

The Effect of Applying Hedge Accounting in Reducing Future Financial Risks in Jordanian Commercial Banks

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Abstract

The Effect of Applying Hedge Accounting in Reducing Future Financial Risks in Jordanian Commercial Banks

The study aimed to identify the effect of applying hedge accounting on reducing the future financial risks of the Jordanian commercial banks by using financial ratios to find a practical method of calculating the hedge with its three categories and to address the future financial risks of commercial banks in Jordan.

The researchers used both the descriptive and analytical methods based on the financial statements and reports of the Jordanian commercial banks for the period (2012-2017), in addition of using financial indicators. The study community included the published financial statements of the Jordanian commercial banks before applying hedge accounting and after in accordance with the amendments to IFRS Standard No. 9, as well as the banks listed in the Amman Exchange Market for the period of study. The sample of the study included all Jordanian commercial banks that disclosed the application of hedge accounting in their annual financial statements.

The study concluded that there is a strong correlation between cash flow hedges and reducing the financial risks of Jordanian commercial banks after the application of hedge accounting for the period (2012-2017), and that there is a strong correlation between fair value hedges and reducing the financial risks.

The fair value hedges have an explanatory capacity to reduce the financial risk by 27.4%. This has been derived from the R2 value. There is a weak correlation between the net investments in foreign currencies and the financial risks. The study recommended the importance of maintaining the use of hedge accounting to achieve fairness and honest representation in the final financial statements to the benefit of internal and external users.

Keywords: hedge accounting, credit risk

1. Introduction

Hedge accounting is one of the financial instruments used by companies to avoid future financial risks. The misuse of the financial instruments has led to the creation of a gap between financial liquidity and real liquidity of enterprises, resulting to the failure of enterprises. Many industrial Jordanian companies suffered setbacks due to exposure to future financial risks. To protect the companies from loss, the management of the companies seek to mitigate or avoid financial risks in the near future. They seek ways and solutions for any impediment affecting the continuity of their business and avoid suffering losses that may affect their financial position in conjunction with the realization of any profits from their business.

The types of financial risks to companies have recently varied. New types have emerged that have not appeared before. This brought the attention of risks and for the need of developing protection and hedging ways to avoid such different risks, in addition to increasing the information related to the policies of risk management of the companies and the measurement of fair value of the financial instruments to make the use of derivatives more transparent (Panaretou et al 2013, 2). The financial derivatives led to the emergence an accounting approach known as hedge accounting (Matar, 2009, 205) to address the risk of changes of interest and exchange rates.

1.1 The Problem of the Study

The problem of the Study is the measurement and accounting disclosure ways to apply hedge accounting and the hedged item to mitigate the future financial risks resulting from late recognition of unrealized profits and loss in the Jordanian commercial banks. This is considered a weakness leads to unexpected losses. This impact is linked

to the expectations; it is likely to have positive or negative impacts on the financial statements and reports. Despite the importance of hedging to prevent risks faced by the Jordanian commercial banks, but their impact is still unclear, in particular its impact on reducing the financial investment risks and profitability ratio. Therefore, the problem of the study starts in the answers of the following questions:

Q 1: What is the impact of hedge accounting on reducing future risks?

Q 2: Is there any impact of applying hedge accounting on reducing the risk of exchange rate fluctuations?

Q 3: Is there an impact of the profitability indicators due to applying hedge accounting?

1.2 The Importance of the Study

The importance of this scientific study stems from the lack of studies and researches on recent accounting intellectual framework, that is hedge accounting and its criteria related for its activities in reducing the financial risks. It is an attempt to enrich the Arabic library with an important subject to pave the way for further researches in hedge accounting area and its impact on future investment risks. The importance of this practical study in terms of the practical aspect related to the measurement of hedge accounting on an important sector in the Jordanian economy, that is the Jordanian commercial banking sector. The Study also helps Jordanian commercial banks in future over several years to know the direct and indirect impact of hedge accounting on the results of their business and financial performance, and assist them in rational decision-making process.

1.3 Objectives

The Study aims to achieve the following objectives:

- 1) Identify the extent to which hedge accounting is applied in Jordanian commercial banks.
- 2) Demonstrates the impact of applying hedge accounting on mitigating future financial risks.
- 3) Demonstrates the impact of applying hedge accounting on the profit indicators using the financial ratios in the Jordanian commercial banks.

