Capital Adequacy of the Jordanian Banking Sector for the Period 2000-2013

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Abstract   The study seeks to identify the capital adequacy of the Jordanian banking system for the period 2000-2013. The researcher adopted the descriptive and the analytical approaches to identify the capital adequacy of the Jordanian banking system depending on data obtained from the Amman Stock Exchange Market, the Central Bank of Jordan and the Jordanian Ministry of Finance for the period 2000 - 2013. The study showed that there is a statistically significant relationship between the capital adequacy and liquidity. There is a statistically significant relationship between capital adequacy and credit risk. There is a statistically significant relationship between capital adequacy and the capital risk. There is a statistically significant relationship between capital adequacy and investments in the securities portfolio. The researcher recommends the commercial banks to increase their strategic planning and management capacity to utilize any rise in capital to increase profits. They should develop market and operational risk assessment methods to be included in the calculation of capital adequacy ratio of the commercial banks. Further studies should be conducted on the capital the adequacy of the Jordanian commercial banks.

Key words   Capital, capital adequacy, liquidity, Jordanian Banking Sector

1. Introduction

Capital adequacy plays a significant role in maintaining the safety and strength of both the banks the banking systems in general; it represents the buffer or the barrier that prevents any unexpected losses that inflict the bank from affecting the depositors' money. It is well known, the banks generally operate in an environment weighted with a high degree of uncertainty of many risks (Obeidat, 2008).

The capital adequacy of the commercial banks was brought to light in the United States in the middle of the nineteenth century by issuing an act for the minimum capital requirement for commercial banks according to the number of residents of the area the banks operating in. Interest in commercial banks gained momentum by establishing the Basel Committee on Banking Supervision in1974. The term capital adequacy reflects the capacity and efficiency of commercial banks to measure, direct and monitor the risks they encounter in order to not only to curtail and control these risks but also to take decisions consistent with the banks' strategies and policies as well as enhancing their competitive ability. The capital adequacy helps banking pricing and boosting the revenues of the commercial banks operations (Shahatit, 2011).

Commercial banks seek to make available a variety of measures of solvency, notably the standard of the capital adequacy which was approved by the Basel Committee in 1988 and adopted by more than 100 states. The committee played pioneering role in codifying many of these developments as a result of coordination among the banks of the industrial countries for fair competition among them. So, this renovation action was soon adopted as a standard of the banks' financial soundness and, thus, the compatibility with these conditions has become an element in determining the credit rating of these nations and their banks. Moreover, the Basel Committee issued several documents related to bank sound management principles and effective supervisory (Sheikh, 2005).

Banks play an important role in the economic development; they provide the necessary funding for various sectors to enable them to carry out their activities. This leads to the expansion of the national economy and increasing the size of the gross national production. The last quarter of the twentieth century witnessed many rapid and successive changes in the global economy such as the growing trend towards globalization of the economic activities , the emergence of the World Trade Organization as well as the increasing financial markets activities, and technological and information resources. In light of these changes it has become necessary that the banks should keep up with these global developments, according to various criteria, including the capital adequacy of commercial banks (Cai, 2007, p. 262).

1.1. Problem of the Study

The study seeks to identify the capital adequacy of the Jordanian banking system. The commercial banks have not only to provide sufficient capital coverage to meet any potential risks but also to develop a proper strategy to maintain this coverage to ensure that the bank's capital is higher than the fixed capital ratio in order to avoid interference of the monetary authorities to prevent its failure.

The problem of the study is determined by answering the following questions:
1. Is there any capital adequacy impact on the liquidity of the Jordanian banking system?
2. Is there any capital adequacy impact on the Jordanian banking system trust risks?
3. Is there any capital adequacy impact on the Jordanian banking system capital risks?

1.2. The Importance of the Study

The commercial banks have been gaining and more importance since the time of their emergence, because these banks are considered the balances of economic progress of countries, the backbone and the dynamo of all the financial operations. They preserve the money, utilize, expand, and facilitate its transactions, plans investing it. No one denies the positive role played by the banking activity in funding and investment services. Therefore, the commercial bank has to make available a capital adequacy to achieve its objectives. The commercial bank capital adequacy is the value the assets that exceeds its total debts, which is considered as a protection against potential losses. It also the money provided by the bank owners to obtain future returns, but in case of bankruptcy of the bank, it is likely that they bear the risk of not recovering their money.

