

**Hedging in light of the application of IFRS 9****التحوط في ظل تطبيق معيار الإبلاغ المالي IFRS 9****Teacher Dr. Saja Alshaikhli\*****م.د. سجي أكرم عبدالرزاق الشيكلي\*****Iraqi University - College of Administration and  
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**Abstract**

The research dealt with hedging accounting in light of the application of the financial reporting standard IFRS9. Hedging came in this standard, which was an alternative to the previous financial instruments standard IAS 39. Hedging is to confront the risks that economic units may be exposed to in the instability of financial markets, and its purpose is to reduce or reducing these risks and relying on banks to distribute their risks through their adoption of financial instruments. Therefore, this research came to address the issue of hedging cash flows generated from these financial instruments in light of the application of Financial Reporting Standard 9.

The research aimed to introduce hedging, its types, the risks that are hedged, and its relationship to Financial Reporting Standard 9, by measuring current and future cash flows and hedging cash flow risks. This was done by relying on measuring these flows and their relationship to the hedging process, and the research reached the most important conclusions, which are the application of hedging in Iraqi banks is linked to the extent of their exposure to risks in light of the fluctuations of the financial markets and the surrounding environment. Hedging of financial instruments is also linked to the amount of cash flows of the asset or hedged liability and the preservation of these flows and their impact on the amount of profits and losses generated from them. As for the most important recommendations, they were represented by the necessity Studying the environment surrounding banks in light of the economic transformations surrounding the Iraqi environment to contribute to strengthening their financial tools, in addition to seeking to obtain more operating cash flows by relying on more diverse financial tools to increase obtaining profits and strengthen the financial position of the banks, the research sample.

**Keywords: Financial Reporting Standard 9, hedging, cash flows.**

## The Introduction

Hedging strategies have a very great specificity in reducing the risks to which economic units represented by banks may be exposed, and thus its impact on the entire economy, as since the repercussions of the economic crisis that has swept the world until now, there have been many reasons for the shortcomings of International Accounting Standard No. 39) And the difficulty encountered in applying it to financial instruments.

There was an urgent need to issue the international standard (IFRS 9), which included major amendments and multiple impacts that addressed the shortcomings in applying the previous standard. The three main hedge accounting models were summarized under International Financial Reporting Standard 9 into fair value hedging, investment hedging, and cash flow hedging, and this is what the research area will address. As the research came to address the application of hedge accounting in light of the application of Financial Reporting Standard 9, the focus will be on hedging cash flows, and the research is distributed according to the topics represented as follows: -

- The first section: which represents the research methodology and previous studies.
- The second section: A theoretical introduction to cash flow hedging.
- Third section: Financial Reporting Standard 9.
- Fourth topic: the applied aspect.
- Section Five: Conclusions and recommendations.

## The first topic

### Research methodology and previous studies

#### First - research methodology

According to this research, the most important paragraphs of the methodology will be presented: -

##### 1-1 Research problem:

In light of the risks facing economic units and banks in particular and the challenges they face in light of the instability of financial markets and the challenges of applying international standards, including the financial reporting standard IFRS9 and the challenges it brings, including the classification and measurement of financial instruments and the application of hedge accounting, and since it is one of the risks to which banks are exposed It is the irregularity of cash flows that it obtains as a result of the diversification of its financial instruments and the impact of this on its profits. The research problem can be defined by the following question:

- Did hedge accounting in light of the application of the financial reporting standard IFRS9 contribute to reducing cash flow risks?

##### 1-2 The importance of research:

The importance of the research comes from the fact that it dealt with the issue of hedging and its application in light of the application of the financial reporting standard IFRS9. It also focused on hedging cash flows and the importance of these flows in the process of predicting future profits.

### 1-3 Research objective

The research objectives were achieved by focusing on the following:

- 1- Discussing the financial reporting standard IFRS9, the stages of its development, and its adoption of hedge accounting during the stages of its development.
- 2- The research also aimed to introduce hedging, its types, and the risks that are hedged.
- 3- Measuring current and future cash flows by relying on equations and a mathematical formula.
- 4- Focus on hedging cash flow risks and their relationship to future profits in light of the application

Financial Reporting Standard IFRS9.

