

# The Impact of Financial Innovation on the Profitability of Iraqi Commercial Banks: A Case Study of the Commercial Bank of Baghdad

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**Abstract:** The current research aims to know the impact of financial innovation on the profitability of Iraqi commercial banks by studying the performance of one of the largest private commercial banks in Iraq, the Baghdad Commercial Bank, for the purpose of providing researchers and those interested in financial issues with the importance of these variables and their impact on the business structure of the local banking system in particular, and their impact On the global business structure in general, the current research presents the scientific and literary concepts about the study variables (financial innovation and bank profitability) and shows the extent to which successful banks have progressed in adopting these concepts. Financial innovation for the purpose of improving its performance and thus increasing its profitability? On the basis of the goal and problem of the research, the researcher seeks to test the research hypotheses represented in the existence of a correlation between the financial innovation of Iraqi commercial banks and the profitability of banks and the presence of an impact of the financial innovation of Iraqi commercial banks on the profitability of banks, and the results of the research showed that there is a positive, important and strong relationship between financial innovation and the profitability of the bank. The results also that financial innovation has a clear impact on the profitability of the bank, that is, it contributes significantly to improving the financial performance of the bank and thus increasing the profitability of the bank.

**Keywords:** financial innovation, bank profitability, profitability, Iraqi commercial banks, Baghdad Commercial Bank.

## 1. Introduction:

The banking sector represents the running blood of economic life, modern trade, and businessmen because the banking sector provides them with a major source of financing. Banks depend to a large extent on the strategy of financial innovation in the performance of their business, which determines their success and growth in a revolution that changed the methods and methods of banking work, which changed a lot in the new millennium compared to the way it was in the past years (Gul, et al. 2011), therefore, some considered it important to understand the impact of financial innovation on the profitability of banks, due to their impact on the health of the financial sector.( Borio, et al. 2017), Financial innovation has become an essential topic for researchers, due to its important contribution to the development, economic growth and stability of financial systems. Scientists believe that the new financial products, have huge potential to diversify risks and manage them efficiently. The actual impact on the stability of banks is widely

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questioned in developed economies. Despite this, there are still many obstacles in understanding the relationship between corporate profitability and financial innovation, which provides potential for further research because the issue of financial innovation and bank profitability is a new idea. relatively in developing economies. (OLALERE, et al. 2021). Commercial banks are considered one of the most important economic sectors in any country, because through them it is possible to provide a group of diverse services represented in financial intermediation, credit risk management and other services, which contribute effectively to the running of the wheel of progress and economic growth, so the safety and stability of the sector Banking positively affects the safety and stability of the local economies of any country, (Dalniela, and Brian. 2010). The main goal of any commercial banks is to achieve and maximize profits, just like any business organization that seeks to increase the wealth of its owners and increase the market value of its shares, as commercial banks usually resort to achieving this goal by increasing the value of revenues to the greatest extent or reducing costs to the least possible extent. , or do both, (Al-Rashdan, 2002). The Iraqi financial system is dominated by commercial banks. The structure of the banking system in Iraq underwent major changes after 2003 when the banking supervision process was aligned with international best practices. The privatization of some public sector banks and the merger process led to remarkable changes in ownership, structure and focus in the banking sector, which allowed some of them devise strategies in line with the technological progress taking place in the global work environment, (HELU, 2020).

In this paper, we explore the impact of financial innovation on bank profitability in greater depth, focusing precisely on the relationship between the services a bank provides and the bank's performance. This, of course, means that we take the country's macroeconomic conditions as they are and do not include any influences that work indirectly through the impact of financial innovation on the profitability of banks. We contribute to literature in two main ways. The first: clarification of the literary and scientific concepts of the current research paper variables represented in financial innovation and the bank's profitability. Second: We provide researchers and those interested with a factual overview of the Iraqi banking work environment through the study sample represented by the Bank of Baghdad, which was distinguished by its possession of a dressed penalty of verses, the application of financial innovation, which represents facilities granted by Services and innovations provided by the bank to stakeholders. This paper is organized as follows: After the introduction in Section 1 above, a literature review is conducted in Section 2. The data and methodological framework are explained in Section 3. The findings and interpretation of the results are found in Section 4. The final section of the research concludes in section 5.