In addition, the capital allows funding the bank when established and throughout its life span. It is also a guarantee for others and it absorbs unexpected losses and secures the solvency of the Commercial Bank. Thus, the study gains its importance by highlighting the capital adequacy of commercial banks.

1.3. The Study Objectives

This research aims to identify:
1. The relationship between capital adequacy and the Jordanian banking system liquidity.
2. The relationship between capital adequacy and the Jordanian banking system trust risk.
3. The relationship between capital adequacy and the Jordanian banking system capital risk.

1.4. The Study Variables

Independent variable: Capital Adequacy.
Dependent variables: Liquidity, Trust risk, Capital risk.

2. Literature review

Tamimi and Obeidat (2013) conducted a study to identify the most important factors that determine capital adequacy in the Jordanian banks, through a sample of (15) Jordanian banks. They tested the relationship between the capital adequacy of the Jordanian banks and the following elements: interest rates risk, liquidity risk, credit risk, capital risk, revenue strength rate, owner equity return, assets return. Adopting the multiple linear regression method and the Pearson correlation coefficient found that there was a statistically significant relationship between the degree of the capital adequacy of the Jordanian commercial banks and the following independent factors: the interest rate risk, the rate of the owner

equity return and assets return. Whereas there was no statistically significant relationship between the degree of capital adequacy of the Jordanian commercial banks and the following independent factors: capital risk, credit risk, and the revenue strength rate.

Abu Sharba *et al.* (2013) identified the most important determinants of the capital adequacy of the Islamic Indonesian banks. They tested whether there is an inverse or direct correlation between capital adequacy ratio and the following independent factors: the return on assets rate, deposits structuring, liquidity, operational efficiency and asset quality, based on data covering the period (2009-2011) obtained from annual reports of Islamic Banks involved by the study as well as the statistics published by the Central Bank of Indonesia. Using the multiple linear regressions, the researchers came up with the following results: There was a statistically significant direct relationship between the capital adequacy ratio of Islamic banks of Indonesia and the rate of return on assets. There was a statistically significant direct relationship between the capital adequacy ratio of the Islamic banks of Indonesia and liquidity. There was a statistically significant inverse relationship between the capital adequacy ratio of the Islamic banks of Indonesia and the assets quality. There was no inverse relationship between the capital adequacy of the Islamic banks of Indonesia and operational efficiency.

Shahatit's study (2011) measured the effects of applying the capital adequacy standard by the commercial banks on their profitability. As the commercial banks operating in Jordan in a risky environment, it has become necessary for them strengthen their financial positions through implementation of financial safety standards particularly the capital adequacy standard which is a global standard representing the minimum limit of safety and financial security requirements. The study sought to answer the following question: Did increasing capitals of the commercial banks in Jordan's have any effect on profitability? To answer this question, the study used analysis/cross time chains for twelve indicators of profitability for all the 15 commercial banks involved by the study for the period 2000 to 2007 with 1440 observations. The study did not use any data because of the global financial crisis. The study concluded that the application of capital adequacy standard had no statistically significant or negative or effect on the profitability of the commercial banks in Jordan whereas there was no positive impact for raising capital, except for three ratios of profitability.

Gholami (2010) explored the effect of the implementation of capital adequacy requirements according Basel II agreement on the Jordanian commercial banks' performance during two periods. The first period (2002-2006), which represents the time period following the implementation of capital adequacy requirements according Basel II agreement and the second period (2006-2007), which represents the time period following the implementation of capital adequacy requirements according Basel II agreement. The study showed that the capital adequacy requirements did not have a statistically significant effect on the returns on assets, net interest margin due to the implementation of Basel II. It also found that there was a statistically significant negative impact for the capital adequacy requirements on the returns on the owner equity returns, following the implementation of Basel II.

