increases, this indicates a higher variability. The provided standard deviation value is considered to be small compared to the mean values. This natural variation may explain by several issues such as the region war results during this period, which let a flood of refugees (especially the Iraqis) to come to Jordan as a safe financial environment to deposit their cash and invest in this environment. Besides, the global financial crises were during this period, which

negatively affects banks' performance not only in Jordan but also worldwide.

3.1. The first sub-hypothesis

H01: *The actions of the Central Bank of Jordan have no statistically significant effect on the non-performing loans of banks operating in Jordan (2005–2011).*

Table 4 shows the results of multiple linear regression for testing the effect of the actions of the Central Bank of Jordan on non-performing loans in the banks working in Jordan (2005–2011). The f value (122.9) was statistically significant because the related sig value (0.000) was lower than 0.05. Concerning the Durbin0Watson test value, it was 2.31. This value lies within the desired range (1.50-2.50), considering that the best test value is around 2.0.

The beta coefficient reflects the effect value of the independent variable. It was (−2.37) for the loans and advances rate and (−1.46) for the overnight deposits window rate, which significantly contributes to the dependent variable as the probability of t-statistics were 0.001 and 0.000, respectively, lower than 0.05, taking into account that the two variables negatively affect the non-performing loans. In this aspect, the re-

Table 4. Multiple linear regression for testing the effect of actions of the Central Bank of Jordan on non-performing loans in banks operating in Jordan (2005–2011)

Independent variable	r	R^2	F	Sig(f)	D.W.	β	t	Sig(t)
Loans and advances rate	0.992	0.984	122.9	0.000	2.31	−2.37	−8.14	0.001
Overnight deposits window rate	−	−	−	−	−	−1.46	−15.32	0.000

searcher tested the study hypotheses in terms of their acceptance or rejection by conducting linear regression analysis of the selected variables in the models (t-test), F-test and the explanatory power of the model, R-squared (R^2) to verify the relationship between the variables.

The t-statistics (also called Student's t-test) examines the linear significance of the beta coefficient for the independent variable.

The t-test compares two averages (means) and tells one if they are different from each other. The value of R^2 is a mean the prediction strength of the dependent variables (loans and advances rate, overnight deposit window rate) using the independent variables (capital adequacy ratio, liquidity ratio, non-performing loans ratio, ROA ratio) and is 98.398%. Thus, the null hypothesis is rejected, and the alternative was accepted, concluding that the actions of the Central Bank of Jordan have a statistically significant effect on non-performing loans (2005–2011).

3.2. The second sub-hypothesis

H02:   The actions of the Central Bank of Jordan have no statistically significant effect on the capital adequacy ratio of banks operating in Jordan (2005–2011).

Table 5 shows the results of multiple linear regression for testing the effect of the actions of the Central Bank of Jordan on capital adequacy ratio in the banks working in Jordan (2005–2011). The f value (122.9) was not statistically significant because the related sig value (0.914) was higher than 0.05. Concerning

the Durbin-Watson test value, it was 2.26. This value lies within the desired range (1.50-2.50), considering that the best test value is around 2.0.

The beta coefficient was 0.540 for the loans and advances rate and 0.186 for the overnight deposits window rate, which did not significantly contribute to the dependent variable as the probability of t-statistics were 0.750 and 0.739, respectively, higher than 0.05, taking into account that the two variables positively affect the capital adequacy ratio. The t-statistics test examines the linear significance of the beta coefficient for the independent variable.

R^2 is a mean for the prediction strength of the dependent variables (loans and advances rate, overnight deposit window rate) using the independent variables (capital adequacy ratio, liquidity ratio, non-performing loans ratio, ROA ratio) and is 4.39%.

Thus, the null hypothesis is accepted, and the alternative one is rejected, concluding that the actions of the Central Bank of Jordan have no statistically significant effect on capital adequacy ratio (2005–2011).

3.3. The third sub-hypothesis

H03:   The actions of the Central Bank of Jordan have no statistically significant effect on the ROA ratio of banks operating in Jordan (2005–2011).

Table 6 shows the results of multiple linear regression for testing the effect of actions of the Central

Table 5. Multiple linear regression for testing the effect of the Central Bank of Jordan on capital adequacy ratio in the banks working in Jordan (2005–2011)

Independent variable	r	R^2	F	Sig(f)	D.W.	β	t	Sig(t)
Loans and advances rate	0.021	0.044	0.092	0.914	2.26	0.540	0.34	0.750
Overnight deposits window rate						0.186	0.35	0.739

Table 6. Multiple linear regression for testing the effect of the Central Bank of Jordan on ROA in banks operating in Jordan (2005–2011)

Independent variable	r	R^2	F	Sig(f)	D.W.	β	t	Sig(t)
Loans and advances rate	0.960	0.9219	23.64	0.006	2.29	−0.320	−2.61	0.059
Overnight deposits window rate						0.207	5.15	0.007

Table 7. Multiple linear regression for testing the effect of the Central Bank of Jordan on the liquidity ratio of banks operating in Jordan (2005–2011)

Independent variable	r	R^2	F	Sig(f)	D.W.	β	t	Sig(t)
Loans and advances rate	0.804	0.647	3.65	0.125	2.20	−16.339	−2.67	0.055
Overnight deposits window rate	–	–	–	–	–	−1.047	−0.52	0.629

Bank of Jordan on (ROA) in the banks working in Jordan (2011–2016). The f value (122.9) was statistically significant because the related sig value (0.006) was lower than 0.05.