## 2. Methodological framework and data

### 2.1. Data

A data set shown in Table ( ) and Table ( ) covers profitability indicators and capital increase indicators for the purpose of covering financial innovation expenditures and for a period of thirteen years from 2008 to 2020, for the Commercial Bank of Baghdad, which is one of the largest Iraqi private commercial banks. (Mashkour,. 2020) The data was Taken from the central bank of the country, which is the bank of the Iraqi government, and from the reports of the Iraqi financial markets, and from various reports from the official website of the Commercial Bank of Baghdad, the research sample.(Mashkour,. 2020).

### 2.2. Research objectives

The objective of this research paper is to know the impact of financial innovation on the profitability of the bank by analyzing the business activity of one of the largest private commercial banks in Iraq. It is the Commercial Bank of Baghdad as a study sample, Which represents the Iraqi banking sector with financial innovations, and this is the main objective of the current research, and The secondary goal is to provide

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researchers and those interested in financial issues with the importance of the variables studied in this research and to show their impact on the business structure of the local banking system in particular and the global business structure in general, so that there will be a clear picture of the work of Iraqi banks during the study period until the present time.

### 2.3. Research problem

The current research presents scientific and literary concepts and statistical analyzes on the study variables (financial innovation and bank profitability) and shows the extent to which successful banks have progressed in adopting these concepts. And based on this basis, the current research raises many questions, one of the most important of these, is why many Iraqi banks did not adopt methods of financial innovation in order to improve their performance and thus increase their profitability?.

### 2.4. Research Hypothesis

Based on the goal and problem of the current research, the researcher seeks to test the following hypothesis: H1, There is a correlation between the financial innovation of Iraqi commercial banks and the profitability of banks. H2, There is an impact of the financial innovation of Iraqi commercial banks on the profitability of banks.

## 3. Literature review

### 3.1. Financial Innovation

One of the most important concepts and the most widely used and widespread of the concepts of financial innovation is the clarification provided by researchers, Frame and White (2004), which deduced this concept after analyzing the basic functions of the financial system, and considered financial innovation “a new innovative thing that through the use of financial innovation can reduce costs, reduce risks, or provides an improved product, service, or tool that better meets the demands of the participants. Thus financial innovations can be categorized as new innovative products (e g, adjustable rate mortgages, exchange-traded funds) or new services (eg, online stock trading; online banking); New "production" processes (eg, electronic stock-record-keeping; credit-recording); or new organizational forms (for example, a new type of electronic exchange for securities trading; online banking only). ( Muia,. 2013). Financial innovation has become an essential topic for researchers, due to its important contribution to the development, economic growth and stability of financial systems. It is believed that the new financial products, have huge potential to diversify and manage risks efficiently. The actual impact on the stability of banks is widely questioned in advanced economies. Despite this, there are still many gaps in understanding the relationship between corporate profitability and financial innovation, providing potential for further research because the issue of financial innovation and bank profitability is a novel idea. relatively in emerging economies.( OLALERE, et al. 2021). The results presented by the study of Rahman et al.(2021), that financial innovations contribute significantly to improving the financial performance of the bank and thus increase its profitability. (Syed, & Waheed,. 2016). Financial innovation refers to the progress achieved in creating new financial tools, technology, institutions and markets, and financial innovation has led to the discovery of new categories of institutions and products such as innovation in the engineering of risk management tools known as “derivatives”, and the formation of new types of them as well as in systems Payment used in lending and borrowing, such as electronic banking operations, via smart phones, methods of issuing securities, and others. Thus, financial innovation is closely related to technological, technical and organizational development, and to changing economic policies, and developments in the markets, and financial innovation has led to an increase in available credit. And providing new methods and reducing the cost of trading, depression and marketing, and allowed financial institutions, such as banks to increase the volume of their capital, which in turn leads to

increasing the profits of institutions and achieving economic and social development due to the increase in financial innovation rates. (Azimova, 2021). The infrastructure of the Iraqi market determines the demand for new financial products and practices, which began to emerge with the state's direction towards enhancing justice and transparency in financial markets, promoting the development of investments, and protecting the rights of investors. Innovative financial products in Iraq can be observed in relatively limited categories due to the fragile situation of the Iraqi economy in general as a result of the general instability in the country. However, some financial innovation products have appeared in many institutions, the most important of which are liquidity management products, investment contracts, market structures, and new products associated with technological progress. This seems clear in the study sample, the Bank of Baghdad. (Mashkour, 2020). These measures for Iraqi banks have caused these banks to allocate a large percentage of their capital in order to develop innovative services that adopt the concepts of financial innovation.