### 1-4 Research hypothesis

The research was based on a basic hypothesis:

(There is a significant relationship between the application of Financial Reporting Standard 9 and cash flow hedging).

### 1-5 Research methodology :-

The researcher relied on the deductive approach in presenting the theoretical aspect, including available books, periodicals, and websites. As for the practical aspect, the researcher adopted the inductive approach and mathematical equations were employed to determine the relationship between applying the standard and hedging for a sample of banks operating in Iraq and through field visits.

Previous studies and research contributions

#### previous studies

##### 1- Valašková & Erika 2015

(The Credit Risk and its Measurement Hedging and Monitoring)

The study examined credit risk or default risk, hedging, settlement, and other financial transactions. It also addressed default risks and the most important economic and political issues in granting borrowing.

And the internal factors of economic units and the shortcomings in loan policies/management, and the absence of precautionary limits for credit concentration and hedging limits in banks. The study concluded that reducing credit risks is not limited to the measures and monitoring carried out by the bank only, but the bank also actively seeks to control and reduce them. From it and hedge it.

##### 2- Al-Ghanimi 2018 (The extent to which financial reporting requirements for exchange rate hedging activities are met)

This study aimed to present and clarify the mechanism for financial reporting on exchange rate hedging activities. The study also aimed to prepare a framework for financial reporting on exchange rate hedging activities in accordance with the accounting systems in force in Iraq. The most important finding of the study is that there is a growing interest in the International Financial Reporting Standards Board. (IFRS) has issued a number of financial reporting standards

related to hedging financial instruments, and shows the importance of hedging activities in reducing the financial risks facing economic units.

## **The second topic**

Theoretical introduction (hedging/cash flow hedging)

This topic deals with hedging as a concept, definition, most important type and purpose

### **2-1 The concept of hedging**

When talking about hedging, we must start with the meaning of hedging in the Arabic language, as Al-Razi explained the meaning of hedging in his book Mukhtar Al-Sihah, meaning preservation, maintenance of the thing, caring for it, taking care of it, and surrounding it with a wall for protection (Al-Razi, 1986: 68).

The concept of hedging is considered one of the modern concepts that have entered the world of finance, so much so that it is difficult to find agreement or consensus on the definition. Hedging is the adoption of procedures and arrangements and the selection of contract formats that are sufficient to reduce risks to a minimum while maintaining good possibilities of return in the investment (Al-Qari, 2008: 2).

### **2-2 Definition of hedging**

Hedging is defined as the use of financial derivatives of various types to reduce the risks to which economic units may be exposed. (Al-Ali, 2005: 34). Al-Gamal also defined hedging in financial operations as an attempt to protect funds in investment operations from market fluctuations and keep them away from danger through a set of contractual procedures. (Al-Gamal, 2016: 3)

Therefore, since 1988, the International Accounting Standards Board (IASB) and the Canadian Society of Accountants have sought to use a wide range of financial tools, whether traditional or derivative, and because of the importance of these tools and in order to increase their understanding by users of financial statements, whether the financial position statement or the income and cash flow statement, it issued a set Criteria included disclosure, presentation, measurement, classification, recognition, measurement, and hedge accounting. One of the basic reasons for moving towards hedging in the first place is to reduce the potential risks facing economic units, and therefore make a timely decision in light of the hedging strategy to reduce risks (Al-Waqqad and Ahmed, 2019: 66).

### **2-3 Hedging accounting tool:-**

A 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 (Tiffin, 2010:280), and the hedged item is an asset, liability, or firm contract that may expose the economic unit to risks. Changes in fair value or related future cash flows. (Abu Nassar and Hamidat, 2018: 651).