Al-Zubi *et al.* (2008) tested the attitudes of banks towards capital changes imposed by supervisory authorities on the Jordanian banks during the 1990-2003. Based on the model developed by Shrieves & Dahl in 1992, and to enrich and strengthen the statistical results of this study, three formulas equations were used: Fixed Effects, Random Effects and Generalized Least Square. Statistical results showed a positive relationship between the framework of restrictions and regulations and levels of capitals of banks that need restructuring (strengthening) in line with the levels of bank risks. The results also showed a reason for increasing the capital base in line with the levels of the banks risks, because the banks' capital levels are close to the minimum capital requirements.

Melegy's (2002) developed an accounting model for judging the commercial bank's capital adequacy in Egypt, to get a standard that includes the various elements needed for assessing the capital adequacy, besides reflecting most of the risks facing the commercial banks, particularly credit risk, the inflation risk, liquidity and market risks. The study showed the ineffectiveness of the standards capital adequacy based on the Basel Committee on Banking Supervision in 1988, and the decisions of the Central Bank of Egypt in 1991, and the new framework for the capital adequacy (Basel 1999) in preserving the capitals of the commercial banks' capital and ensuring the safety of their financial positions. They also do not reflect the

various risks facing commercial banks operating in Egypt, nor do they include all the required elements for assessing the capital adequacy.

Mikhlafi' (2004) tested the effect of bank capital adequacy indicators on both banking risk and return on banking and its reflection on the value of the bank. Nine indicators of the banking capital adequacy were used: capital to deposits, capital to total assets, capital to loans, capital to risk assets, free capital to risk assets, free capital to operating assets, capital to investment, capital to contingent liabilities, and capital to risk-weighted assets. Three banking risk indicators were used: credit risk, interest rate risk, and liquidity risk. Among the banking revenue indicators, which refer to the ability of banks to generate revenue, nine indicators were used: net interest margin, net income margin, the rate of asset turnover, the rate of return on assets, the double leverage, the rate of return on the right of ownership, the rate of return on deposits, the rate of return on the funds available, and the rate of return strength of available resources. The results of the analysis of the study confirmed the hypothesis of the study, which stated that both the banking risk and banking return indicators could be affected by the indicators of bank capital adequacy and this affect the value of the bank. The study also showed that the fiscal and monetary authorities as well as the Yemeni banks themselves should take actions, measures and internal steps to secure the commitment to the Basel Committee II resolutions pertaining to banks capital adequacy, in the framework of the Yemeni banking systems. They should also arrange appropriate scheduling for the implementation of Basel II resolutions.

Barakat's Study (2009) was conducted to determine the extent of the implementation of Basel II requirements standards. To achieve the goal of the study, the researcher designed a questionnaire which was distributed to more than forty employees in commercial banks in Jordan. The study results revealed that all banks in Jordan apply standards (Basel II) but there is a significant difference in the application of Basel II standards between local banks and foreign banks.

Khoreiwish *et al.* (2004) sought determine the factors affecting the degree of banking safety of the Jordanian commercial banks. To achieve this, data pertaining to the Central Bank and the Amman Stock Exchange for the period (1992-2002) were collected. For data analysis, the multiple regression models were used. The study concluded that there is a statistically significant positive relationship between the level of banking safety and the rate of return on the owner equity and the rate of return on investment. But there is a statistically significant negative relationship between the degree of banking safety and the liquidity risk, the capital risk and the credit risk .The study put forward a set of recommendations underscoring the importance of the banking safety to the concerned authorities in the field of finance and investment.

Jose M. Berrospide *et al.* (2008) study sought to identify the impact of the funding policy on firm performance and their value. The study focused on presenting the macroeconomic environment of the local Brazilian currency crisis in 1999. Then, the study addressed the exchange rate changes and their implications on the banking and the institutional safety.

The fixed effect was used as one of analysis methods adopted by the study. The results of the study indicated a statistically significant positive correlation between the market value and the book value of the facility, the safety resolution, the operating profit margin, and the Brazilian currency derived contracts, the capital expenditure, and the cash budget. While the results indicated the absence of a direct statistically significant correlation for the size of the facility, and the rate of sales growth with banking security resolutions in the model of the fixed effect, the study also found that users of the derived contracts and system security invest were more than non-users.

3. Methodology of research

3.1. Research hypotheses

The study is based on the following hypotheses:

- There is a statistically significant relationship between capital adequacy and liquidity of the Jordanian banking system.