1.4 Study Model

Figure (1) below represents the model of this study, which consists of the independent variable, represented by the hedge accounting and the dependent variable represented in how to reduce the financial risks. The researchers will rely on the financial statements of Jordanian commercial banks published on the Amman Exchange and the application of the following variables:

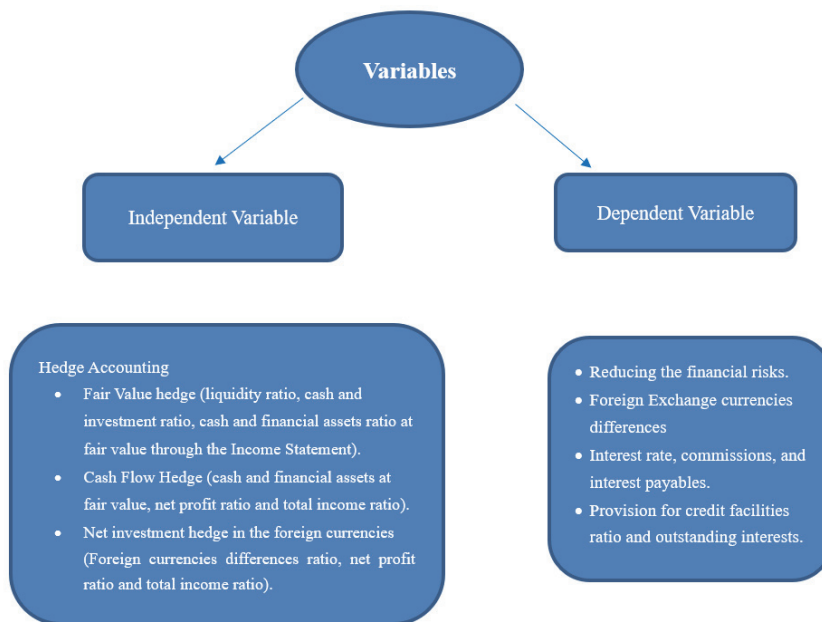


Figure (1). the Study Model prepared by the researchers and based on previous studies

1.5 Definitions and Procedural Terms

- Hedge Accounting: it is a method of risk management carried out by using one or more of financial derivatives or other hedge instruments to match the changes in the fair value or cash flow of an asset, financial obligation or any future transaction.
- Hedge Instrument: it is a financial derivative or financial asset or underived financial obligation in case of hedging against exchange rate risks. The financial instrument is called a hedging instrument if the fair value or cash flows are equivalent to or correspond to changes in the fair value or cash flows of the hedged item.
- Hedged Item: it is an asset, obligation, affirmed contract or net investment in foreign transaction that may expose the enterprise to the risks of changes in fair value or future cash flows associated (Nassar and Hmeidat 2016, 595).
- Financial Risks: it is a term for any risk associated with any form of investment. Usually called risks associated with investment (Investment Risks) and the risks associated with funding are called business risks.

1.6 Study Limits

Spatial boundaries: Jordanian Commercial Banks

Time Limits: for the years 2012 to 2017.

1.7 Study Parameters/ Determinants

- a) This study is limited to the Jordanian commercial banks listed on the Amman financial market, which are (13) banks for the years 2012 to 2017.
- b) There is no specific model, method, or equation to measure the three types of hedging. Hedging ratios are usually taken in the Jordanian commercial banks based on personal estimates that vary from a bank to another and according the bank management experience.
- c) IFRS 9 has not specified certain instructions for testing the effectiveness of hedge and specific mechanism to calculate all forms of hedging.

2. Theoretical Framework and Previous Studies

2.1 Section I: Hedge Accounting

2.1.1 Introduction

The banking sector faces many future challenges that negatively affect its efficiency, effectiveness and future financial performance, which require precaution and make the right decisions to confront it (Rizk, 2010, 20:21) and to manage risks effectively and efficiently, as well as to provide ways and means and mechanisms of measuring hedging. The challenges include relying on personal judgement in the preparation of the final financial statement, especially risk assessment, its financial measurement and hedging. The challenges also include objectiveness in accounting measurement process, ways variance and accounting policies. These challenges will affect the reduction of future financial risks as international standards have recently focused on finding ways to limit the process of due diligence accounting and focus on finding ways to provide high-quality financial statements appropriate to the users. Among and most important ways, for example, the issuance of fair value standards, hedge accounting and how they are applied to reduce manipulation, thus fraud and misrepresentation in the financial statement will be less.

The International Standards Board (IASB) has made several amendments in the use of hedging accounting because of significant difficulties in its application and its defaults to assist the use of hedging accounting in fair value to counter interest rate and future exchange rate risks. These amendments also seek to provide illustrative guidance for the principles that formed the basis of hedging accounting (IFRS, 2015). According to IFRS 9, hedging mechanism and its measurement methods will be published later in standard 9 to enforce the rules and regulations to control the use of financial instruments and hedge accounting. Since hedging is the focus of this study, it is essential to identify its concept, its key elements and how it can be used to reduce the risks faced by sectors of a financial nature, particularly the banking sector, as an economic engine that constantly strives to achieve excellence in its business and reach financial stability.

