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The Impact of Off-Balance Sheet Activities (OBS) on the Banking Risk and Revenue Growth for Jordanian Commercial Banks Listed on the Amman Stock Exchange (ASE)

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Abstract:
This study examines the impact of Off-Balance Sheet Activities (OBS) on the banking risk and revenue growth for Jordanian commercial banks. This study relied on a sample of 13 commercial banks, listed on the Amman Stock Exchange (ASE) during the period 2010-2014.This study is determining the association between off-balance Sheet Activities (OBS) as an independent variable and banking risk (namely; the credit risk, capital adequacy risk, market risk, liquidity risk, leverage risk), and revenue growth as a dependent variables . For testing the hypotheses of the study, the researchers used the descriptive analysis and the regression analysis.The results of the study provides an evidence that there is a significant association between the Off-Balance Sheet Activities and the capital adequacy risks, market risks, liquidity risks and revenue growth, that the relationships are negative for capital adequacy risk, and positive for market risk, liquidity risk and revenue growth. No significant association was evidenced between the Off-Balance Sheet Activities and credit risk and leverage risk.
Keywords: Off-Balance Sheet Activities (OBS), Banking Risks, Revenue Growth, Jordanian Commercial Banks

1. Introduction

The banking environment is considered, due to the specificity of its business, one the most fundamental pillars of economy, which includes employing of depositors' money and investing of shareholders' funds, as it in the presence off-balance sheet activities, it forms potential links and potential obligations. The banks have to pursue prudent policies to deal with the banking risks through a balanced and an efficient style, by following a balanced policy in the developing and managing of their assets, to develop banking products of high-quality, to provide transformation instruments that are required to address these risks in case they may occur, thus ensuring the security of depositors and shareholders' equity, down to maximizing a bank added value.

Buckova, 2012, P 18, pointed out that the off-balance sheet activities have become very important part of the banking business, and that the nominal value of the off-balance sheet activities had several times exceeded the value of assets in the budget, at a time the growing importance of these activities increase. So it has become urgent to manage the risks emerging from these activities, most important of which is the management of the credit risk.

However, (Obeidan 0.2006, pp. 36.39) pointed out that off-balance sheet activities are of two groups, the first includes the letters of credit, the commercial paper accepted and the guarantees, while the second includes obligations related to the interest rates, the prices of currency exchange and the commitments to extend credit. The commercial banks usually provide such services to their customers who are known for the safety of their financial positions, and sometimes this is done in exchange for some financial guarantees such as the mortgage on some of the assets. The increase in these activities also contributes to the increase of commercial banks technical competence; however the uncontrolled expansion causes deterioration to the efficiency of macro-economic resources of these banks. In this regard (Hillis and Habil, 2014, p. 133) has made it clear that there are several reasons to the measurement of banking efficiency represented by their vital role in achieving the objectives of financial institutions, due to the increasing competition in the financial market, the rapid transformation in the financial market and its direction towards globalization. Measuring the banking efficiency enable distinguishing banks that have the ability to survive and prosper and those that may have problems with the growing competitiveness.

A study by (Nachane and Ghosh, 2007, pp 3,8,9) pointed that one of the common assumptions related to the massive growth in activities outside the budget, that the banks used these activities as a way to increase profits, so as to compensate the decline in the income activities margins within budget when lending businesses, and that the large banks are capable of leading the specialized management skills, required to deal with the outcome of the off-balance sheet activities, and the ratio of the loans as well (loans to total assets) tends to be directly related to the off-balance sheet activities, and that the profitability positively affect the volume of the off-balance sheet activities.

According to the above-sated, this study comes to examine the impact of the activities outside the budget on the banking risks and on the revenue growth of the Jordanian commercial banks during the period from 2010-

2014. Specifically this study seeks to answer the following questions:

1. What is the impact of the off-balance sheet activities on the Jordanian commercial banks credit risks?
2. What is the impact of the off-balance sheet activities on the Jordanian commercial banks leverage risks?
3. What is the impact of the off-balance sheet activities on the Jordanian commercial banks market risks?
4. What is the impact of the off-balance sheet activities on the Jordanian commercial banks capital adequacy risks?
5. What is the impact of the off-balance sheet activities on the Jordanian commercial banks liquidity risks?
6. What is the impact of the off-balance sheet activities on the Jordanian commercial banks revenue growth risks?

2. The importance of the study:

The importance of the study arises from the importance of off-balance sheet activities as a source of revenue worthwhile, but many of the risks affecting the continuity and growth of banks may occur. It also helps the banks managements, particularly the risk management at a bank and the related parties, to promote good management in this field. It also helps to determining the impact of off-balance sheet activities in causing banking risks that they may not be easy to address by the banks, and therefore the focusing on these activities, and on the ways to cope with the hazards involved to maintain the pace of banking activity and to increase its growth.