-There is a statistically significant relationship between capital adequacy and credit risk of the Jordanian banking system.

- There is a statistically significant relationship between capital adequacy and risk capital on the Jordanian banking system.

3.2. The study approaches

The researcher adopted the descriptive and the analytical approaches to measure, present, analyze, evaluate and interpret data in order to identify the capital adequacy of the Jordanian banking system. The study will depend mainly on the data obtained from the Amman Stock Exchange, the Central Bank of Jordan and the Jordanian Ministry of Finance for the period 2000 - 2013.

The independent Variable   The dependent variable

Figure 1. The study Model

3.3. Population of the Study

The study population consisted of the Jordanian Banking System, according to every year general index for the period 2000- 2013.

3.4. The Study Sample

The study sample consisted of the commercial banks sector listed on Amman Financial Market General Index every year for the period (2000- 2013 AD).

3.5. Data Collection Sources

The following sources were consulted to obtain the necessary data and information required for preparing this study.

First: The Primary Sources: Amman Financial Market was chosen to obtain fiscal data for the period 2000-2013.

Second: The Secondary Sources: The study reviewed the theoretical literature and previous studies related to the subject of study in addition to the published sources such as books, the theoretical and applied scientific studies, and university theses.

Operational Definitions

Capital: It is the bank's assets value exceeding its total debts. It represents property and possessions presented by the owners for future returns (David, 2010).

Capital Adequacy: It represents the measures and precautions against all kinds of the potential risks the commercial banks may encounter during their operational tasks (Polius, 2000).

Capital Adequacy: The methods adopted by the bank owners and management to strike balance between the risks expected by the bank and the size of its capital. Technically, the capital adequacy or the ideal efficiency represents the capital that can meet the risks and leads to attract deposits , the bank profitability and then its growth (Zu'bi *et al.,* 2008).It is also is known as the relationship between the bank's capital and its assets risk. The bank's capital adequacy ratio is a tool that measures its solvency. The degree of the bank solvency can be defined as the potential insolvency: the lower bank insolvency odds, the higher its solvency will be.

Liquidity: when assessing the liquidity of the commercial bank the assessors should take into account the current level of liquidity as well as the future needs for liquidity entailed by the funding needs besides the level of managing the bank liquidity, compared with its size, complexity and magnitude of risks it has. Generally, the bank liquidity management must ensure that the bank is able to maintain an adequate level of liquidity to meet the obligations of the bank at the right time and this should not be at the expense of cost nor should they depend on fund sources funds that may not be available in difficult conditions (Killab, 2007).

Credit risk

The Basel Committee on Banking Supervision (Sept, 2000) issued the Principles for the Management of Credit risk to encourage banking supervisors at the international level to promote sound practices for managing credit risk. Despite the acceptance of the application of the principles contained in the document, they should not be exclusive to credit operations. Rather, the implantation must involve all the activities related to the credit risks. The document cited the most important areas of sound risk management practices, the most important of which are:
- Maintaining sound credit granting process;
-Maintaining the measurement process and monitoring the credit granting process;
-Establishing an appropriate credit risk environment;
- Ensuring adequate monitoring process.

Capital risk

Credit risk scan occur due to the capital inadequacy to absorb the potential losses which harm the depositors and creditors. Therefore, the banks are concerned with bank capital adequacy which ensures the rights of depositors and creditors. Given the implications of these risks, the international community is keen to provide the greatest possible amount of safety conditions for the banking sector. This concern is represented by the Basel Committee on Banking Supervision, which plays a key role in this regard (Bo Abdali, 2004). The capital risks are considered according the following points:
-Risk-return rates;
-Specific risks relating to the source of financial instruments compared to credit risk;
- General risks associated with changes in the stock markets;
- The specific risks associated with each stock separately.