2.1.2 Concept of Hedging Accounting

The origin of Hedge naming is due to conservatism concept. This is what the accounting practice established, i.e. precaution for future by considering all expected losses and not to record potential realizations until they are actually realized (Shabani, 2014, 37). Hedging is synonymous with the term protection, which is the means by

which the business enterprise can manage the financial risks to overcome systemic risks, market risk and mitigate their future impacts to the lowest level (Khadoumah, 2015, 13).

Hedge accounting: it is a means of managing risks that uses one financial derivative or more of hedging instruments to avoid changes in fair value or cash flows of an asset, financial commitment or future operations (Nassar and Hmeidat, 2013, 596).

Other definition of hedging accounting: it is an instrument of risk management uses a financial instrument to hedge against risks associated with some assets, liabilities or other financial operations (Ja'rat, 2014, 109).

Therefore, we must distinguish between hedging instruments and hedged item, as they are substantial elements of hedging accounting (Hmeidat and Khaddash, 2013, 375).

Hedging instrument: It is a financial derivative, financial asset or certain obligation to change derivative on hedging against exchange rate risks.

Hedged Item: it is either an asset or fixed and net obligation for investment in a foreign transaction that may expose the enterprise to changes risks in the fair value of future cash flows associated.

The researchers believe that in order to achieve matching principle, the hedging instrument is linked to the hedged item, so as the changes in the fair value or cash flows in the hedging instrument will be recognized in the same period of recognition the changes in the hedged item.

2.1.3 Types of Hedging

The types of hedging are:

1- Fair Value Hedge:

Fair Value Hedge aims to limit changes in the fair value of an asset or an obligation in the financial position statement and has an impact on the income statement. Fair value hedge is a transaction to cover the compliance risks that may cause imbalance in the income statement. It affects both profits and losses (Azzi, 204, 199). Fair value hedge is used to balance the changes in the fair value of hedged items with fixed price or fixed interest rates (al-Dughaji and al-Ekele, 2013, 55). For example, the change in the fair value of fixed rate bonds resulting from the changes in the interest rates in the market (Nour, et al, 2013, 183).

Hedging instrument is measured at fair value and recognized in the change in the fair value of the hedging instrument and the hedged item in the income statement. In this case hedging will not be effective 100% (Nassar and Hmeidat, 2013, 597).

2- Cash Flow Hedging:

Cash flow Hedging aims to reduce exposure to future cash flows changes arising from risks associated with a particular recognized asset or obligation, such as future interest payments on a prospective sale or purchase transaction that has an impact on profit or loss. It is a hedge against the risks of cash flow fluctuations. The item could be a hedge for future cash flows linked to an obligation or asset, or the potential future cash flows, such as the expectation of a return from future sales in a foreign currency (Ghazwi, 2011, 34). This type of hedging is used to offset cash flows for hedged items due to changes in commodity prices, interest and foreign exchange rates (al-Dughaji and al-Ekele, 2013, 57).

Hedging is effective if it covers 80% to 125% of the change in the value of the hedged item. The profits and losses of effective hedging resulting from the change in the hedging tool will be recognized within the equity in the changes in equity statement, while the ineffective hedging will be recognized in the income statement (Nassar and Hmeidat, 2013, 600).

3- Net Investment Hedging:

Net Investment Hedging is the changes in foreign exchange rates that arise for the company from its net investments in foreign affiliates or subsidiaries, resulting from transferring the foreign affiliate or branches in the consolidated financial statement into the parent enterprise currency report (Khazali, 2012, 39). The net investment hedge in the foreign currency is accounted as a cash flow hedge as changes in the fair value of the hedging instrument are reflected within equity in a separate item if the hedging was effective. In case of net investment is eliminated, changes are transferred to the income statement (Nassar and Hmeidat, 2013, 602).

2.1.4 Conditions of Hedging Accounting:

Hedging accounting is limited to three conditions relating to the determination, documentation, measurement and

effective hedging, as follows:

- 1) The existence of documentation and identification of the hedging relation, objective and strategy of risk management within the enterprise to carry out a hedging process; such as hedging instruments, hedging transactions and risks to which they are hedged.
- 2) The existence of relationship to effective hedging through:
 - A. The expectation in equivalent variation in the fair value or changes in the cash flows attributed to hedged risks.
 - B. The possibility to measure the effectiveness of hedging in a reliable manner.
 - C. Hedging is assessed on continuous basis. The effectiveness also determined retroactively during the financial reporting periods in which the hedging transaction took place.
- 3) The existence of high probability of cash flow hedging for the forecasting transactions that affect profits and losses (Mirza and Holt, 2011, 323-324).

These conditions were set because hedge accounting changes the rules of recognition to ensure prevention of misuse, non-manipulation in income or profits practices. When these conditions are followed, then hedging accounting will be used and applied (al-Dughaji and Ekele, 2013, 55).