3. Theoretical Framework and Previous Studies

- Theoretical Framework

The investment environment is characterized by is broad interest in both return and risk functions. As the banking sector is an essential part of the investment environment, it should take appropriate measures to reduce the risks and find the optimum balance between the global risk and the return of the activities within and outside the balance sheet. Therefore the risks are considered important and essential factor in the banking environment and widely watched by the banks managements, where the operating profit should develop within an acceptable level of risk that may be positively reflected on the ability of the banks growth and sustainability.

In this regard, the off-balance sheet activities include two types of potential links and liabilities; the first type comprises of credit links and liabilities, which are credit, guarantees, time acceptances and withdrawals, and direct and unexploited facilities of credit ceilings, while the second type, comprises of contractual obligations, which is contracts of constructional projects, leases operating contracts, purchase of fixed assets contracts, other purchasing contracts (annual reports of the banks study sample, various years from 2010 to 2014).

However, (Tahar Mohammadayn, 2013, p. 53) pointed out that the banking industry is playing an important role in the countries' economies, and that the developments taking place in various walks of life led to the emergence of new financial products, thus to major complications in this industry, resulting in being exposed to many risks, that prompted the attention and high lightened policies and procedures that achieve banking safety, thus emerged the principle of banking risks management, that enjoyed the attention of the central banks, the regulatory authorities, and the managements of the commercial banks. The risk assessment and proper management are the key factors in the success and prosperity of banks to achieve their goals. Therefore the correct understanding to manage these risks, self-evaluation and its control procedures, become representing the first line of defense in protecting the rights of depositors, creditors, and shareholders alike, In Addition has become one of the main pillars to achieve banking safety and strengthen the financial and banking stability.

A study by (Alsabbari and Hadi 0.2012, pp. 199 202) pointed out that commercial banks usually bother dealing with off-balance sheet items or the so-called financial derivatives on a large scale, because of the absence or weakness in international controls, as initially the financial derivatives originated as instruments hedging of risks, but they evolved to become an important investment tool if properly employed by the economic establishments.

Also a study by (Aktan, et, all, 2013, p 118) noted that off-balance sheet activities, such as guarantees, commitments and derivatives sometimes become major sources of bank revenue, besides supplying of high profits, as through them banks can avoid regulatory costs or taxes, because the reserve requirements and insurance premiums on deposits are not imposed on the off-balance sheet activities. However, these activities may involve risks such as market risk, operational risk, the risk of credit that may affect the solvency of the bank and its liquidity. The significant growth derivatives in commercial banks can also be explained by increasing the interest rate, the credit, and the exposure to the risks of foreign currency that are facing the banks in the domestic and international markets; the derivatives as well, provide a way to hedge against these risks without having to make extensive changes in the balance sheet.

Moreover, a study by (Dhouibi and Mamoghli, 2009 111) demonstrated three types of risks, they are the liquidity risk , that is measured by the proportion of liquid assets to the total loans; the financial leverage risk, that is measured by the book value ratio of equity to the total assets, also I used another measure for estimating risk leverage, that is the total deposits held by the banks to the book value of the banks' shares, as this measure is used to explain the leverage risks of banks in terms of deposit guarantee, a rate considered more important to meet the leverage risk and credit risk, that is measured by loan loss provisions to the total loans; in addition to the use of alternative measures of credit risk, that is the proportion of loan loss reserves to the total loans, and the ratio of non-performing loans to the total loans, where the latter figure is an indicator of the quality of assets in the banks.

As (Al Taiyb and Shahatit 0.2011, p. 358) pointed out that the capital adequacy ratio reflects the capacity and efficiency of commercial banks in measuring, directing and controlling the risks they face, and is useful for banking services pricing, for maximizing the banking returns operations, for developing the necessary policies for the prevention of risks and actions, and ultimately those banks have become obliged to provide sufficient capital to cover facing the potential risks that they may be exposed to.

Previous studies:

A study by (Obeidan 2006, pp. 35-71) examined the effect off-balance sheet activities on the efficiency of the Kuwaiti commercial banks. So as to achieve that the study focused on the quantitative analysis of the off-balance sheet activities provisions impact on the performance efficiency of the Kuwaiti commercial banks. This required definition and measuring of four indicators of economic efficiency associated with the performance of the Kuwaiti commercial banks represented by the technical competence, the efficient targeting of resources, and the efficiency of scale, the overall economic efficiency; the results of this study reveals that the increasing in the banks' off-balance sheet activities contributes to the increasing of technical competence; and the expansion of the uncontrolled provisions causes deterioration to the overall economic efficiency of the commercial banks resources.