### **2- 4 types of hedging**

There are three basic types of hedging (Al-Jaarat, 2017: 160)

1- Fair value hedging: - It is a hedge to confront changes in the fair value of a recognized financial asset or liability, or liabilities that have not yet been recognized, such as a commitment to buy or sell a financial asset at a certain price, and there is a possibility that there is a risk that its fair value will change so that it affects profits and losses.

2- Cash flow hedging: This is a hedge to confront exposure to changes in cash flows related to risks associated with an asset or liability that has been recognized in a process that is likely to occur, and therefore this change, if it occurs, will affect profits and losses.

3- Net investment hedges: Net investment hedges in foreign operations are accounted for, including hedging a cash item that is accounted for as part of the net investment.

What concerns us in this research is measuring current and future cash flows and the extent of their stability and achievement, since their stability and achievement is the hedging of the financial statement items, which are an asset (financial instrument) that has been affected by the application of the standard, and the stability and continued verification of cash flows is evidence of the hedging process for these instruments.

International organizations have called for the implementation of Financial Reporting Standard 9 since the year 2015, and the Central Bank of Iraq issued guidance regulations in the year 2019 for the purpose of implementing the Financial Reporting Standard IFRS 9, and therefore it has become necessary to apply the standard since the beginning of the year 2019.

## **The third topic**

### **A look at IFRS 9**

Over the decades, international standards have contributed to regulating the accounting of economic units, and many standards have emerged, including Financial Reporting Standard 9, which will be discussed in this section.

#### **3-1 International Financial Reporting Standard (IFRS 9): -**

The International Accounting Standards Board (IASB) is characterized by a business strategy that relies on making efforts to accept the contradictions, differences, and complexities that occur or the crises that challenge the business world. The International Accounting Standards Board (IASB) agreed with the American Financial Accounting Standards Board (FASB) seeks to improve accounting for financial instruments (Khaled, 2016: 88).

These efforts and developments occurred as a result of many demands from many parties related to the process of making improvements to the applicable standards, which were issued to ensure the development of the process of preparing financial reports to reach a high level of quality, make the financial market characterized by efficiency, and ensure the benefit to investors who rely on financial reports. It must be mentioned that the existence of the standard for the recognition and measurement of financial instruments (IAS 39) exists and is applied by companies of a financial nature, but it faces many obstacles in application, which prompted the unification of efforts between the American Financial Accounting Standards Board (FASB) and the American Financial Accounting Standards Board (FASB). International Accounting Standards (IASB), in order to issue a new standard that addresses the obstacles of the Financial Instruments Standard (IAS 39), which is the standard (IFRS 9), on November 12, 2009, to constitute the

beginning of solving the problem of recognition and measurement of financial assets. (Mohamed and Hamed, 2017: 3).

Through this, the most important provisions of the standard and my agencies will be presented: -

**First: -The goal and scope of IFRS 9**

•The aim of issuing the Financial Instruments Standard IFRS9 is to find solutions to the obstacles and difficulties that accompanied the application of the International Accounting Standard IAS39, as this standard adopted the foundations for classification and measurement of both financial assets and financial liabilities, and was accompanied by many disclosures. This standard adopted the model of losses that can be expected as an alternative to The model of losses that were achieved, and the business model of the associated entity dealt with its management on the characteristics of contractual cash flow (Al-Dulaimi, 2017: 44).

The scope of the IFRS9 standard includes both financial assets and financial liabilities, and this standard works to accommodate all items that fall under the umbrella of the international accounting standard IAS39, which includes financial instruments, measurement and recognition, as the IFRS9 standard goes beyond it to cover all of classification, measurement, recognition and hedging. . (International Arab Society of Certified Accountants, 2019: 214).

