

# The Impact of Using Financial Derivative Instruments on the Financial Performance and Operational Efficiency of Iraqi Commercial Banks: An Applied Study

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**Abstract:** this research aims to analysis effect use tools finance derivative on performance financial and efficiency operational for banks commercial Iraqi during Period (2020–2024) , from during study applied on group from banks represented by In Baghdad Bank, Babylon Bank, Sumer Bank, Uruk Bank, Gulf Bank, and Al-Mansour Bank. come significance look for tools from the role Increasing using financial derivatives to increase banks' ability to manage risks, finance them, and enhance stability Its operating efficiency and earnings, particularly in an economic climate marked by volatility and instability market similar to the Iraqi market. Accepted look up "Methodology" to learn more about the analysis. combines the two theoretical and applied frames, where the analysis was finished. Annual financial data for banks using model data panel data for estimation effect, the six during the search time Utilize tools that are derivative of financial performance indicators (such as margin net interest (NIM), return on ownership (ROE), and return on origins (ROA). Additionally, operational efficiency (e.g., the ratio of operational expenses to revenues (C/I). In addition, it was finished using the following variables: the bank's size, liquidity, and headroom, as well as the percentage of loans that are stumbling. Reach. Use tools to search during the analysis experimental phase. Finance derivatives have a positive relationship with bank performance, therefore they help to increase indicator profitability and decrease oscillation profits. Additionally, the results indicated that excessive use of these tools may result in increased operational costs and administrative complexity, which in certain cases may have a detrimental impact on operational efficiency.

**Key words:** Tools Finance derivative, performance Financial, efficiency operational, Banks Commercial Iraqi.



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## Introduction:

They observed the global evolution of banking and the use of financial tools. derivatives as a tool for risk management and financial performance enhancement for financial firms. And in the shadow of globalization, finance and economic openness have become mandatory for banks' commercial operations, particularly in emerging nations. Keeping up with these incredible developments from Okay has strengthened its financial stability and increased its operational efficiency. Regarding Iraq, the sector banker lost face throughout contracts. Economic and political volatility, inadequate liquidity, a weak infrastructure finance structure, and limited use of modern finance tools were the last major challenges. and raise the risks connected with It alters the cost of oil and organizational exchange and changes have led to the demand for accreditation tools and further financial development. In order to control those risks, and in Introduction tools finance derivative . Tools finance derivative from highlights innovations finance that contribute in to improve efficiency administration risks and achieve Stability financial For institutions Banking . Aside from that, using it could occasionally come with additional hazards that increase financial complexity. This is where the significance of his search lies, as he aims to analyze the impact of using tools to finance derivatives on the financial and operational performance of commercial banks in Iraq between 2020 and 2024. Based on that, it is anticipated that this search will help banks in Iraq use finance derivatives as efficiently as possible, improving their operational and financial stability while supporting authorities in their ongoing efforts. Standards for supervision in development Disclosure of Censorship Iraq's financial situation.

## Chapter One: Research Methodology and Previous Studies

### 1-1 Research methodology:

The research methodology includes the research problem, its importance, objectives, and hypothesis, in addition to the research community and sample, as well as the scientific method used.

#### 1-1-1 Research problem:

The issue that raises questions about bezel perception is the research weakly use tools finance derivative in banks commercial Iraqi in comparison to their regional and worldwide rivals in systems banking. For the significance of those tools in risk management and to enhance her financial performance and operational efficiency, these banks are outstanding. Therefore, even though Evolution is the major player in using derivatives in markets and finance worldwide as a way to protect against price, interest, and price volatility, Risks and exchange Credit, unless that bank is Iraqi, is heavily dependent on traditional tools for administration risks, which could expose it to significant changes in financial performance and stability. As well. Facing Banks Iraqi challenges multiple, from it limited experiences artistic Specialized in area derivatives finance, weakness structure infrastructure technology and accounting that Support dealing with this is amazing tools, In addition to absence Instructions Organizational minute from before authorities supervision that encourage on Use it within framework legal and my supervision clear . And based on that on that, Then absence awareness financial and the technician in use tools derivative to decline level efficiency operational and high level risks operational and finance.