The Basel Committee divided the states of the world into two groups according to their credit risk weights: low risk states consisting of two sub-groups: the first group includes members of the Organization for Economic Co-operation and Development (OECD) countries, in addition to two states: Switzerland and The Kingdom of Saudi Arabia. The second sub-group consists of the countries which held some special default arrangements with the International Monetary Fund, namely: Australia, Norway, Austria, Portugal, New Zealand, Finland, Iceland, Denmark, Greece and Turkey. The Basel Committee amended this concept in July 1994, to exclude any country from this group if they rescheduled the external public debt within 5 years. The high risk countries consist of all countries of the world except for the states of mentioned above. (Abdel Hamid, 2001). Basel Committee developing different weighted weights for the degree of asset risks: the weighted weight varies according the asset variation on one hand, and it also it varies as the indebted varies, on the other. The assets included when assessing the capital adequacy of r are rated by five weights: 0.10%, 20%, 50% and 100% (Killab, 2007).

Table 1. Assets and weights according to the resolutions of the Basel Convention 1

Assets	Weight
First, the assets do not take the risk. - Money - Liabilities of the government and the central bank's local currency - Other liabilities from OCDE countries and their central banks - Enhanced liabilities cash collateral or guarantees from governments OCDE	Zero
Second: Medium risk assets - Liabilities of the local public sector institutions (except for the central government) - Liabilities of licensed banks in the OCDE countries or guaranteed loans by these countries. - Liabilities of international and regional development banks - Liabilities of public sector institutions in the OCDE governments or guaranteed loans by them - Liabilities or guaranteed loans from banks outside the OCDE countries with less than one year maturity - Loans fully referred real-estates for the purpose of housing and leasing	0-50% according to the authority evaluation 20% 20% 20% 20% 50%

Assets	Weight
Third, high-risk assets - liabilities of the private sector - Liabilities of banks outside the OCDE countries with maturity of more than year. - Liabilities of the central governments of non OCDE countries (unless they are in local currency) - Liabilities of public sector companies - Fixed-assets such as buildings and machinery - Real estate and other investments - Capital instruments issued by other banks - Other assets.	100%

3.6. Hypotheses Testing

This section includes a detailed presentation of the financial and statistical analysis of the results of the study in order to identify the capital adequacy of the Jordanian banking system during the period (2000-2013), and these results will be presented according the sequence of study hypotheses.

3.7. Testing the Data Accuracy of study

To evaluate the multi-correlation problem, the Variance Inflation Factor (VIF) and Tolerance values were used as shown the following table:

Table 2. Results of the ((VIF and (Tolerance) suitability test of independent variables

Independent Variable	FIV	Tolerance Value
Net cash flow from operations	3.375	0.296
Net cash flow from investment operations	1.791	0.558
Net cash flow from financing operations	1.797	0.556
Net credit facilities	19.961	0.050
Market value of the shares	7.347	0.136
Earnings per share	3.357	0.298
Return on total assets	1.602	0.624
Return on shareholders' equity	1.555	0.643
Number of shares subscribed	8.694	0.115

Table 2 shows that all (VIF) values for all the independent variables were less than 10 except for variable of (net of credit facilities) as it hit (19.961) and (Tolerance) values were greater than (0.05) for all variables; which indicates a lack of multi correlation between variables, and the acceptance of the variation of every variable of the independent variables of the study.

Table 3. Distribution of natural test variables study

| Variables | Klomgorov-Smirnov | | | |
	Positive trend	Negative trend	Z-value	Statistical significance
Capital (total assets)	0.370	0.307-	4.997	0.000
Operations net cash flow	0.261	0.226-	3.515	0.000
Investment operations net cash flow	0.235	0.270-	3.642	0.000
Financing operations net cash flow	0.300	0.236-	4.043	0.000
Facilities net credit	0.340	0.303-	4.587	0.000
Share market value	0.401	0.348-	5.406	0.000
Returns per share	0.428	0.370-	5.779	0.000
Total assets return	0.091	0.110-	1.487	0.024
shareholders' equity returns	0.066	0.095-	1.288	0.073
Number of shares subscribed	0.267	0.203-	3.606	0.000