A study by (Abdel Malik, 2006) examined the impact of the off- balance sheet provisions on the profitability of the commercial banks of Jordan during the period (1990-2002). As this study aimed identifying the role played by the off- balance sheet provisions on the profitability and the interest margin in the Jordanian commercial banks during the period (1990-2002). the results of descriptive analysis showed a growing interest in commercial banks outside the budget items during the study period, where the Jordanian commercial banks, investment more than doubled in these items to more than 4 times during the study period, noting a decline in value in 2001 because of international circumstances and local in the region in that year, the study results showed no relationship between the off balance sheet items and the profitability of the commercial banks during the study period, and the existence of a positive relationship between the interest rate margin and the off balance sheet items, which shows that the off-balance sheet provisions should be considered as specific determinants interest rate margin.

A study by (Alsabbari and Hadi 0.2012, pp. 199-249) examined the impact of the off -balance sheet provisions (guarantees) on the financial crisis and the importance of accountability for it "applied study on a sample of private banks affiliated to the stock exchange market". For the data, the study relied on personal interviews with people of experience and competence, and the questionnaire was used to solicit the views of the four categories, they are (academics, financial intermediaries, financial managers in the banks sample of the study , and auditors in some audit firms).The results of the study showed that not employing of the fair value approach on the off-balance sheet provisions (ie, the value of the loan guarantees) and not following the applications or accounting policies in the process of measuring these provisions (guarantees) will lead to a lack of confidence and decline in the profitability of the banks. The results indicated as well that the non-disciplined expansion of banks in off-balance sheet provisions (guarantees), has resulted negatives, particularly with regard to the efficient performance of the management off–balance sheet activities, which is required to address the financial crisis; in addition, following the international accounting standards by financial institutions (banks) related to the disclosure of off-balance sheet provisions (guarantees), is of an extreme importance in making the published financial statements enjoy high credibility, and has the ability to predict future decisions, and has a role in risk distributing.

A study by (Buckova, 2012, PP. 18-24) aimed to focus on off-balance activities of the Czech banking sector and the management of credit risks arising from these activities, specifically the credit risk evaluations of the off-balance sheet provisions of the Czech banking sector. In order to achieve this end the expected loss of the off-balance sheet activities was calculated through the probability of non-fulfilling the obligation by the peer (the probability of default), where it was calculated by relying on the method of accumulation. The study was conducted on the Komercní banka. It is one of the largest commercial banks in the Czech Republic. The results of the evaluation showed that the Komercní banka has appropriate combination of the off-balance sheet activities along with a good variety of specific economic sectors; in addition to that the Bank has dedicated to establish commitments outside of the budget which is sufficient to meet the potential of the activities losses outside the budget, as the study found that credit risk arising from off balance sheet items well managed in the Czech banking sector.

A study by (Khasawneh et.al, 2012, PP. 30-42) mainly aimed to study the determinants of the off-balance sheet activities in the Jordanian banking system, during the period (1999-2010), by using the longitudinal data analysis (Panel analysis), where the researchers used a deployment logistical model of Mansfield (1961), considering the off-balance sheet activities as a real financial innovations that follow the chronological spread curve, as the model was modified to include the specific regulatory and non-regulatory factors of the bank, in addition to macroeconomic factors, that were represented by the real domestic product and the real volume of international trade.

The study included all the banks in the Jordanian baking system; they are thirteen banks excluding the Islamic banks and the central bank. The results of study indicated also that the off-balance sheet activities are real financial activities that increase by the lapse of time, in addition to another result that the levying of regulatory tax is not strong enough to identify the off-balance sheet activities by the Jordanian banks. The results also showed that the off- balance sheet provisions follow the business cycle, so the decision of using it depends on the economic conditions, and that the off-balance sheet activities follow the large scale economy and require higher qualifications. This is often available in large banks, in addition to that the increase in loans and the increase in the off-balance sheet activities lead to increased risks.

The study of (Elian, 2013, PP. 46-68) aimed to determine the relationship between the off-balance sheet activities and a number of determinants of the banking sector in the Gulf Cooperation Council (GCC). These determinants are represented by a set of banking variables such as (the market power, the size of bank, the proportion of borrowing, profitability), and another set of non-banking variables such as (capital adequacy ratio, real GDP and macroeconomic policies).The results of the study showed that the variables related to the bank have a significant role and impact increasing the off-balance sheet activities, while the organizational variables represented by the capital adequacy seemed less important in regard to the off-balance sheet provisions; in terms of macroeconomic variables, the results showed that the increase in real GDP growth does not necessarily cause an increase in off-balance sheet activities.

(Aktan et.al, 2013, PP. 117-132) attempted in his study to examine the effect of the off -balance sheet provisions on the performance of the commercial banks listed on the Istanbul Stock Exchange (ISE). The study employed four standards to measure the performance of the banks, they are: the risk, profitability, leverage ratio financial and liquidity. The results showed that both the bank risks and the foreign exchange rates positively associated with the off-balance sheet activities, indicating that the off- balance sheet activities increase the vulnerability of risks to the banks in Turkey, especially foreign currency exchange risk. This positive relationship may be as a warning to banks to speculate by employing the off-balance sheet activities for transactions in the market. The study also found that the off-balance sheet activities have a positive impact on improving the revenue the shares of the bank; in the meantime it has a negative effect on the return of equity, in addition to the lack of statistically significant differences between the off-balance activities, the financial leverage and liquidity.