These operations took place according to different stages, which required bank owners to increase their expenses whenever necessary, and this led to an increase in their capital in proportion to those expenses. Therefore, the researcher relied on the percentage of the increase in the bank's capital allocated to the development of financial innovations during the study period 2008-2020 as an indicator of the extent to which the bank possesses financial innovation, as this increase in capital contributed, significantly, in generating very modern services and using advanced technologies, which was the reason for the adoption of the Bank of Baghdad for financial innovation. On this basis, Anderson explains That the percentage of increase in the capital allocated to the development of financial innovations, which was adopted as an indicator of the amount of money invested by the bank in order to improve innovative services, given that a large part of the money that was added to the capital was used for the purpose of improving the bank's performance. (Anderson, 2019). The measures of the percentage change in the capital allocated to the creation of financial innovations often involve the analysis of financial statements for a series of previous years and in this study adopted the period from 2008 to 2020 for the purpose of calculating and interpreting the percentage of changes. The starting year is adopted for each period as a basis, and then we find the percentage of the increase in the capital, and it is equal to the capital for the previous year, minus the capital for the base year divided by the capital for the base year, and this equation is adopted for the rest of the years. (The percentage of the increase in the funds used to create financial innovations for each year = the percentage of the increase in the capital = (the capital for the previous year - including the capital for the base year) / on the capital for the base year) (Mashkour, 2020).

$$PIC = \frac{(CPY - CBY)}{CBY}$$

The percentage of the increase in the capital,( PIC)

The capital for the previous year,( CPY)

Including the capital for the base year, (CBY)

### 3.2. Bank's profitability

Profitability is one of the main objectives of the work of commercial banks, as it is related to their activities and expansion in the practice of their business. They are used as indicators to measure the performance of the bank's management. They give the bank and the efficiency of the bank in managing its projects, and the effectiveness of investment and financing policies. It is one of the most important sources for generating capital, increasing the confidence of deposit holders and current investors, and encouraging subscription in the bank's shares. (Al-Bayati, 2018). And the main objective of commercial banks is to achieve and maximize profits, just like any business organization that seeks to increase the wealth of its

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owners and increase the market value of its shares, as commercial banks usually resort to achieving this goal by maximizing the value of revenues or reducing costs to the least extent. Possible, or do both procedures (Al-Rashdan, 2002). And profitability means the ability of institutions to earn and earn or operational performance, and also means the ability of a particular investment to earn a return on its investment (Al-Bayati, 2018), which is a measure or indicator of the efficiency and safety of the investment policies of the financial institution and it reflects the overall performance of the institution in a certain period of time. Commercial banks face in Its way of achieving profits and maximizing its profits is a set of factors that affect, in varying degrees, on its profitability, including external factors represented in the environment surrounding the bank or internal factors represented in property rights, cash liquidity and assets. (Shehab El-Din, 2016). . Abu Zuaier (2006) confirmed that commercial banks seek to obtain the largest possible amount of deposits and financial resources at the lowest possible cost in order to maximize their profits. to maximize its profits. Profitability has a broad concept and has several fields, and its measurement is considered a precise issue and is not significant unless it is attributed to a specific reference period.( Abu Zuaier,2006). Profitability also has an operational concept in the sense that profitability is achieved when the realized revenues are greater than the expenditures or the expended costs. Thus, profitability is the actual embodiment of the results achieved by the bank, which concern multiple parties and different categories (property of shareholders, lenders, suppliers, workers, and others. (Shehab El-Din, 2016). In a study of ( Gul, & Zaman, 2011), they find a positive and direct relationship between the capital and the profits of the banks, as the higher funds can easily meet their capital more, and thus they can have additional funds to grant loans to borrowers and thus increase their profits and levels of profits and thus banks that have a lot of capital can use it to provide innovative advantages to customers and this It implies that the most financially innovative bank should generate higher profits because it is able to maximize net interest income. And it was defined by (Jassim, & Mahmoud, 2020). the bank's profitability is the bank's profit rate, and it is an indicator in evaluating the performance because it expresses the efficiency of the operational performance of the bank's management and it is an economic expression of the efficiency of the banking administration in investing the available resources, services and business, and the profit is usually attributed to Assets, property rights, or deposits are the financial indicator that is used to evaluate the performance of the commercial bank, and it gives a picture of the performance. Based on the previous definitions, profitability can be defined as "the bank's ability to achieve profits for the bank's resources, in order to achieve a return commensurate with the volume of the bank's resources during the period The rate of return on assets in a specific resource of the bank is expressed. Therefore, the researcher of the current study used Return on Assets (ROA) to measure the bank's profitability. And Return on Assets (ROA) is an indicator of how profitable a bank is in relation to its total assets. An ROA gives a manager, investor, or analyst an idea of how efficiently a company's management is using its assets to generate profits. Return on assets is shown as a percentage. Interpretation of return on assets can inform return on assets about the profits obtained from invested capital and when using return on assets as a comparative measure, it is better to compare it with the previous return on assets figures for a company or the return on assets for a similar company. The ROA figure gives investors an idea of how effectively the company converts the money it has to invest in net income. The higher the ROA number, the better, because the company earns more money on less investment. (Nandy, 2022). For example, if one company has a net income of \$1 million and total assets of \$5 million, the return on assets is 20%, however, if another company gets the same amount but total assets of \$10 million, its return on assets 10%., and based on this example, the first company is the best in converting its investments into profits. These results were obtained according to the equation that shows that the return on assets is equal to the net profit after taxes on total assets. (Irman, & Purwati, 2020).