Table 3 shows that the level of significance is less than 5% for all the study variables except for the (return on equity) variable, which confirms that the data distribution is not a normal distribution.
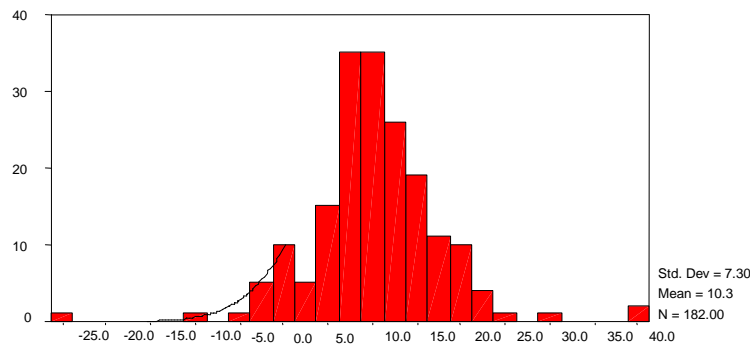

Figure 2. Shareholders' equity returns

Hypotheses Testing:

The first hypothesis: There is a statistically significant relationship between capital adequacy and liquidity of the Jordanian banking system. To test this hypothesis, the correlation coefficients between the capital adequacy (the total assets), and liquidity (net cash flow from operations, net cash flow from investment operations, net cash flow from financing operations). The multiple regression analysis was used to find out the relationship between the capital and liquidity of the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000-2013) as shown in the tables below.

Table 4. The correlation coefficients between the capital and liquidity

Independent variable	Correlation coefficient	Statistical significance
Net cash flow from operations	**0.570	0.00
Net cash flow from investment operations	-**0.528	0.00
Net cash flow from financing operations	-0.044	0.554

Table 3 shows that:

- The correlation coefficient value between the capital adequacy (total assets) and net cash flow from operations in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000 to 2013) is (0.570) with (0.00) statistical significance, a positive value and significant with a strong correlation.

- The correlation coefficient value between the capital adequacy (total assets) and net cash flow from investment operations in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000 - 2013) is (0.528-) with (0.00) statistical significance ,a negative and significant with a strong correlation, but with a negative trend.

- The correlation coefficient value between the capital adequacy (total assets) and net cash flow from financing operations in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000- 2013) is (0.044-) with (.554)statistical significance, a negative value but statistically insignificant.

Table 5. Results of simple regression analysis (Multiple Regression) of the relationship between capital adequacy and net cash flow from operation

Independent variable	t-value	t- S. sig. value	Beta value	R-value	R² value	f-value	f- s. Sig value	Hypothesis result.
Net cash flow from operations	7.095	0.000	0.590					
Net cash flow from investment operations	-3.010	0.003	-0.215	0.662	0.438	46.244	0.00	admission
Net cash flow from financing operations	3.813	0.000	0.267					

The dependent variable: The Capital (total assets):

Table 5 shows that there is a statistically significant relationship between capital adequacy (total assets) and liquidity (net cash flow from operations, net cash flow from investment operations, net cash flow from financing operations). The value of (f) is (46.244) with (0.00) statistical significance. The value of (R), which represents the total correlation model is (0.662), and the value (R2), the impact strength of the independent variable (liquidity) on the independent variable (capital adequacy) (0.438); which means that the first hypothesis is true and thus accepted.

The second Hypothesis: There is a statistically significant relationship between capital adequacy of the Jordanian banking system and the credit risk during the period (2000-2013).

To test this hypothesis, the correlation coefficients between the capital adequacy (total assets) and the credit risk (net credit facilities) were calculated. The simple regression analysis (Linear Regression) was used to find out the relationship between the capital adequacy of Jordanian commercial banks listed on the Amman Stock Exchange and credit risk during the time period (2000-2013), as shown by the table below.

Table 6. Correlation coefficients between capital adequacy and credit risk

Independent variable	The correlation coefficient	Statistical significance of
Net credit facilities	0.995**	0.00

Table 6 shows that the correlation coefficient value between the capital adequacy (total assets) and credit risk (net credit facilities) for the Jordanian commercial banks listed on the Amman Stock Exchange during the time period (2000 to 2013) is (0.995) with (0.00) statistical significance which is positive and high value and it statistically indicates a very highly strong correlation.