The (Scopelliti, 2013, PP. 1-33) study aimed to answer, is and how the increase in the off-balance activities and credit derivatives, has led to the growth of loans over rate during the past few years, with a concentration on the United States. In order to achieve the purpose of the study, the researcher used the panel fixed-effect estimation analysis and the panel VAR analysis by using financial quarterly data for 39 commercial banks for the period (1998-2008). The results of the study showed that the higher credit risk of the off-balance has negative effect on bank lending growth rate, due to the real and potential losses related to the off-balance sheet activities. Despite, the results showed that there is a positive impact on the short-term bank short- time loans, such as the commercial and the industrial loans, while the negative impact of is stronger for long-term loans such as real estate mortgage or real estate loans.

The study of (Teixeira, 2013) as well by focused on the determinants of the off-balance sheet activities outside Exported by the European banks during the period (2001-2011), and for all the 27 EU banks in addition to Switzerland for its importance as a financial stock market, focusing as well , in particular, on risk management and liquidity desired by banks. The results of the study showed that there was no link between the off -balance sheet provisions and the risk management strategy, as well as there is no increase in the liquidity with the issuance of off -balance sheet provisions, and it is considered the main motive for the issuance of off- balance sheet provisions by the European banks. This has made the researcher adopt Schuetz (2011) proposal represented by that the activities associated with the improving of performance, and complied with the requirements of regulatory capital strategies that are the main motives for European banks to include these financing activities.

The aim of (Ziadeh-Mikati, 2012, PP. 1-61) study is to ascertain the extent of US commercial banks engagement in the off-balance sheet activities and the potential impact of this engagement in the Bank's exposure to risk and failure. In the study, the researcher relied on data from the quarterly financial reports of the US commercial banks during the period (2001- 2010). And due to the heterogeneity of the off-balance sheet activities, the study distinguished between credit alternatives, derivatives, contracts and credit derivatives, and studied the effect of each alternative on the banks' risks (credit risk, liquidity risk, financial insolvency risk). As regard to credit alternatives it enhances the loan portfolio of the Bank and the performance of the bank, and adds more pressure on the liquidity of the bank. Whereas for the derivative contracts, whether used for hedging or for speculative purposes was found to have a higher exposure for banks risk, especially small-size banks, also found that derivatives contracts have statistical effect on the large-size banks exposed to risks.

The aim of the study (Kraft, 2015, PP. 641-674) is to evaluate the classification process of the companies exporting credit ratings, where the study focused on the amendments quality and quantity disclosed in the financial statements prepared in accordance with the generally accepted accounting principles (US GAAP) and the amendments of the companies credit rating according to Moody system for credit rating. The study results showed a large and frequent difference between the figures shown in the disclosed reports and the figures adjusted according to Moody system. For example, because of the ascending amendments of the interest and debt expenses that is attributed to the off - balance sheet debts, the amended coverage of cash flow appeared, according to the generally accepted accounting standards, in proportion to the debt by 27%, less than 8% of the corresponding ratio; on the other hand, the adjusted leverage rates showed, according to generally accepted accounting standards, 70% higher than the ratios. The results also showed that the modifications ratings are, according to Moody system, statistically associated in a high level of composition margins and credit spread. In general the study results showed that the quantitative modification of the financial statements figures and the quality of credit ratings in accordance with Moody system will enable the companies to better control the risk of default in payment.

Through researching the previous studies, the two researchers believe that this study is distinct from previous studies in many respects, as the current result deals with five possible banking risks (credit risks, leverage risk, market risk, the risk of capital adequacy, and liquidity risk) that might encounter banks; it also used natural Algorithms to the volume of the off-balance sheet activities to determine its impact on the banking risk and revenue growth of the Jordanian commercial Jordan banks during the period (2010-2014), which is considered as a relatively recent period. It is worthily noting that the revenue growth variable that is measured by (the net interest and commissions, which represent the revenue of banks core activity) which is regarded as one of the most important variables concerned with banks, because of its close association with the off-balance sheet activities outside the budget. This was not addressed by previous studies.