The researcher believes that these conditions are the basis of hedging to know when the hedging accounting is initiated. This is what meant by Standard (39) to determine the principles of recognition the information related to the financial derivatives in the financial statements.

2.1.5 Hedging Techniques

There are two hedging techniques, namely: Static Hedging and Dynamic Hedging.

The first technique (Static Hedging) is the technique taken into account at the time of decision-making only without any follow-up to the transaction until the maturity date, date of disposal of an asset or financial instrument, or future contracts; i.e. without following up any changes arise to the market prices. This leads to loss due to the changes of market prices and low possibility to avoid risks (al-Arighi, 2012, 162).

The Second technique (Dynamic Hedging): is the hedging that is taken into account at time of decision-making with modification in the hedged items to reduce the market risks resulting from changes in prices of cash market instrument and hedging instrument over time in order to offset the cash position exposed to risks. Here it is necessary to the hedger has to follow up the changes (Dush, 2014, 677).

The researchers believe that each technique has its advantages and negativity in the first technique can contribute to risk reduction in the in the presence of future factors and indicators of exposure and high risk. Its negative aspect is that if the expectations are contrary to the indicators on which they are based. For example, at fixing interest rate. The second technique (Dynamic Hedging) is considered a technique corresponding to the market situation and creates a direct correlation between the modifications of the hedged items and the market situation.

2.1.6 Objectives of Hedging Account in the Bank

The objectives are: (Butrus 2015, 46)

1. The disclosure of the risks to which the bank is exposed.
2. The procedures followed by the bank management to reduce such risks.
3. Disclosure of applying hedge accounting strategies and their effectiveness in reducing risks faced by the bank.
4. Disclosure of the impact of procedures practiced by the bank management in the financial statements.
5. Hedge accounting ensures that gains and losses on hedged items and hedging instruments are recognized for the same period, and prevents earnings volatility that is not economically justified (Dinh and Seitz, 2016, 2).

2.1.7 Disclosure of Hedging Types

Disclosure is always linked with low uncertainty of unconfirmed information. The purpose of disclosure is to increase detailed qualitative and quantitative information pertinent to hedging (Steven, 2015, 3). Figure (2) below shows the disclosure associated with hedging types:

Researchers believe that the main objective is to disclose in details hedge accounting, highlighting the affected items in the financial statements and reports, in addition to reflect the use of hedging accounting in the financial statements by profits or losses.

2.1.8 The Use of financial Derivatives for Hedging Purposes

The derivatives is a new method to reduce risks and helps in risk management. Financial derivatives can be used to cover the credit risks, foreign exchange rate risks and interest rates risks (Sahlian, et al 2013, 98).

A. Credit Risks:

It is a risk that focuses on loss and future. Credit risks mainly created by the borrower, because his non-compliance and inability to repay the principal and its interests. It is represented in the losses incurred by the bank due to default of repayment the principal (Rahalya and Bin Amara 2017, 153-154). IFRS 7 requires the banks to provide quantitative and qualitative disclosures of these risks to assist users of financial statements to understand the effects, amount and timing of these risks, and uncertainties about future cash flows (IFRS 2015, 296).

2.2 Previous Studies

- Arabic Studies
- Foreign Studies
- Arabic Studies

Shraydeh Study (2016) titled “Use of future contract for hedging”. Applied study on the investment companies listed in the Iraq Stock Exchange.

The study aimed to clarify the theoretical concepts of futures contracts and how to use them for hedging purposes. The study was conducted on a sample of the (6) investment companies listed in the Iraq Stock Exchange. The researcher used measures and financial instruments for this purpose. The study concluded that it is possible to use future contract as hedging instruments against the changes that may emerge on the interest rate in financial markets. Therefore, the companies involved in the research seek to adopt hedging strategy against interest rates changes. The most important recommendations are the need for companies to adopt value-forecasting methods; such as statistical, mathematical methods and researches. Companies may adopt special software for hedging strategy.

Butrus Study (2015) title “Measuring the impact of accounting on hedging strategies on the quality of financial statements (Applied study on commercial banks).

This study aimed to measure the different effects of applying hedging strategies using financial engineering tools-derivatives-on the quality of the financial statements, prior and after the application of hedging during the period (2003-2010). The researcher used Miller model and the average of eight financial ratios in his measurement. The study was conducted on a sample consisting of six commercial Egyptian banks. The study concluded that the different types of risk involved has an impact on the quality of profits and cash flow quality, thus financial statement quality. The most important recommendations are the use of hedging by using future and swap contracts because of their capability to reduce risk, and increase the financial statements quality, in addition to the adoption of options contracts and credit derivatives strategies.

Abdul Hay Study, 2014, titled “Use of financial engineering Techniques in risk management in the Islamic banks”.