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

This research is important because it focuses on one topic: the vitality of modern field bankers, as indicated by the use of finance derivative tools and their effects on the financial and operational performance of commercial Iraqi banks. I became a tools derivative from the most significant means that assist institutions of finance in managing risks and protecting themselves against price fluctuations, interest rate changes, exchange rates, and other factors that impact stability and financial performance in the shadow developments that accelerate the financial sector and the banker on Upper Egypt Global. came to pass. Search for Upper Egypt Scientific in Being Blocks Gap is important. You are fortunate to have studied Tools Finance Derivative with interest in Al-Kafi in Local Literature despite its significance in Strengthening Iraqi cognition, so did not As well. Contributes Search in Enrichment side academic from during presentation framework My analysis And my methodology connects between Use Tools Finance Derivative and indicators Performance Financial and efficiency operational, Approved on Data Realism Cover a period Temporal extends from 2020 to 2024. Regarding the side applied, he then provides a deeper understanding for Iraqi banks on how to use finance derivative tools in an efficient manner to enhance their financial performance and lower the risks they face. This helps them make more accurate and effective decisions. In addition. Perhaps this helps to improve the search results for strengthening departments, banking on design policies, and a financial balanced pool between increasing profitability and lowering operational risks.

### **1-1-3 Research objectives:**

This research aims to analyze and evaluate the impact of using finance derivatives on the financial and operational performance of commercial Iraqi banks between 2020 and 2024. The study applied for the number of Iraqi banks that represent the sample search. This is the objective. In a banking environment that is characterized by change rather than stability, derivatives finance are seen as important tools for risk management and for bolstering stability. looks for. look for the investigation team from the Detailed Objectives that Pour in the goal's framework. President The relationship between use tools finance derivative is being studied and analyzed. and indicators Performance Financial For banks, like Return on Return on Assets ( ROA ) on rights Ownership ( ROE ) and margin Net Interest ( NIM ) , To know what if He was Use This is amazing Tools Contributes in to improve Profitability And strengthening ability on investigation returns stable And sustainable . And measurement. effect use tools finance derivative on efficiency operational For banks, from during analysis lineage expenses operational to revenues total origins, and specify what if it was Use derivatives Leads to cut costs operational and improve administration resources finance . It determine Factors Interior that may affect in relationship between use tools finance derivative and performance Financial, like size The bank, and the percentage adequacy head the money, and level liquidity, and the percentage loans the distressed and that to understand nature impact This is amazing factors on effectiveness use derivatives.

### **1-1-4 Research hypothesis:**

Research does on hypothesis main the following : "There is relationship Self indication Statistics between Use Tools Finance Derivative and performance Financial and efficiency Operational For banks Commercial Iraqi during The period (2020–2024) .

### **1-1-5 Research community and sample:**

It includes a community search of all banks' commercial Iraqi employees in Iraq between 2020 and 2024, who practiced banking under the supervision of Bank Iraq central. Given that there are many banks, their sizes vary, and their activities vary, it was decided to intentionally select a sample of banks that have sufficient financial data available about her. It uses tools for finance derivatives in the picture to show what is actual or possible in its financial transactions. Includes sample Search six Banks Commercial Iraqi It was completed her choice building on Availability

Data And its suitability For goals the study, It is : Bank Baghdad, Bank Babylon, Bank Sumer, Bank Warka, Bank Gulf Bank Al-Mansour . Represents This is amazing banks model balanced from where size and nature activity and diversity Products banking, including reflects reality sector banker Iraqi during a period study . As well. that her choice aims to investigation balance between banks that it has heading greater to use tools finance modern and banks self-approach traditional, And that For the purpose of study differences in performance financial and efficiency operational the resulting on level use tools finance derivative

### **1-1-6 Research methodology:**

Research depend on curriculum descriptive analytical as a description Curriculum most suitable to study relationship between use tools finance derivative and performance Financial and efficiency operational for banks Commercial Iraqi . this curriculum on collection data and information from Sources High school And analyze it In a way amount And statistics to extract Results that Explain nature relationship between Variables Study . It was completed accreditation in side Applied on analysis data panel data for banks covered sample search during period (2020–2024) , when available this is amazing The method from possibility track changes via time And between units different . As well as It was completed Use group from Methods statistics modern to test hypothesis, from among them models effects fixed, addition to tests diagnostic to verify from suitability the model User.