**Second: - Stages of development of the financial instruments standard IFRS 9: -**

This standard was developed as a result of the strategic plan adopted by the International Accounting Standards Board, based on a set of stages, as the Board worked on making the amendment by replacing the standard (IFRS 9) as an alternative to standard IAS 39) in a pivotal manner and as follows: -

1- The first axis: The stage of classification and measurement of financial assets and liabilities

The classification and measurement phase of financial assets and liabilities

This stage began in October 2009 and is related to the classification and measurement of financial obligations. It was followed in October 2010 by an addition related to the fair value option for financial obligations, followed by other amendments in 2011 and 2014. The measurement and classification of financial assets is determined according to the economic unit's business management model for its assets and the cash flows of these assets. Financial assets are also reclassified when there is a change in the economic unit's business management model, and the year 2015 is set as the date for applying this standard in a mandatory manner. (Evrst & Young, 2015:4).

2-The second axis: The Impairment phase

Because many institutions incurred financial losses due to the value of financial instruments, the Standards Council worked to make many amendments in accounting for the decline in the value of financial assets in the years 2011, 2013 and 2014 by designing a model to recognize value losses and determining what is the appropriate time to recognize these losses. (Khaled, 2016: 89). In this stage, the basic model for financial assets and guarantees, as well as loan obligations and all rents receivable, was redesigned, and the model of losses that were expected to occur was moved to a model of losses that actually occurred. This stage also emphasized the necessity of early recognition of impairment of assets (Ernst & Young, 2015:5).

3- The third axis: Hedge accounting phase

This stage was characterized by its work to determine what is most appropriate and related to hedge accounting with regard to classification and measurement other than what was stated in IAS 39). The new standard aimed to create simple rules for hedge accounting, by hedging many risks to reduce the operational burdens associated with hedge accounting in economic units (Ernst & Young, 2015:6).

### **3-2 Requirements for the implementation of the International Financial Reporting Standard (IFRS 9)**

The measurement of financial assets and liabilities in accordance with what is stated in IFRS 9 requires the following: -

The standard stipulated two principles for the possibility of classifying and measuring financial assets, which are: (International Financial Reporting Standards Foundation, 2014: 8)

A- The entity's business model for managing financial assets.

B- Contractual cash flow characteristics of financial assets.

It can be stated that the company's business model represents the way the facility manages its assets for the purpose of generating cash flows. As for the other basis, which is the characteristics of contractual cash flows, it is one of the important indicators for classification and measurement of the financial assets of the economic unit. The IFRS 9 standard also clarified some of the principles represented by: - (International Arab Society of Certified Public Accountants, 2019: 221): -

The goal of retaining the financial asset in the entity's business model is to obtain contractual cash flows and sell the financial assets.

- On certain dates, some cash flows are generated by the contractual terms of a financial asset that are payments of the principal amount and interest on the upcoming principal amount.

The researcher believes that maintaining a financial instrument, an asset or a liability, is associated with current and future cash flows, and this will be determined by whether the bank reserves these instruments by measuring the cash flows generated from them or not, later in the applied aspect.

### **The fourth topic**

#### **Hedging cash flows in a sample of Iraqi banks**

For the purpose of reaching the extent of the research sample's application of hedging, reliance was placed in this applied aspect on measuring the amount of cash flows and the extent of maintaining them, and on the ratio of these flows to meet the obligations in the banks of the research sample. Thus, it can be predicted that the bank has carried out the hedging process in light of the application of Financial Reporting Standard 9. The Verdi equation was relied upon, as this equation is used to measure future operating cash flows based on their relationship with current year variables, such as the change in bank receivables, whether related to debtors or creditors, and what these operational cash flows can reflect in terms of analytical ratios and the impact of this on predictable profits. In the future, it is also based on information that investors must be informed of, through the possibility of paying dues based on the

relationship between cash flows and profits that can be generated from revenues and their relationship to the fixed assets of the economic unit, and future cash flows.

$$*Accruals_{i,t} = \alpha + \beta_1 * CashFlow_{i,t-1} + \beta_2 * CashFlow_{i,t} + \beta_3 * CashFlow_{i,t+1} + \beta_4 * \Delta Revenue_{i,t} + \beta_5 * PPE_{i,t} + \epsilon_{i,t} \dots\dots(2)$$

$$Accruals = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD) - Dep \dots\dots(1)$$

- CashFlow<sub>i,t-1</sub> = last year's operating cash flow.
- CashFlow<sub>i,t</sub> = operating cash flow for the current year.
- CashFlow<sub>i,t+1</sub> = future operating cash flow.
- ΔRevenue<sub>i,t</sub> = change in revenues.
- PPE<sub>i,t</sub> = ratio of fixed assets / total assets.
- ΔCA = change in the ratio of current assets.