This study aimed to measure the different effects of applying hedging strategies using financial engineering tools-derivatives-on the quality of the financial statements, prior and after the application of hedging during the period (2003-2010). The researcher used Miller model and the average of eight financial ratios in his measurement. The study was conducted on a sample consisting of six commercial Egyptian banks. The study concluded that the different types of risk involved has an impact on the quality of profits and cash flow quality, thus financial statement quality. The most important recommendations are the use of hedging by using future contracts and swaps due to their ability to reduce risks and increasing the financial statements quality in addition to the adoption of options contracts and credit derivatives.

2.2.1 Foreign Studies

-**Altuntas, et al. (2017)** aimed to extend and test the predictions of Frost, Scharfstein, and Stein (1993) of the relationship between hedging and cash flows, to find the direct and indirect influence between hedging of derivatives and the value of the company, and the direct and indirect influence between cash flows and the value of the company, By using a sample of life insurance companies. An analysis of their data was performed when the Company hedges and when it does not hedge. A result is a negative relationship between the cash flow variability and the volatility of the asset. Besides that the hedge affects the value of the company through the mechanism of cash flow volatility, the most important recommendations are to resort to the use of hedging; because it mitigates the negative effects of fluctuations cash flows. A study by of Butros (2015) measured the different effects of

applying hedging strategies using financial engineering tools - financial derivatives - on the quality of the financial statements before applying the hedge and after application of hedging for the years 2003-2010. The researcher used Miller model and average eight financial ratios. The study was conducted on a sample of 6 commercial banks in Egypt. The results of the study were found to have an effect on the quality of the profit and the quality of the cash flows. Which is reflected on the quality of the financial statements. One of the most important recommendations is that hedging using futures and swaps is used to reduce risk and raise the quality of financial statements while adopting options and credit derivatives strategies.

-Pernell (2017) at all, The Hazards of Expert Control: Chief Risk Officers and Risky Derivatives

At the turn of the century, regulators introduced policies to control bank risk-taking. Many banks appointed chief risk officers (CROs), yet bank holdings of new, complex, and untested financial derivatives subsequently soared. Why did banks expand use of new derivatives? We suggest that CROs encouraged the rise of new derivatives in two ways. First; we build on institutional arguments about the expert construction of compliance, suggesting that risk experts arrived with an agenda of maximizing risk-adjusted returns, which led them to favor the derivatives. Secondarily we build on moral licensing arguments to suggest that bank appointment of CROs induced "organizational licensing" leading trading-desk managers to reduce policing of their own risk behavior. We further argue that CEOs and fund managers bolstered or restrained derivatives use depending on their financial interests. We predict that CEOs favored new derivatives when their compensation rewarded risk-taking, but that both CEOs and fund managers opposed new derivatives when they held large illiquid stakes in banks. We test these predictions using data on derivatives holding of 157 large banks between 1995 and 2010.

- Zakaria (2017) THE USE OF FINANCIAL DERIVATIVES IN MEASURING BANK RISK MANAGEMENT EFFICIENCY: A DATA ENVELOPMENT ANALYSIS APPROACH, p209.

As risk-taking is an essential part of the banking industry, it is important for banks to practice efficient risk management to ensure survival in uncertain climates, such as the Asian financial Crisis of 1997. Due to banking operations being specifically affected by fluctuation in interest rates, which cause financial imbalances, banks are now required to put in place an effective management structure that incorporates risk management efficiency measures that help mitigate the wide range of risks they face. Such efficient risk management measures are paramount in building robust and sound financial systems. This study provides a new approach for measuring risk management efficiency levels in banks by offering a more detailed insight into the data envelopment analysis (DEA) approach based on the usage of a financial risk instrument. Comparatively the results of this study confirm the finding by Hahn (2008) indicating that Japanese banks are superior in terms of managerial efficiency when compared to European and US banks. Risk management efficiency measurement contributes to the strengthening of the efficiency levels of banking risk management and the achievement of sound risk management in banking operations, thus underscoring the impact of derivative usage on banking risk management efficiency.

Keffala (2017: Are Derivatives Implicated in the Recent Financial Crisis? Evidence from Banks in Emerging Countries

This work aims to inspect the common debate about the implication of derivative instruments in amplifying the last financial crisis. To reach this goal, the study chooses a sample of banks entirely from emerging countries- over the whole period 2003-2011-in which we examine the impact of derivatives simultaneously on performance, risk and stability during the ordinary period "the pre-crisis period", 2003-2006, and the unstable period "the crisis period", 2007-2011. The regressions are estimated by generalized methods of moments (GMM) as developed by Blundell and Bond (1998). The major conclusion reveals that only swaps can be considered as implicated in the intensification of the last financial crisis. Therefore the rest derivatives instrument cannot be responsible in the amplification of the recent financial crisis. Indeed, the widespread idea accusing all derivatives to be in part responsible of the intensification of the last financial crisis should be revised.