### **1-2 Previous studies and the contribution of the current research:**

This section will address previous studies related to the current research topic, in addition to explaining the contribution of the current research and the extent to which it differs from previous studies.

#### **1-2-1 Previous studies:**

Previous studies related to the current research topic can be explained through the following:

1. A study (Smith, 2024 ) entitled : “ Impact of Derivative Instruments on Bank Financial Performance in Emerging Markets ” , A study intends to investigate the possibility of using tools finance derivative to enhance banks' financial performance in markets. Youth And that by researching how derivatives affect metrics like margin net interest (NIM), rights ownership (ROE), and return on return on assets (ROA). Additionally, it seeks to understand how to mitigate the effects of variations in profits in shadow environments when the economy is unstable. I discovered that banks who rely on derivatives finance record financial performance more accurately than those that don't, and that they have contributed derivatives to increase profitability and lower oscillation profits.
2. A study ( Johnson & Lee, 2024 ) entitled : “ Derivatives and Operational Efficiency in Regional Banks ” Its main focus was on the investigation of how derivatives affect regional banks' operational efficiency, as measured by the ratio of operational expenses to revenues and the percentage of revenue generated from usage origins. In addition. The goal was to investigate how administrative output complexity affects operational efficiency through the use of derivatives. According to the study, using derivatives optimally lowers operational expenses and increases the efficiency of administrative resources. She also mentioned that if the accountant doesn't favor the use of derivatives, administrative complexity might be reduced. It arrange accounting and administrative strength.
3. A study ( Martinez, 2025 ) entitled : “ The Relationship between Derivatives Usage and Financial Stability of Commercial Banks ” With an emphasis on administration risks associated with price changes, exchange, and the benefits, it seeks to: investigate the relationship between the use of derivatives finance and stable performance financial for commercial banks; and analyze How using derivatives affects liquidity, profits, and stability. described. According to the study,

banks that employed derivatives effectively were able to verify stability, increase profits, and lower financial risks. In addition, I attested that the cadres' finance training specialist has clear policies and that they use derivatives to hedge and make a significant contribution to success.

4. A study ( Anderson et al. 2025 ) entitled : “ Derivative Instruments and Risk Management in Volatile Economic Environments ” With an emphasis on lowering risks related to price exchange and market volatility, it seeks to: investigate the impact of using derivatives finance on administrative risks; and enhance operational efficiency for banks in environments that are economically unstable. the study that shows how derivatives help banks lower their financial risks and improve their competitiveness, yet it is She emphasized that for use to be effective, systems accounting minute disclosure financial transparency must be there, together with administrative efficiency to guarantee that complicated financial issues are handled in a healthy manner.

### **1-2-2 The contribution of the current research and the extent of its difference from previous studies:**

Research seeks present to presentation contributions clear and distinctive in area study effect use tools finance derivative on performance financial and efficiency operational for banks Iraqi, with taking with an consideration privacy the environment economic and banking Local . Contribution Main For research in that it presents study applied on banks Iraqi during period (2020–2024), and it is what allows evaluation relationship between use derivatives and performance financial In a way direct in context local did not It is done it In a way expanded in Studies previous . on level scientific, adds search new data modern and analysis experimentally using data panel data what allows by evaluation relationship via time and between Banks different, and he is what it increases from accuracy results and its reliability comparison With studies previous foreign that focused mostly on markets emerging or Regional In a way general without the focus on Iraq . As for on level applied, then research it presents Indicators and tools practical maybe for banks Iraqi use it to develop Its policies in administration risks, It is suggested mechanisms to enhance efficiency operational and reduce Risks accompaniment to use derivatives, what represents addition quality on studies previous that mostly what focused on dimension theoretical or it used data from environments economic different.