4. Methodology of the Study

- The study method: This study used the descriptive and analytical approach, so as to measure the impact of the independent variable (off-balance sheet activities) on the dependent variables (banking risk and revenue growth).
- The Study Population and the Study Sample: The study population consisted of all Jordanian commercial banks its shares listed in the Amman Stock Market; they numbered thirteen banks at the end of 2014. This study will test the data of the entire population of the study, so that the study sample comprises of all the study population. The study period covers five years from 2010 to 2014.
- The Study Models: In order to achieve the objectives of the study, and based upon what has been stated in many previous studies such as a study by (Buckova, 2012), a study by (Obeidan, 2006), a study by (Aktan, et, all, 2013), a study by (Dhouibi and Mamoghli, 2009), a study by (Al Taiyeb and Shahatit 0.2011), and other studies, following measurement models have been developed for this study:

$NPLS.R_{i,t} = \beta_0 + \beta_1 OBS_{i,t} + \varepsilon_t$ ………………………….…….. (1)

$LEV.R_{i,t} = \beta_0 + \beta_1 OBS_{i,t} + \varepsilon_t$ ………………………….. (2)

$MAR.R_{i,t} = \beta_0 + \beta_1 OBS_{i,t} + \varepsilon_t$ ………………….………… (3)

$CA.R_{i,t} = \beta_0 + \beta_1 OBS_{i,t} + \varepsilon_t$ ………………………… … (4)

$LIQ.R_{i,t} = \beta_0 + \beta_1 OBS_{i,t} + \varepsilon_t$ …………………………… (5)

$REV.G_{i,t} = \beta_0 + \beta_1 OBS_{i,t} + \varepsilon_t$ ………………………….. (6)

Hypotheses: the study hypotheses can be formulated as follows:

H01: There is no statistically significant effect for off-balance sheet activities on the credit risks of the Jordanian commercial banks.

H02: There is no statistically significant effect for off-balance sheet activities on the leverage risks of the Jordanian commercial banks.

H03: There is no statistically significant effect for off-balance sheet activities on the market risks of the Jordanian market risks for commercial banks.

H04: There is no statistically significant effect for off-balance sheet activities on the capital adequacy risks of the Jordanian market risks for commercial banks.

H05: There is no statistically significant effect for off-balance sheet activities on the liquidity risks of the Jordanian commercial banks.

H06: There is no statistically significant effect for off-balance sheet activities on the revenue growth risks of the Jordanian commercial banks.

Measuring Variables of the Study:

First: The Independent Variable

- The off-balance sheet activities (OBS): This study will measure the off-balance sheet activities by calculating the natural logarithm of these activities, where the value of these activities was obtained from the annual reports of the study sample –The Jordanian commercial banks.

Second: The Dependent Variables

- The Credit risk: Nonperforming Loans to total Loans Risk (NPLS.R): It is measured by calculating non-

performing loans to total loans. This ratio was obtained for each bank, from the annual reports of the banks sample of the study. This is calculated as follows:
The ratio of non-performing loans to total loans=non-performing loans÷ Total loans.

- The Leverage risk (LEV.R): It is measured by the ratio of book value equity to total assets (based on a study by (Dhouibi and Mamoghli, 2009, P 111), This ratio is calculated for each bank from the financial data published in the Jordanian shareholding public companies guide published by Amman Stock Exchange. It is calculated as follows:
  Leverage risk = book value of shares / total assets
- Market risk (MAR.R): It is measured by dividing the cash values of the financial assets for trading on the total deposits; this ratio for each bank was obtained from the figures published in the Jordanian Shareholding Public Companies Guide of Amman Stock Exchange. It is calculated as follows:
  Market risk = Cash + Financial assets held for trading / total deposits
- Capital Adequacy Risk (CA.R): This ratio for each bank was obtained from the annual reports of the banks sample of the study. This ratio measures the capital adequecy held by the bank to face the risks that might be exposed to. It is calculated as follows (the Central Bank of Jordan, Instructions No. (39/2008): Capital Adequacy According to Basel II dated 24/03/2008, The Society Banks in Jordan, The Study of Jordanian banking Sector Evolution, 2013, p. 55):
  Capital adequacy ratio = regulatory capital of the bank / (credit risks + market risks)
- Liquidity Risk (LIQ.R): This ratio for each bank was obtained from the ratios published in the Jordanian Shareholding Public Companies Guide of Amman Stock Exchange. It is calculated as follows:
  Liquidity ratio = (Cash and balances with the Central Bank + balances with banks and financial institutions + deposits with banks and financial institutions + financial assets held for trading) ÷ (Customers' deposits + deposits of banks and financial institutions).
- Revenues Growth (REV.G): This variable expresses the net interest and commission income, which constitute the banks' main revenue, the values of these revenues for each bank, were obtained from the financial data published in the Jordanian Shareholding Public Companies Guide of Amman Stock Exchange. For the purposes of this study, natural Algorithms of the size of these revenues will be extracted.

5. Results of the statistical analysis of this study variable:

Results of the off-balance sheet activities are not new activities on the Jordanian commercial banks, but an increase in the value of these activities is noticed from year to year, which means that there is an existence of the effects caused by these activities on various business activities of the banks.

Table (1): Off-balance sheet total items and growth ratio during the study period.