On the basis of the foregoing, the current research relied on the following equation in finding the profit rate of the Bank of Baghdad

Return on Assets = Net Profit After Taxes / Total Assets. (Irman, & Purwati, 2020).

### 3.3. Brief about Bank of Baghdad

The Bank of Baghdad, with its 36 branches, is one of the largest private commercial banks in Iraq. The bank worked to integrate modern technology from financial innovations with customer service. Therefore, the Bank of Baghdad emerged as one of the largest banks in the region that provides financial services with quality and complete confidence. It provides commercial and global services to small and medium enterprises, and its services include commercial real estate services, construction loans, credit services, credits and trade finance. In addition to its services to individual clients, which includes a full range of savings accounts, housing loans, personal loans and car loans. The Bank of Baghdad has evolved from a local bank to an international bank during the past years. It continues to grow and perform well, despite the turmoil in global financial markets, and the local instability affecting the Iraqi economy. Much of the Bank's success has been achieved through technical enhancements and as a result of the Bank's strategic interest in the future. One of the most important financial innovations of the bank is its reliance on information technology and comprehensive automation, the two tools that enabled the Bank of Baghdad to compete with foreign banks in Iraq. And in addition to electronic banking services to provide additional benefits to customers and shareholders. ( <https://www.bankofbaghdad.com.iq> )

Information technology can be defined as a set of tools, methodologies, processes and equipment that are used to collect, process and store information, and examples of these tools are: coding, programming, storage, retrieval, analysis, and systems control. , data transformation, and information technology: office automation, telecommunications, multimedia, and IT investment decisions are in response to lack of or performance improvement and represents the rational choice of managers and enables them to expand prior research on digital innovation and the commercial value of information technology by demonstrating That investment in information technology leads to innovative outputs that, in turn, improve performance in the long run. In doing so, we provide empirical evidence to support a more holistic picture of IT business value as innovation outcomes guide the impact of IT investment performance by addressing performance inefficiencies. (Dong, et al, 2021). Mass automation based on Robotic Process Automation (RPA) is an extension of legacy business process automation technology beyond the confines of individual processes. By combining AI tools with RPA technology, end-to-end automation enables automation to be performed on any of the repetitive tasks by business users. By utilizing a suite of tools such as machine learning (ML) and artificial intelligence (AI), working in harmony to automate complex business processes – including those that required the intervention of subject matter experts – end-to-end automation is a means to truly digital transformation. (Van der Aalst, et al, 2018). The Bank of Baghdad provides global banking solutions to its individual and corporate clients. Through its financial innovations represented in the Internet banking service (Internet banking): This service allows providing banking services to the bank's customers via the Internet. (Kavitha, & Gopinath 2021). The Bank of Baghdad uses this technology with a range of banking services, allowing the bank's customers in any A place (outside and inside Iraq) and at any time (24 hours a day, 7 days a week), which allows competitiveness in the field of banking services, reduces the cost of banking services to the bank, improves the speed and effectiveness of banking services, and works to gain customer loyalty. (<https://www.bankofbaghdad.com.iq>).