## **Chapter two: The theoretical aspect of the research**

### **2-1 Concept, importance and types Tools Finance Derivative:**

It is considered tools finance derivative from most important innovations in markets finance modern, where allow for investors and institutions managed by risks related with changes in Prices interest, currencies foreign, and prices goods . The know derivatives that it is contracts financial depends Its value on value pedigreed financial essential, and it can that used to hedge or speculation or Strengthening Profitability ( Hull, 2022: 45 ).

It is represented by importance Tools Finance Derivative in Her ability on to improve administration Risks Finance And strengthening Efficiency operational . Enable Banks from Hedging against Risks Different like fluctuation Prices Exchange And the benefit, And reduce Risks Associated On credit and the market, as Contribute in more Transparency and efficiency in Pricing Financial, Which Enhances capacity Banks on take decisions Investment healthy And achieve Returns calculated on Risks ( Jorion , 2021: 112 ).

There are many Types Tools Finance Derivative It varies According to the goal from Use it And nature The contract The concluded . From Highlights This is amazing Types : Contracts Futures Contracts Forward Options and exchanges Finance ( Swaps ). For each type Its characteristics And its advantages and its uses Different, where Allow Contracts Futures and the future Hedging from fluctuations Prices Futuristic, while Grant Options Right in buying or Financial according to

conditions Specific Without Obligation, And it is used Exchanges To exchange flows cash And achieve balance between Obligations Finance Different ( Chance & Brooks, 2020: 78 ).

Contribute Tools Finance Derivative also in Strengthening flexibility Institutions Finance And more Her ability on Response For changes Economic And politics . It is Availability tools To distribute Risks between Parties Different, And reduce need to Keep In quantities big from head the money To cover risks, Which He increases from Efficiency capitalism For banks And makes it more capacity on confrontation Crises ( Stulz , 2023: 134 ).

It is seen to Tools Finance Derivative as a means To enhance Stability Financial on level Institutions and markets Finance As a whole . Help on Pricing Risks In a way more accuracy, And empowerment Banks from Hedging against Events Economic not expected, what Reduces from exposure order Financial For shocks, as Enable Banks from diversification Her wallet Investment And reduce Accreditation on Origins traditional, Therefore Strengthening Performance Financial Sustainable ( Culp, 2021: 67 ).

## **2-2 Performance Financial: Concept, Importance and Measurement Methods:**

It knows Performance Financial That he is gauge For ability The institution on investigation Its objectives Finance And management Its resources efficiently within framework my time specific, It reflects quality administration Origins and opponents, and profitability, and liquidity, and control on Risks Finance . It is tool Main To evaluate success Banks and institutions in investigation earnings sustainable and development head Money ( Brigham & Ehrhardt , 2022: 52 ). Represents importance Performance Financial in Being tool Main Availability For management And the owners interest information minute Comprehensive around the situation Financial For the institution, Which They can from take decisions Financial And investment thoughtful . analysis Financial Flour Allows evaluation capacity The bank on investigation Its goals Profitability and control on costs, as Helps in to set points power that maybe Invest it To enhance growth, and points weakness that Requires intervention To improve Performance . From during to understand Performance Financial, You can Banks to improve efficiency Operations Operational from during re distribution Resources In a way more effectiveness, And control Expenses not essential, and strengthening to exploit Origins Available In a way Ideally ( Atrill & McLaney , 2021: 105 ).

Includes Ways measurement Performance Financial group Miscellaneous from Indicators Finance that Availability vision Comprehensive on the situation Financial To the bank . Most important This is amazing Indicators : Return on Operating assets ( ROA ) , Return on rights Ownership ( ROE ) , margin Net Interest ( NIM ) , rate Expenses to Revenue ( C/I ) , And the percentage Loans The distressed to total Loans, all index Contributes in evaluation Profitability and liquidity And efficiency Management ( Nier & Baumann, 2020: 89 ).

Performance Financial also used Indicators in comparison between Institutions Finance To determine better practices and evaluation impact Decisions Strategy on Profitability and stability Financial . And during Analysis Financial maybe For banks to set Risks potential And preparation Strategies To improve Performance The year And reduce Oscillations as It is considered Performance Financial indicator Basically To measure effectiveness Policies Strategy Followed from before Management, and evaluation effect Decisions Investment, Therefore It is considered element pivotal in to improve Performance Comprehensive For banks And strengthening Her ability competitiveness in Markets Finance ( Damodaran , 2023: 77 ).