\*(Verdi, 2006: 16)

- Δ Cash = change in cash or its equivalent.
- ΔCL = change in current liabilities
- ΔSTD = change in short-term liabilities
- Dep = extinction.

All previous items are attributed to total assets.

The sample was chosen, represented by the Middle East Investment Bank and the Mosul Bank for Development and Investment, and Financial Reporting Standard 9 was applied to these banks in the year 2019. Therefore, the researcher had to take data for the years from 2014 to 2018 and measure the cash flows in it in the absence of applying the standard, and then the researcher By amending some paragraphs to keep pace with the application of the standard in order to reach the difference in applying the standard or not to financial instruments and hedging and the extent to which they maintain and continue cash flows in light of the application of the standard compared to the application of the standard.

**4-1 About the sample**

**First: Middle East Investment Bank**

The Middle East Investment Bank was established pursuant to the certificate of incorporation issued by the Companies Registration Department numbered MSH/5211 on 7/7/1992 with a capital of 400 million Iraqi dinars, of which 100 million Iraqi dinars were paid, to carry out its various works and activities in the year 1994. The bank owns 18 branches, including 6 branches operate inside Baghdad and twelve branches outside it.

In 2014, the bank increased its capital from 150 billion Iraqi dinars to 250 billion Iraqi dinars. The increase came through offering shares for subscription. The bank provides all banking services that support the development of the national economy.

**Second: Mosul Bank for Development and Investment:-**

The Mosul Bank for Development and Investment was established as a joint-stock company with a paid-up nominal capital of 1 billion Iraqi dinars on 8/23/2001, and the bank obtained a banking license on December 3, 2001, issued by the Central Bank of Iraq.

The Mosul Bank for Investment and Development aims to contribute to supporting the national economy in all different sectors in accordance with development plans and planning decisions, supporting production operations and contributing to direct investment operations in economic projects as well as other commercial banking activities.

In response to economic developments and with the aim of supporting the national economy through the bank's activities, expanding the base of customers dealing with the bank, meeting their local and foreign financial needs, and increasing its competitiveness in the Iraqi financial market, the bank's capital was increased several times, as follows:

- By 100%, to 2 billion dinars in February 2004.
- The second increase was 400%, reaching 10 billion dinars in September 2004.
- The last increase to 252.500 billion in January 2015.

**4-2 Analyzing data on the banks in the research sample**

Data extracted from the financial reports of the banks in the research sample were relied upon as inputs to apply the equation for measuring current and future cash flows to reach acceptance or rejection of the research hypothesis.

Table (1) Accruals ratio (Accruals it / T.A.) before applying IFRS9						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	0.211	0.019	-0.584	0.200	-0.090
2	Mosul Bank	-0.101	0.013	-0.022	-0.046	0.041

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (2) Previous operating cash flow ratio (CFO t-1 / T.A.) before the implementation of IFRS9						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	-0.0363	0.0611	0.1357	0.5098	-0.0423
2	Mosul Bank	0.1298	0.2247	0.0448	0.0787	-0.0669

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (3) Current year operating cash flow ratio (CFO it/T.A.) before applying IFRS9						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	0.0744	-0.0373	0.6079	-0.0503	0.2541
2	Mosul Bank	0.2219	0.0469	0.0782	-0.0708	-0.0507

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (4) Future operating cash flow ratio (CFO t+1 / T.A.) before applying IFRS9						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	-0.0454	0.6238	0.6079	0.3024	-0.0167