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#### 4. Results of the study

This section deals with the results of the study, which includes financial data analysis, descriptive statistics, and multiple tests of linearity related and the effect to the study, and due to the novelty of the subject, the sample was limited to the Commercial Bank of Baghdad, which was distinguished by its application of part of the financial innovation services to its customers.

##### 4.1. Financial Statements

Table (1) the percentage of increase in the funds used to create financial innovations for the Bank of Baghdad during the period (2008-2020)

Years	Share capital	FI = The percentage of increase in the money used to create financial innovations for every year = ( current year – last year ) / last year
2008	70,000,000,000 ID	0
2009	85,000,000,000 ID	$(85,000,000,000 - 70,000,000,000) / 70,000,000,000 = 0.21$
2010	100,000,000,000 ID	0.15
2011	112,900,000,000 ID	0.13
2012	175,000,000,000 ID	0.55
2013	191,262,414,000 ID	0.21
2014	203,419,198,000 ID	0.06
2015	233,744,618,000 ID	0.14
2016	242,821,705,000 ID	0.04
2017	256,942,042,000 ID	0.06
2018	266,746,720,000 ID	0.04
2019	273,641,424,000 ID	0.03
2020	290,000,000,000 ID	0.06

Table (1 ) the return on assets ratio as an indicator of the profitability of the Bank of Baghdad during the period (2008 - 2020)

Years	Total Assets	Net profit	ROA = Net profit / Total Assets
2008	542,000,000,000 ID	22,000,000,000	0.040
2009	802,000,000,000 ID	15,600,000,000	0.019
2010	961,000,000,000 ID	16,200,000,000	0.017
2011	875,900,000,000 ID	24,900,000,000	0.028
2012	1,300,000,000,000 ID	29,600,000,000	0.023
2013	1,764, 000,000,000 ID	32,800,000,000	0.019
2014	1,828, 000,000,000 ID	38,700,000,000	0.021
2015	1,450, 000,000,000 ID	24,900,000,000	0.017
2016	1,479, 000,000,000 ID	35,400,000,000	0.024
2017	1,902, 000,000,000 ID	46,600,000,000	0.024
2018	1,114, 000,000,000 ID	50,700,000,000	0.046
2019	1,133, 000,000,000 ID	57,900,000,000	0.051
2020	1,420, 000,000,000 ID	60,700,000,000	0.043

## 4.2. Descriptive statistics

This paragraph of Descriptive statistics includes a test for two things: (test the relationship between financial innovation and bank profitability, and test the impact of financial innovation on the profitability of the bank).

### First: test the relationship between financial innovation and bank profitability

In order to test the relationship between financial innovation and the profitability of the bank, it is necessary to find the Pearson correlation coefficient to show the strength of the correlation between the variables, and if the results appearing after conducting the test for them indicate the values of a positive correlation (greater than zero, less than or equal to one) it is a guide On the directness of the relationship between the two variables, either if the values of a negative correlation relationship (less than zero, greater or equal to negative one) indicate the opposite of the relationship between the two variables, provided that the significant value (Sig) appearing in the test is less than the level of significance approved in the current study, which is (0.05) and this is confirmed by the appearance of the sign (\*\*) in the results of the statistical analysis and these statistical indications were adopted because it is acceptable in administrative studies according to the source (Asuero, AG, Sayago, A., & Gonzalez, AG (2006). and the table ( 2 ) shows the following:

Correlations			
		Financial Innovation	Bank Profitability
Financial Innovation	Pearson Correlation		.693*
	Sig. (2-tailed)		.013
Bank Profitability	Pearson Correlation	.693*	
	Sig. (2-tailed)	.013	
Correlation is significant at the 0.05 level (2-tailed).			