- Banerjee (2016), At All, Effects of derivatives usage and financial statement items on capital market risk measures of Bank stocks: evidence from INDIA

This paper examines the impact of off-balance sheet derivatives usage by banks combined with financial statement items on their capital market risk measures. Financial markets liberalization policies in the 1990s, led to a surge in investment in Indian banks' stocks, and therefore, understanding capital market risk is of critical interest to domestic and foreign investors in bank stocks, as to bank manager. Using panel data analysis of publicly listed private and public sector banks, our findings indicate that bank size, core capital-to-risk adjusted asset ratio, and interest spread of banks are significantly related to total risk of bank stocks. The market risk of bank stocks is significantly positively related to the amount of derivatives usage and to asset ratio of banks. Also, the firm-specific risk component of bank stocks is significantly by the volume of total asset, interest spread, and their core capital

–to – asset ratio. The interest rate exposure of bank stocks is significantly related to core capital –to –asset ratio, and the interest spread The off-balance sheet derivatives exposure, bank size, and the core capital to risk adjusted asset ratios are seen to have a significant effect on the overall systematic risk.

3. Practical Aspect

3.1 Method and Procedures

3.1.1 Methodology

The study consists of both the theoretical and the second practical aspects. The theoretical aspect discussed concepts related to hedging accounting through reviewing previous literature related to the subject of this research. The researcher believes that it is necessary to know the conclusions of such studies.

The researchers depend on analytical test approach in the practical aspect of this study. It aims to find out the impact of applying hedge accounting on reducing the financial risks of commercial banks. To achieve this goal, researchers have collected the data needed to measure the variables of this study through several sources. The most important resources are the financial statements published in the annual financial reports of Jordanian commercial banks, consisting of the study sample for the period 2012-2017. They are deemed a key element in measuring the impact of hedging accounting on the annual financial statements and reports. To achieve this objective, the hypotheses of this study were formulated in such a way to answer the main questions.

3.1.2 Community of the Study

The study is limited to (13) Jordanian commercial banks listed in Amman Stock Exchange during 2012 – 2017. The Islamic banks have been excluded because of their different financial, funding and accounting rules, laws, and activities used and adopted in their financial statements.

3.1.3 Study Sample

As mentioned herein above, the study community includes all the Jordanian commercial banks listed in Amman Stock Exchange, totaling 13 banks. These banks disclosed their application of Hedging accounting to ensure the quality of the results.

3.1.4 Data Collection Methods

The study is based on the analysis of the published financial statements of the banks subject to this study covering the period from 2012 to 2017, using the preliminary data obtained from the following sources:

- 1) The annual financial reports of Jordanian commercial banks.
- 2) The annual report of Amman Stock Exchange for the period 2012 – 2017.
- 3) Internet (websites of Jordanian commercial banks and Amman Stock Exchange).

3.1.5 Study Model

To achieve the objectives of this study and purpose, the following variables were adopted as shown herein below:

Independent Variable: Hedging accounting that has been measured by financial indicators.

Dependent Variable: The credit risk of closing share at the end of each year (2012-2017) as it reflects the actual reality of the financial statements.

3.1.6 Study Tools

The model used in this study includes the following factors, which can be measured through this study as follows:

3.1.7 Statistical Methods Used

The methods used in this study were carried out by SPSS program. The followings were used:

- 1) Descriptive analysis including arithmetic averages and standard deviations
- 2) Multiple regression analysis for testing the main hypothesis.
- 3) Simple regression analysis

4. Results Presentation

Table (1). Fair Value Hedging

Bank	Description	2012	2013	2014	2015	2016	2017
Jordan Banking Sector	Liquidity Ratio	0.39	0.36	0.36	0.35	0.33	0.31
	Cash + Investments/ total deposits	69.39	70.90	69.26	66.28	62.11	59.31
	Cash + financial assets at fair value from the Income Statement/ total deposits	0.39	0.36	0.36	0.35	0.33	0.31

Table (2). Cash Flow Hedging

Bank	Description	2012	2013	2014	2015	2016	2017
Jordan Banking Sector	Cash + financial assets at fair value from the Income statement/ total deposits (one time)	0.31	0.33	0.35	0.36	0.36	1.37
	Net profit/ Total Income	0.39	0.48	0.42	0.38	0.38	0.35
	Net income/ total assets	0.048	0.040	0.040	0.040	0.041	0.041

Table (3). Net Investment Hedging in foreign Operations

Bank	Description	2012	2013	2014	2015	2016	2017
Jordan Banking Sector	Translation differences foreign currencies (losses)/ net profit	-0.033	0.010	-0.185	-0.381	-0.484	-0.421
	Credit facilities allocation/ credit facilities	7.93	7.36	7.10	7.65	8.34	6.39
	Foreign currency profits/ net profits	0.144	0.072	0.076	0.10	0.098	0.081