2	Mosul Bank	0.0463	0.0818	0.0782	-0.0536	-0.0849
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The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (5) Percentage change in revenues for the current year ( $\Delta$ Revenue i.t./ T.A.) before applying the IFRS9 standard						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	-0.0055	0.0039	-0.0115	0.0007	0.0048
2	Mosul Bank	0.0171	-0.0340	-0.0212	-0.0120	-0.0131

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (6) Percentage of fixed assets for the current year (PPE i.t./ T.A.) before applying the IFRS9 standard						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	0.0131	0.0145	0.0201	0.0202	0.0190
2	Mosul Bank	0.0311	0.0301	0.0268	0.0362	0.0321

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (7) Accruals ratio (Accruals it / T.A.) after applying the IFRS9 standard						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	0.0199	0.2195	-0.5861	0.2034	-0.0903
2	Mosul Bank	-0.1023	-0.0461	-0.0217	0.0134	0.0411

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (8) Previous operating cash flow ratio (CFO t-1 / T.A.) after applying IFRS9						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	0.1403	0.0635	-0.0364	0.5177	-0.0426
2	Mosul Bank	0.1310	0.2254	0.0450	0.0789	-0.0671

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (9) Operating cash flow ratio for the current year (CFO it/T.A.) after applying IFRS9						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	0.0769	-0.0387	0.6099	-0.0511	0.2560
2	Mosul Bank	0.2240	0.0471	0.0784	-0.0710	-0.0508

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (10) Future operating cash flow ratio (CFO t+1 / T.A.) after applying IFRS9						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	-0.0469	0.6484	-0.0601	0.3070	-0.0168

2	Mosul Bank	0.0468	0.0820	-0.0706	-0.0538	-0.0851
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The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (11) Percentage change in revenues for the current year ( $\Delta$ Revenue i.t./ T.A.) after applying the IFRS9 standard						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	-0.0056	0.0041	-0.0115	0.0007	0.0049
2	Mosul Bank	0.0172	-0.0341	-0.0212	-0.0121	-0.0132

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

Table (12) Percentage of fixed assets for the current year (PPE i.t./ T.A.) after applying the IFRS9 standard						
	Bank name	2014	2015	2016	2017	2018
1	Middle East Bank	0.0136	0.0151	0.0202	0.0205	0.0191
2	Mosul Bank	0.0313	0.0301	0.0269	0.0363	0.0322

The table was prepared by the researcher based on the reports of the banks in the research sample for the relevant years

In order to reach the basic research hypothesis (there is a significant relationship between the application of Financial Reporting Standard 9 and cash flow hedging). We assume the following sub-hypotheses

HO: There is no significant relationship between the application of Financial Reporting Standard 9 and cash flow hedging.

H1: There is a significant relationship between the application of Financial Reporting Standard 9 and cash flow hedging.

Using Tables 1 through 6, the application of the standard and Table 7 through Table 12 were said. After applying the standard, the following multiple linear regression equation was adopted to study the application of hedging cash flow risks by studying the relationship and impact of variables (operating cash flow for the past year,  $CashFlow_{i,t-1}$ , flow Operating cash for the current year  $CashFlow_{i,t}$ , future operating cash flow  $CashFlow_{i,t+1}$ , change in revenues  $\Delta Revenue_{i,t}$ , ratio of fixed assets / total assets  $PPE_{i,t}$ ) on the accuracy of financial reporting  $Accrual_{i,t}$  before applying the IFRS9 standard:

$$Accrual_{i,t} = \alpha + \beta_1 CashFlow_{i,t-1} + \beta_2 CashFlow_{i,t} + \beta_3 CashFlow_{i,t+1} + \beta_4 \Delta Revenue_{i,t} + \beta_5 PPE_{i,t} + \epsilon_{i,t}$$

Table (13) Represents pre-IFRS9 cash flow hedging					
	Bank	R	t alculated	tabular t	significant
1	Mosul Bank	0.75	3.59	2.447	significant
2	Middle East Bank	0.89	6.17	2.447	significant

Prepared by the researcher based on the outputs of the SPSS program

It is clear from Table (13) and by comparing the calculated t-values with the tabulated t-values at a level of significance (0.05), which reached (2.228), that the relationship is significant between the model variables and the cash flow risk measurement targeted in the study.