Concerning the Durbin-Watson test value, it was 2.29. This value lies within the desired range (1.50-2.50), considering that the best test value is around 2.0.

The beta coefficient was (–0.320) for the loans and advances rate and 0.207 for the overnight deposits window rate. Only the overnight deposits window rate, which significantly contributes to the dependent variables as the probability of t-statistics, was 0.007. The loans and advances rate, which did not significantly contribute to the dependent variable as the sig value (0.059), was higher than 0.05, considering that the overnight deposits window rate variables positively affect the ROA. The t-statistics test the linear significance of the beta coefficient for the independent variable.

R^2 of 92.189% is a mean for the prediction strength of the dependent variables (loans and advances rate, overnight deposit window rate) using the independent variables (capital adequacy ratio, liquidity ratio, non-performing loans ratio, ROA ratio).

Thus, the statistical analyses rejected the null hypothesis and the alternative one concluding that the actions of the Central Bank of Jordan have a statistically significant effect on return on assets (2005–2011).

3.4. The fourth sub-hypothesis

H04: *The actions of the Central Bank of Jordan have no statistically significant effect on the liquidity ratio of banks operating in Jordan (2005–2011).*

Table 7 shows the results of multiple linear regressions for testing the effect of the action of the Central Bank of Jordan on liquidity ratio in the banks working in Jordan (2005–2011). The f value (3.65) was not statistically significant because the related sig value (0.125) was higher than 0.05). Concerning the Durbin-Watson test value, it is 2.20. This value lies within the desired range (1.50-2.50), considering that the best test value is around 2.0.

The beta coefficient was (–16.339) for the loans and advances rate and (–1.047) for the overnight deposits window rate, which did not significantly contribute to the dependent variable as the probability of t-statistics were 0.055 and 0.629, respectively, higher than 0.05, taking into account that the two variables negatively affect the liquidity ratio.

R^2 of 64.699% is a mean for the prediction strength of the dependent variables (loans and advances rate and overnight deposit window rate) using the independent variables.

Thus, the statistical analyses accepted the null hypothesis and rejected the alternative one concluding that the actions of the Central Bank of Jordan have no statistically significant effect on liquidity ratio (2005–2011). The findings of this research are consistent with the findings of Albustanji (2012).

CONCLUSION

This study aimed to test the rule of the action of the Central Bank of Jordan in reducing the effect of the global financial crisis on banks operating in Jordan, using two independent variables (loans and advances rate, overnight deposit window) and four dependent variables (liquidity ratio, ROA ratio, capital adequacy ratio, non-performing loans ratio) for six years (2005–2011) to get results before and after the global financial crisis.

The actions of the Central Bank of Jordan have a statistically significant effect on non-performing loans, ROA, and liquidity ratios in the banks working in Jordan (2005–2011), and no statistically significant effect on capital adequacy ratio in the banks working in Jordan (2005–2011).

The Central Bank of Jordan should continue its noticeable and significant role in banking supervision on the commercial banks, especially concerning the foreign investment for those banks outside Jordan to avoid the negative effects of the financial crisis on those banks and their customers and the national economy in general. It should continue to give credit to the commercial banks so those banks could re-accredit them to the industrial sector, leading to an improvement in the national economy and reducing unemployment.

The Jordanian banks should continue to manage the credit facilities risks and improve the specialized departments by providing them with the well-practiced, trained and eligible human resources, should get enough collaterals when they give credit facilities, and constantly monitor those collaterals to ensure that their market value covers the given credit facilities value when they liquidate them. The government and through the central bank should ensure the customer's deposit to earn the customer's trust.

Future research can depend on the results of this paper as it is one of few studies, which attempt to evaluate the role of the activities implemented by the Central Bank of Jordan to reduce the effect of the financial crisis on the Jordanian banking system. Moreover, this paper is of expected value for researchers as it provides a discussion of the impact of the crisis based on evidence from selected Jordanian banks to evaluate the stability of the sector. Future research can extend the sample size to obtain more informative results and the study period to shed light on the long-term impacts of this crisis. The countries should learn good lessons from this crisis to protect themselves in the future.

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