Table (4). Financial Risks

Bank	Description	2012	2013	2014	2015	2016	2017
Jordan Banking Sector	Net interests and commissions / total income	84.65	85.61	84.94	84.67	85.82	86.13
	Credit interests/ net facilities	10.34	11.13	10.87	10.00	9.45	9.38
	Credit facilities and suspended interests allocation/ net facilities%	7.93	7.66	7.10	7.65	8.34	6.39

4.1 Section I: Presentation of Analysis Results

4.2 Section II: Hypotheses Testing

After collecting the financial data on the impact of applying hedging accounting on data fairness and annual financial reports in Jordanian banks for the years 2012-2017, the quantitative approach was used to study and analyze the data. The financial ratios and rates were used as a tool of analysis, which is one of the most tools used. The arithmetic averages and standard deviations of the financial elements were obtained during the study period for the purpose of descriptive analysis of the fairness variables of the financial statements and profitability ratios. The appropriate analysis was performed to answer the hypotheses of the study.

Section I: Presentation of Analysis Results

The researchers relied on multiple regression analysis to test the main hypothesis. The following table shows the results.

Table (5). Shows multiple regression coefficient values for statistical tests as follows:

Dependent Variable	R Correlation Coefficient	R2	F Calculated	Significance Level	Independent Variable	B Value	T Value	Significance Level
Reducing financial Risks	0.632	0.399	11.21	0.000	Fair value Hedging	-0.173	2.607	0.040
					Cash flow Hedging	-0.512	6.204	0.000
					Net investment in foreign currency Hedging	-0.233	3.903	0.008

Table (5) shows that we obtained the value of the table F tabulated to compare with the calculated F value. The F calculated was (11.211) is greater than its tabulated value (5.41). This indicates the existence of a statistically significant impact between the independent variables combined and the dependent variable and the significance level was less than the significance adopted, which is (0.05). Therefore, we reject the main null hypothesis and accept the alternative hypothesis (there is a statistically significant impact hedge accounting on reducing financial risks in Jordanian commercial banks). Hedge accounting has a strong link with reducing the financial risks reached (0.632). It indicates that there is a strong correlation between the hedge accounting and reduction of financial risks. Hedge accounting has an explanatory capacity to reduce financial risks (24.8%) indicated in R2 value. The results demonstrate that there is a statistically significant impact of both fair value hedge, cash flow hedging, and net investment hedging in the foreign operation on reducing the financial risks, as the level of significance of the two variables was (0.040, 0.000, 0.008) respectively.

- Sub-Hypothesis I:

HO1: there is no statistically significant impact of fair value hedging on reducing the financial risks in the Jordanian banks.

For testing this hypothesis, the researcher used the simple linear regression analysis. Table (6) shows the results.

Table (6) shows the results of simple linear regression test for the sub-hypothesis I.

Dependent Variable	R Correlation coefficient	R2	Independent Variable	B	T Tabulated	T Calculated	Sig. Level
Reducing financial risks	0.523	0.274	Fair Value Hedging	-0.230	2.365	4.087	0.005

We derived from table (6) the t tabulated value to compare it to t calculated value. It has been found the t calculated value was (4.087), higher than the t tabulated value (2.3650). This indicates that there is a statistically significant impact between the dependent and independent variables and the significance level is less than the adopted significance one (0.05). Therefore, we reject the sub-hypothesis I and accept the alternative (there is a statistically significant effect of fair value hedging on reducing financial risks in Jordanian banks). Fair value hedging is correlated with reducing financial risks strongly reached (0.523). It can be deduced that there is a strong correlation between the fair value hedging and financial risk reduction.

Fair value hedging has an explanatory capacity to reduce the financial risk by (27.4%) concluded from the R2 value and the value of expected change to the dependent variable. In the event of any change in the independent variable amounting to one unit, we conclude that from B value, amounting to (- 0.230). The result can be explained that the increase of one unit in the fair value hedging offset by a decrease of 230348 in the dependent variable as a reduction in the financial risks.

- Sub-Hypothesis II:

HO2: There is no statistically significant impact of cash flow hedging on reducing financial risk in Jordanian banks. To test the hypothesis, the researcher adopted simple linear regression analysis. Table (7) shows the results.