Year	Off-balance items	Growth %
2010	15315195817	**-**
2011	15956629971	**4.18**
2012	16945778783	**6.19**
2013	18120040528	**6.92**
2014	19092010350	**5.36**
2010-2014		**24.66**

Source: Prepared by the two researches according to the study data and the results of statistics analysis

Table (1) above, shows growing concern over the off-balance sheet activities, and that there is continuous annual increase in the value of these activities, as there is an increase by 24.66% in the off-balance sheet activities, during the study period in 2014, compared with 2010.This is indicating the importance of the off-balance sheet activities for the Jordanian commercial banks, and the important role played by these activities in the banking business.

Table (2): Descriptive statistics of the study dependent variables

	REV. G	LIQ. R	CAR. R	MAR. R	LEV. R	NPLS. R
Minimum	7.0500	0.1680	0.1313	0.1680	0.0960	**0.0300**
Maximum	8.4600	0.5000	0.2158	0.4710	0.1910	**0.1258**
Mean	7.7670	0.3194	0.1703	0.3145	0.1414	**0.0760**
Std. Dev.	0.3029	0.0775	0.0193	0.0727	0.0227	**0.0230**
Skewness	-0.082	0.307	0.173	0.251	-0.051	**0.216**
Kurtosis	0.107	-0.431	-0.228	-0.333	-0.568	**-0.635**
Shapiro-Wilk	0.970	0.978	0.965	0.979	0.982	**0.977**
Probability	0.114	0.315	0.064	0.350	0.449	**0.267**

Source: Prepared by the two researches according to the study data and the results of statistics analysis

The above Table shows the descriptive statistics of the study dependent variables during the period from 2010 to 2014, and therefore following can be seen:

- Credit risk: The average credit risk (non-performing loans to total loans) reached to 0.0760, it is, as regard to the nature of the commercial banks activities, an acceptable ratio (it is worth noting that the standard> = ratio of 10%, according to the annual report of the Jordan Kuwait Bank 0.2011, p. 37).
- Leverage Risk: The average leverage risk reached to 0.1414, it is a ratio exceeding the standard rate, this shows that the Jordanian commercial banks are running the leverage so well that keeps the book value of the shares covered a rate of 0.1425 of its total assets (it is worth noting that the standard ratio> = 6 %, according to the annual report of Jordan Kuwait Bank 0.2011, p. 37).
- Market risk: The average market risks reached to 0.3145, this indicates that the cash and financial assets for trading cover a ratio of 0.3172 of the size of deposits at the Jordanian commercial banks.
- Capital adequacy risk: The average capital adequacy risks reached to 0.1703, a ratio exceeding the 8% that is the minimum requirements by the Central Bank of Jordan, and 12% the minimum requirements by the Basel Committee; this shows that the Jordanian commercial banks enjoy a ratio capital adequacy that keeps the banks immune of economic crises.
- Liquidity risk: The average liquidity risks is 0.3194, this means that the cash at the commercial banks of Jordan and their balances with the Central Bank, and the banks and other banking institutions, and their deposits with the banks and banking institutions and their financial assets for trading purposes cover a ratio of 0.3194 from the customers', the banks' and the banking institutions' deposits. This indicator reflects the size of liquidity at the Jordanian commercial banks, and helps to avoid a lot of implications caused by the lack of liquidity.
- Revenue growth: It is noted that the lowest value of revenue during the study period is (7.05) and the largest value is (8.46), while the arithmetic average was (7.77) and standard deviation was (0.30). This reflects a disparity and a large difference in the size of the Jordanian commercial banks' revenues.
- Also, the least value of risk is for credit risk by ratio of (3.00%) ,and the greatest value of risks is for liquidity risk by ratio of (50%). Where the higher arithmetic average of liquidity risks was (31.94%) and the lowest average arithmetic was for the credit risks by (7.6%). As regard to the standard deviation it was the least standard deviation of the capital adequacy risks by ratio of (1.93%) and the highest standard deviation was to liquidity risks by ratio of (7.75%).

Results of the Study Hypotheses Test:

In order to test the study hypotheses, a statistical analysis was done by using the regression analysis, for the purpose of demonstrating the extent of the off-balance activities impact on the bank risks and revenue growth in the Jordanian commercial banks.

- The First Hypothesis Test

H01: There is a statistically significant impact of the off-balance credit risks in the Jordanian commercial banks.

Table (3): Coefficient test results for the impact of the off-balance sheet on the credit risks

R= 0.049	**Adjusted R² = -0.013**	**F value = 0.152**	**Sig. = 0.698**
	Coefficient	t	**p-value**
Constant	0.094	2.048	**0.045**
OBS	-0.002	-0.390	**0.698**
*** Significant at 0.05**			

Source: Prepared by the two researches according to the study data and the results of statistics analysis

Depending on the results of regression analysis, Table (3) above shows that there is no correlation between the off-balance sheet activities and the credit risks, as the value of the correlation coefficient (R = 0.049) and the coefficient of determination (Adjusted R2 = -0.013) are at the level of significance ($\alpha \leq 0.05$) . The Table also indicates that there is no effect for the off-balance sheet activities on credit risks where (F = 0.152, Sig =

0.698, β = -0.002). Therefore we accept the hypothesis of the study (the null hypothesis), which states that "no statistically significant activities impact for off-balance sheet on the credit risks in the Jordanian commercial banks."