Based on the original values of cash flow hedging before applying the IFRS9 standard shown in Table (14), the average values of the banks' realized flows were calculated.

Year	Middle East Bank	Mosul Bank for Development and Investment	Average value
2014	0.063	0.377	<b>0.22</b>
2015	0.029	-0.124	<b>-0.095</b>
2016	-0.021	0.153	<b>0.066</b>
2017	0.174	0.009	<b>0.082</b>
2018	-0.365	-0.062	<b>-0.214</b>

The multiple linear regression equation was adopted to study cash flows by studying the relationship and effect of hedging variables (operating cash flow for the past year  $CashFlow_{i,t-1}$ , operating cash flow for the current year  $CashFlow_{i,t}$ , future operating cash flow  $CashFlow_{i,t+1}$ , change in revenues  $\Delta Revenue_{i,t}$ , the ratio of fixed assets / total assets ( $PPE_{i,t}$ )  $Accrual_{i,t}$  after applying the IFRS9 standard:

	Bank	R	t alculated	tabular t	significant
1	Mosul Bank	0.75	5.10	2.447	significant
2	Middle East Bank	0.89	6.17	2.447	significant

Prepared by the researcher based on the outputs of the SPSS program

It is clear from Table (15) and by comparing the calculated t-values with the tabulated t-values at a level of significance (0.05), which reached (2.228), that the relationship is significant between the model variables for the banks in the research sample.

Based on the original values of cash flows after applying the IFRS9 standard shown in Table (16), the average estimated values for hedging cash flows achieved for all banks were calculated.

Year	Middle East Bank	Mosul Bank for Development and Investment	Average value
<b>2014</b>	0.0629	0.3886	<b>0.226</b>
<b>2015</b>	0.0288	-0.1264	<b>-0.049</b>
<b>2016</b>	-0.0212	0.1589	<b>0.069</b>
<b>2017</b>	0.1738	0.009	<b>0.09</b>
<b>2018</b>	-0.3661	-0.0638	<b>-0.215</b>

Therefore, the null hypothesis that there is no statistically significant relationship between the application of IFRS9 and cash flow hedging is rejected, and the alternative hypothesis is accepted for the research sample.

### **The fifth section**

#### **Conclusions and recommendations**

##### **First: Conclusions**

- 1- The application of hedging in Iraqi banks is linked to the extent of their exposure to risks in light of the fluctuations of the financial markets and the surrounding environment.
- 2- Hedging of financial instruments is linked to the amount of cash flows of the hedging asset or liability, the preservation of these flows and their impact on the amount of profits and losses generated from them.
- 3- The results of the equations in which cash flows were measured showed convergence in the results for hedging cash flows under the application of the standard and before applying the standard for the following reasons:
  - A - The banks implement the instructions and guidelines issued by the Central Bank of Iraq.
  - B - The financial instruments owned by the bank are not surrounded by risks due to the banks' compliance with the instructions and guidelines issued by the Central Bank.
- 4- Cash flows were stable within the study period for the research sample, and therefore the application of the standard contributed to this.

##### **Second: - Recommendations: -**

- 1- The researcher recommends the necessity of studying the environment surrounding banks in light of the economic transformations surrounding the Iraqi environment to contribute to strengthening their financial tools.
- 2- Striving to obtain more operating cash flows by relying on more diverse financial tools to increase profits and enhance the financial position of the banks in the research sample.
- 3- Continue to follow the established steps to adhere to the laws, instructions and guidelines issued by the relevant authorities.
- 4- The researcher recommends addressing the issue of hedging in light of the application of financial reporting standards, because of the importance of this topic, especially in the banking sector.

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The author declares no conflict of interest.

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