Table (7). The results of simple linear regression test of the second sub- hypothesis

Dependent Variable	R Correlation coefficient	R2	Independent Variable	B	T Tabulated	T Calculated	Sig. Level
Reducing financial risks	0.724	0.524	Cash flow Hedging	-14.278	2.365	6.421	0.000

We derived from table (7) the t tabulated value to compare it to t calculated value. It has been found the t calculated value was (6.421), higher than the t tabulated value (2.365). This indicates that there is a statistically significant impact between the dependent and independent variables and the significance level is less than the adopted significance one in the study (0.05). Therefore, we reject the sub-hypothesis II and accept the alternative hypothesis (there is a statistically significant effect of cash flow hedging on reducing financial risks in Jordanian banks). Cash flow hedging is correlated with reducing financial risks strongly reached (0.724). It can be deduced that there is a strong correlation between the cash flow hedging and financial risk reduction.

Cash flow hedging has an explanatory capacity to reduce the financial risk by (52.4%) concluded from the R2 value. The value of expected change to the dependent variable in the event of any change in the independent variable amounting to one unit, we conclude that from B value, amounting to (-14.278). The result can be explained that the increase of one unit in cash flow hedging offset by a decrease of (14.278) in the dependent variable as a reduction in the financial risks.

- Su-Hypothesis III:

HO3: There is no statistically significant impact of net investment in foreign operation hedging on reducing financial risk in Jordanian banks.

To test the hypothesis, the researcher adopted simple linear regression analysis. Table (8) shows the results.

Table (8). the results of simple linear regression test of sub-hypothesis III

Dependent Variable	R Correlation coefficient	R2	Independent Variable	B	T Tabulated	T Calculated	Sig. Level
Reducing financial risks	0.182	0.033	Net investment in foreign operations Hedging	-5.790	2.365	1.896	0.100

We derived from table (8) the t tabulated value to compare it to t calculated value. It has been found the t calculated value was (1.896), less than the t tabulated value (2.365). This indicates that there is no statistically significant impact between the dependent and independent variables and the significance level is higher than the adopted significance one in the study (0.05). Therefore, we reject the sub-hypothesis III (there is no statistically significant effect of net investment in foreign operations hedging on reducing financial risks in Jordanian banks). Net investment in foreign operation Hedging has weak correlation with reducing financial risks reached (0.182). It can be deduced that there is a weak correlation between net investment in foreign operations and financial risk reduction.

Net investment in foreign operations hedging has an explanatory capacity to reduce the financial risk by (3.3%) concluded from the R2 value. The researcher noticed that Jordanian commercial banks realize losses despite taking net investment in foreign currencies, but it is not enough.

5. Discussing the Results of the Study

5.1 Results of the Study

- 1) Fair value hedging is linked to the reduction of financial risk with a strong relationship (0.523). It is deduced that there is a strong correlation between fair value hedging and financial risk reduction.
- 2) The study indicated that there is a strong correlation between fair value hedging and the reduction of financial

risks of Jordanian commercial banks.

- 3) The study showed that there is a weak correlation between net investment in foreign operations hedging and reducing the financial risk. It has been found through the study that Jordanian commercial banks achieve financial losses greater than the amount of hedging in net foreign investment.
- 4) The study indicated that the calculation of the fair value for hedging accounting is not clear within the international accounting standards. It is calculated according to a mechanism or personal diligence of the external auditors in the Jordanian commercial banks.
- 5) This study also agreed with Nour et al., 2013, study. The results showed the impact of financial derivatives as hedging instruments on profits and losses and on the fairness of data, financial reports and financial indicators on the period after applying hedge accounting (i.e. after the global financial crisis occurred).

Recommendations of the Study

- 1) The researchers recommend the importance of maintaining the application of hedge accounting for fairness and honest representation in the annual financial statements and reports for the benefit of internal and external users according to the positive theory. This study agrees with the study of (Altuntas, et al. (2017).
- 2) The researchers recommend enhancing the role of financial regulators in establishing mechanisms to ensure that hedging accounting is applied scientifically and with honest representation consistent with the agency's theory.
- 3) The researchers recommend adopting a hedge accounting application in financial institutions and increasing the allocation for hedging net foreign investment in Jordanian commercial banks.
- 4) The researcher recommends the development of a mechanism to calculate the hedging within a mathematical equation detailed within the financial Reporting Standard (9). This study agreed with the study of the Shraydeh Study (2016).
- 5) The researchers recommend that the audit offices be encouraged to clarify the method of calculating the hedging when preparing the data, with a statement of the realized and unrealized gains for each hedge relationship and should be obliged to indicate the hedging calculation mechanism to raise the quality of data and the annual financial reports of Jordanian commercial banks. This study agreed the study of (Abdel Hay, 2014).
- 6) The measurement of risk management efficiency contributes to enhancing efficiency levels in banking risk management and achieving sound risk management in banking operations in Jordan. This study agreed with (Pernell study, 2017).
- 7) The researcher recommends that further studies should be conducted on the effective hedging relationships and their impact on the fairness of the financial statements and final accounts, especially in the Jordanian industrial sector.

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