-The Second Hypothesis Test

H02: There is no statistically significant impact for the off-balance sheet activities on the leverage risks of the Jordanian commercial banks' risks.

Table (4): Coefficient test results for the impact of the off-balance sheet on the leverage risks

R= 0.036	Adjusted R^2 = -0.015	F value = 0.084	Sig. = 0.773
	Coefficient	t	p-value
Constant	0.154	3.409	**0.001**
OBS	-0.002	-0.289	**0.773**
*** Significant at 0.05**			

Source: Prepared by the two researches according to the study data and the results of statistics analysis

Depending on the results of regression analysis, Table (4) above shows that there is no correlation between the off-balance sheet activities and the leverage risks as the value of the correlation coefficient is (R = 0.036) and the coefficient of determination (Adjusted R2 = -0.015) at the level of significance ($\alpha \leq 0.05$). The Table also indicates that there is no impact for the off-balance sheet activities on leverage risk where (F = 0.084, Sig = 0.773, β = -0.002), and therefore accept the hypothesis of the study (the null hypothesis), which states that "no significant statistical impact for the off-balance sheet activities on the leverage risks of the Jordanian commercial Banks.

- The Third Hypothesis Test

H03: There is no statistically significant impact of the off-balance sheet activities on the Jordanian market risks of the commercial banks.

Table (5): Coefficient test results for the impact of the off-balance sheet on the market risks

R= 0.603	Adjusted R^2 = 0.353	F value = 35.937	Sig. = 0.000
	Coefficient (β)	t	p-value
Constant	-0.378	-3.264	**0.002**
OBS	0.080	5.995	**0.000**
*** Significant at 0.05**			

Source: Prepared by the two researches according to the study data and the results of statistics analysis

Depending on the results of regression analysis, Table (5) above shows that there is a relationship between the off-balance sheet activities and market risks, as the value of the correlation coefficient is(R = 0.603). The variation in the market risks can be explained by the value of the off- balance sheet items, where the coefficient of determination (Adjusted R2 = 0.353) is at the level of significance ($\alpha \leq 0.05$). Accordingly and as (F = 35.937, Sig = 0.000, β = 0.080), we reject the study hypothesis (null hypothesis) and accept the alternative hypothesis, which states that "no impact statistically significant of the off-balance sheet activities on the market risks of the Jordanian commercial banks." As it is seen from the value (β = 0.080) the relationship direction is reversal, that is whenever the value of the off -balance sheet items is greater, the market risk is greater.

- The Fourth Hypothesis Test:

H04: There is a statistically significant impact of the off-balance activities on capital adequacy risks in the Jordanian commercial banks.

Table (6): Coefficient test results for the impact of the off-balance sheet on the capital adequacy risks

R= 0.296	Adjusted R^2 = 0.073	F value = 6.049	Sig. = 0.017
	Coefficient	t	p-value
Constant	0.261	7.076	**0.000**
OBS	-0.011	-2.459	**0.017**
*** Significant at 0.05**			

Source: Prepared by the two researches according to the study data and the results of statistics analysis

Depending on the results of regression analysis, Table (6) above indicates that there is a relationship between the off-balance sheet activities and the risk of capital adequacy, where the value of the correlation coefficient (R = 0.296); the variation in capital adequacy risks can be explained by the value of the off balance sheet items where the coefficient (Adjusted R2 = 0.073) at the level of statistically significance ($\alpha \leq 0.05$). Accordingly, and where (F = 6.049, Sig = 0.017, β = -0.011), we reject the study hypothesis (null hypothesis) and accept the alternative hypothesis, which states that "no statistically significant impact for the off-balance sheet activities on the capital adequacy of the Jordanian commercial banks. It can be seen through the value (β = -0.011) that the relationship is inversely one, that is the more the value of the off balance sheet items is, the lower the capital adequacy risks.

- Fifth Hypothesis Test

H05: There is no statistically significant impact for the off-balance sheet activities on liquidity risks in the Jordanian commercial banks.