Table 7. Results of simple regression analysis (linear Regression) of the relationship between capital and credit risk

Independent variable	t- value	t- S. sig. value	Beta value	R- value	R^2 value	f-value	f- s. Sig value	Hypothesis result.
Net credit facilities	129.482	0.00	2.362	0.995	0.989	16765.702	0.00	accepted

The Dependent variable: capital (total assets)

Table 7 shows that there is a statistically significant relationship between capital adequacy and represented by (total assets) and credit risks (net credit facilities) in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000-2013). The value of (f) is (16765.702) with a (0.00) statistical significance. The value of (R), which represents the total correlation model is (0.995), and the value (R2), which represents the impact strength of the independent variable (credit risk) on the (capital adequacy) is (0.989). Therefore, the second hypothesis of the study is accepted.

The third hypothesis: There is a statistically significant relationship between capital adequacy and risk capital on the Jordanian banking system during the period (2000-2013).

To test this hypothesis, the correlation coefficients between the capital adequacy (total assets) and the risk of capital (the market value of shares, earnings per share, return on total assets, return on shareholders' rights) were calculated. The multiple regression analysis (was used to find out the relationship between capital and risk capital in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000-2013), as shown by the table below.

Table 8. Correlation coefficients between capital and risk capital

Statistical significance	Correlation coefficient	Independent variable
0.000	**0.865	Share market value
0.000	**0.433	Returns per Share
0.881	0.011	Return on total assets
0.776	-0.021	Returns on shareholders' equity

Table 8 shows that:

The correlation coefficient value between the capital adequacy (total assets) and the market value of the shares in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000-2013) is (0.865) with (0.00) statistical significance, which is positive and high and statistically significant value indicating a very strong correlation.

- The correlation coefficient between the capital adequacy (total assets) and returns per share in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000 - 2013) is (0.433), with (0.00)statistical significance , which is a positive and statistically significant value indicating a strong correlation.

- The correlation coefficient between the capital adequacy (total assets) and the returns on the total assets in the Jordanian commercial banks listed on the Amman Stock Exchange during the period (2000-2013) is (0.011) with (0.881) statistical significance, which is positive but statistically insignificant.

- The correlation coefficient between the capital adequacy (total assets) and returns on equity in the Jordanian commercial banks listed on the Amman Stock Exchange during the time period (2000 to 2013) has reached (0.021-) with (0.776) statistical significance, which is a negative and statistically insignificant.

Table 9. Analysis of the multiple regression of the correlation between capital adequacy and capital risks

Independent variable	t-value	t- S. sig. value	Beta value	R-value	R^2 value	f-value	f- s. Sig value	Hypothesis result.
Share market value	24.770	0.000	0.810	0.906	0.821	202.648	0.00	accepted
Returns per share	8.299	0.000	0.275					
Returns on total assets	-0.298	0.766	-0.012					
Returns on shareholders' equity	-1.240	0.217	-0.049					

Dependent variable: capital (total assets)

Table 9 shows that there is a statistically significant relationship between capital adequacy (total assets) and the capital risk (the market value of shares, returns per share, returns on total assets, and returns on equity). The value of (f) is (202.648) with (0.00) statistical significance. The value of (R), which represents the total correlation model, is (0.906), and the value of (R2), which represents the impact strength of the independent variable (risk capital) on the dependent variable (capital adequacy), is (0.821). Therefore, the third hypothesis of the study is accepted.

4. Summary of Results

Through the analysis of the previous results, the researcher came up with the following results:

1. There is a statistically significant relationship between the capital adequacy (total assets), and liquidity (net cash flow from operations, net cash flow from investment operations, net cash flow from financing operations).

2. There is a statistically significant relationship between capital adequacy (total assets) and credit risk, (net credit facilities) in the Jordanian commercial banks listed on the Amman Stock Exchange for the period (2000-2013).

3. There is a statistically significant relationship between capital adequacy (total assets) and the capital risk (the market value of shares, earnings per share, return on total assets, return on equity).

4. There is a statistically significant relationship between capital adequacy (total assets) and investments in the securities portfolio (the number of shares subscribed) in the Jordanian commercial banks listed on the Amman Stock Exchange for the period (2000-2013).

5. Conclusions and recommendations

Depending on the study findings, the researcher recommends the following:

1. The commercial banks should increase their strategic planning and management capacity to take advantage of any rise in the capital in order to increase profits.

2. The development of market and operational risk assessment methods in order to be included in the calculation of capital adequacy ratio of commercial banks.

3. Conducting further research and studies pertaining to capital adequacy of the Jordanian commercial banks.

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