The source is ( Asuero, A. G., Sayago, A., & Gonzalez, A. G. (2006). The correlation coefficient: An overview. *Critical reviews in analytical chemistry*, 36(1), 41-59. ) and it was prepared by the researcher based on the program SPSS 26

Table ( 2 ) indicates that there is a strong direct positive correlation relationship at a level of significance less than (0.05) and with confidence limits greater than (95%) between the variable of financial innovation and the variable of bank profitability, as the value of the correlation between them reached (0.69) and indicates a good correlation indicating that The more the bank studied in the current study expands by adopting the concepts of financial innovation, the more its business expands and its performance improves, and thus its profitability increases and vice versa. As for the level of morale extracted from the results, it reached (0.013), which is less than (0.05), and this indicates the existence of a significant correlation between the two variables, and these results (The results of the test of the correlation between financial innovation and bank profitability), which was mentioned previously, suggest that the first main hypothesis will not be rejected (there is a significant correlation between financial innovation and bank profitability), and therefore the first hypothesis of the study is accepted.

### Second: To test the impact of financial innovation on the profitability of the bank

The researcher can test the impact of financial innovation on the profitability of the bank using the simple regression model and multiple regression, and the explanatory variables are measured through the (t-test) and (F-test) tests to identify the significance of the regression models. Corresponding to the value of (F)

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and (t) is less than the level of significance approved in the study, which is (0.05), this means that there is a significant effect of the independent variable on the dependent variable, and to know the percentage of the impact of financial innovation on the bank's profitability, it will be through the values of the coefficient of determination ( $R^2$ ). ), while the values of the regression coefficient ( $\beta$ ) refer to the amount of change that occurs in the dependent variable when there is a change of one unit in the value of the independent variable. ( Brook, & Arnold,2018). Finally, the simple regression equation and the final result of the hypothesis will be included, as shown in the following table:

x	Details	(Y) Bank Profitability
Financial Innovation	F	10.063
	Sig. Of F	0.002
	T	17.950
	Sig. Of T	0.000
	$R^2$	0.654
	Constant of A	1.581
	Sig. Of a	0.000
	Beta's coefficients	0.643
	regression equation	$Y=1.581+0.643 X$
	Result	Accept the hypothesis

The source is (Brook, R. J., & Arnold, G. C. (2018). *Applied regression analysis and experimental design*. CRC Press.) and it was prepared by the researcher based on the program SPSS 26

The table ( 2) shows the values of the (F-test) and (t-test), their values respectively reached (10.063) and (17.950), and the level of significance for each of them amounted to (0.002) which is less than the level of significance approved in the current study, which is (0.05). This means that there is a significant effect of the independent variable, financial innovation, on the dependent variable, the profitability of the bank, as shown by the values of the coefficient of determination ( $R^2$ ) of (0.654), meaning that the adaptive leadership variable explains its value (0.65) of the change in the bank's profitability, and the values of The slope of the regression equation ( $\beta$ ) of (0.643), which indicates that the amount of change that will occur in the bank's profitability when there is a change of one unit in the value of financial innovation, and the values of the regression constant (a) amounting to (1.581) and a significant level of (0.000), each These results support the hypothesis of the first main study on the effect, which states (there is a significant effect between financial innovation in the profitability of the bank), and on the basis of these results, this hypothesis can be accepted.

## 5. Conclusions

Through the intellectual and literary introductions about the current research variables (financial innovation and bank profitability), which were previously clarified, as well as through the results of the analysis of financial and statistical data for these variables, and through a table ( ) it turns out that there is a positive direct correlation between financial innovation and the profitability of the bank, which indicates However, the more the bank uses modern technologies with financial innovations in providing business to its customers, and thus improves the bank's performance and achieves efficiency in the use of its resources, and the more customers turn to dealing with banks with financial innovations. The correlation between financial innovation and bank profitability, and it allows accepting the first hypothesis. As well as

analyzing the data through a table ( ) shows that financial innovation has a strong impact on the profits of the bank, and this conclusion allows the acceptance of the second hypothesis of the research.

The results and conclusions included in the current research were limited to data related to the Bank of Baghdad, which is one of the largest Iraqi commercial banks, and for being, to the best of the researcher's knowledge, the only Iraqi bank that uses financial innovation techniques to complete its work. However, these results clearly indicated the importance of financial innovations in The success of banks, and therefore this experience can be generalized to other ethnic banks for the purpose of benefiting from them in improving their performance and increasing their profitability. The researcher hopes to expand his experience in the future by conducting similar research for more than one bank and to show the impact of financial innovation on the performance of the Iraqi banking system.

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