Table (7): Coefficient test results for the impact of the off-balance sheet on the liquidity risks

R= 0.579	Adjusted R^2 = 0.324	F value = 31.726	Sig. = 0.000
	Coefficient	t	**p-value**
Constant	-0.389	-3.086	**0.003**
OBS	0.082	5.633	**0.000**
*** Significant at 0.05**			

Source: Prepared by the two researches according to the study data and the results of statistics analysis

Depending on the results of regression analysis, Table (7) above indicates that there is a relationship between the off-balance sheet activities and liquidity risks, as the value of the correlation coefficient is (R = 0.579). The variation in liquidity risks can be explained by the value of off- balance sheet items, where the coefficient of determination (Adjusted R2 = 0.324) is at the level of significance ($\alpha \leq 0.05$). Accordingly, and as (F = 31.726, Sig = 0.000, β = 0.082) we reject the study hypothesis (null hypothesis) and accept the alternative hypothesis, which states "there is statistically significant impact for the off-balance sheet activities on the liquidity risks of the Jordanian commercial banks." As it is seen through the value (β = 0.082) that the direction of the relationship is positive ie, the greater the value of the off- balance sheet items is, the higher the liquidity risk is.

- Sixth Hypothesis Test

H06: There is no statistically significant impact for the off-balance sheet activities on the direction of revenue growth of the Jordanian commercial banks.

Table (8):Results of the Regression Test impact of the off-balance sheet items on the revenue growth

R= 0.548	Adjusted R^2 = 0.290	F value = 27.105	Sig. = 0.000
	Coefficient	t	**p-value**
Constant	5.145	10.191	**0.000**
OBS	0.304	5.206	**0.000**
*** Significant at 0.05**			

Source: Prepared by the two researches according to the study data and the results of statistics analysis

Depending on the results of regression analysis, Table (8) above indicates that there is a relationship between the off-balance sheet activities and the revenue growth, as the value of the correlation coefficient is (R = 0.548).The variation in the direction of revenue growth can be explained through the value of the off-balance sheet items, as the coefficient of determination (Adjusted R2 = 0.290) at the level of significance is ($\alpha \leq 0.05$). Accordingly, and as (F = 27.105, Sig = 0.000, β = 0.304) we reject the study hypothesis (null hypothesis) and accept the alternative hypothesis, which states that "there is statistically significant impact for the off-balance activities on the revenue growth in the Jordanian commercial banks." As it is seen through the value (β = 0.304) that the direction of the relationship is directly reversal, ie, the greater the value of off balance sheet items is, the higher revenue is.

Table(9):Summary of the study hypothesis test results;

No.	Hypothesis	Result	Impact
1	H01:No statistically significant impact for the off -balance sheet activities on the credit risks of the Jordanian commercial banks	1	**No**
2	H02:No statistically significant impact for the off -balance sheet activities on the leverage risks of the Jordanian commercial banks	2	**No**
3	H03: No statistically significant impact for the off -balance sheet activities on the market risks of the Jordanian commercial banks.	3	**Positive**
4	H04:No statistically significant impact for the off -balance sheet activities on the capital adequacy risks of the Jordanian commercial banks	4	**Negative**
5	H05:No statistically significant impact for the off -balance sheet activities on the liquidity risks of the Jordanian commercial banks	5	**Positive**
6	H06:No statistically significant impact for the off -balance sheet activities on the revenue risks of the Jordanian commercial banks	6	**Positive**

Source: Prepared by the two researches according to the study data and the results of statistics analysis

7. The Study Results:

This study aimed to test the impact of the off-balance sheet activities on the banking risks of the commercial banks of Jordan during the period 2010-2014, the results showed growing interest in the off-balance sheet activities, for there is an annual continues, which indicates the importance of the off-balance sheet activities as regard to the Jordanian commercial banks and the important role played by these activities in the banking sector.

As it has been revealed, the credit risks, the leverage risks, and the capital adequacy risks at the Jordanian commercial banks, express acceptable risks in light of these risks evaluation criteria. As regard to the nature of the commercial banks' activities. This indicates that the Jordanian commercial banks enjoy secure solvency from economic crisis.

As for the market risks, the cash and financial assets for trading cover a ratio of 31.72% of the deposits volume available in the Jordanian commercial banks. The liquidity risks scale also reflects a size of liquidity at the Jordanian commercial banks, that helps in avoiding a lot of implications caused due the lack of liquidity. As for the revenue growth, there is a large disparities difference in the size of the Jordanian commercial banks' revenues.

The results of the regression models study analysis also showed, that the Jordanian commercial banks off-balance sheet activities have negative impacts of a statistical significance on capital adequacy, and that these activities have a positive impact of statistical significance on the market risks, the liquidity risks and on the revenue growth of the Jordanian commercial banks. Finally, the study found that there was no trace for the off-balance sheet activities on the credit risks and on the leverage risks.

8. The Study Recommendations:

Based on the above-mentioned, most important recommendations of the study could be summarized as follows:

1. To rationalize the decisions related to the off-balance sheet activities, in order to ensure the stability of the financial system as a whole and the stability of the banking system in particular.
2. The Jordanian commercial banks have to continuo training and continue educating the staff of the credit departments, in order to be able to analyze the off-balance sheet activities and estimate the level of associated risks that would enhances the durability of the banking sector.
3. 3.To conduct further studies searching for other risks that the off-balance sheet activities might have impact on them.

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