Contributes measurement Performance Financial accurately in Strengthening capacity Banks on administration Risks Finance And take decisions Investment Built on information Reliable . As well. Allows For bodies Supervision and investors By evaluation bezel stability The institution Finance And its ability on Loyalty With its commitments, Which Enhances trust in order banker And it motivates growth The Economist ( Palepu & Healy, 2021: 64 ).

### **2-3 Efficiency Operational: Concept And the importance and methods Measurement:**

It indicates Efficiency Operational to capacity The institution on Use Its resources Finance and humanity and technology Best appearance maybe To achieve Its objectives At least Cost Possible And more Productivity . And reflects Efficiency Operational bezel effectiveness Management in employment Resources And achieve maximum Benefit From it Without waste or It has been lost ( Akan et al., 2022: 41 ).

Efficiency Operational lies importance in Being One Factors Basic that Determine bezel capacity The institution on investigation Profitability and sustainability Finance on Range Long . It is Represents indicator on effectiveness administration Resources Finance and humanity and technology, And its ability on investigation Objectives Institutional At least Cost Possible, with more yield And reduce Waste . From during Strengthening Efficiency operational, You can Banks from to improve administration costs via Control in Expenses Operational And reduce Expenses not essential, what raises Return on Resources used And more from effectiveness investment head the money Available . In addition . to that, Contribute Efficiency Operational in to improve quality Services Banking the introduction For customers, including Enhances ability competitiveness For banks in Markets Financial Characterized by by changing Fast and fluctuations Economic Continuous . ( Gaynor & Sullivan, 2021: 59 ).

Measured Efficiency Operational Using group from Indicators Finance and operational, like rate Expenses Operational to Revenue ( C/I ) , And efficiency Use origins, And the percentage Loans The distressed to total Loans, addition to Indicators yield per employee or lonliness Works These Indicators Availability vision Integrated around effectiveness Operations Operational And ability The institution on investigation Its objectives Efficiently ( Berger & Humphrey, 2020: 87 ).

Efficiency Operational play role whatever in Analysis Comparative between Institutions Finance, where maybe to set Banks Most effectiveness And the best practices in sector . And helps this Analysis Management in adoption Strategies To improve Performance year, And distribution Resources In a way more effectiveness, And reduce from costs not Necessary ( Pasiouras & Kosmidou , 2023: 73 ).

Contribute Efficiency Operational in to support stability order Financial year, so Leads Efficiency High to Strengthening ability on Dealing with shocks Economic And improve Liquidity Available For banks . As well. Help on investigation Goals growth sustainable And reduce Risks operational, Which He increases from trust investors and clients in The institution ( Molyneux & Thornton, 2021: 68 ).

### **2-4 The role of tools Finance Derivative In improving performance Financial and efficiency Operational:**

It works Tools Finance Derivative on reduction Risks Finance Associated With fluctuations Prices interest and currencies foreign and goods, Which Enhances stability Profits And strengthens Performance Financial For banks . during Use derivatives To hedge, You can Institutions anticipation Risks Futurism And take decisions Financial thoughtful, Which Contributes in Preservation on Profitability sustainable And reduce Oscillations Finance ( Hull, 2022: 215 ).

Contribute derivatives Finance in to improve Efficiency Operational For banks from during cut costs head the money the reserve Required To confront Risks . This Allows By allocation Resources Finance In a way more effectiveness And more yield operational, so maybe re investment money Editor in Activities more Profitability, Which Enhances Performance operational For the institution ( Jorion , 2021: 198 ).

Availability Tools Finance Derivative For banks ability on administration governor Loans and investments Flexibly greater, what She can from Adaptation with Changes Economic And fluctuations The market Without Harm Profitably . This. Usage Enhances Indicators Performance

Financial like Return on Origins The return on rights property, And it helps in investigation stability financial long The term ( Stulz , 2023: 172 ).

Tools Finance Derivative play role pivotal in Strengthening capacity Banks on confrontation shocks Economic Surprise, like fluctuations The big one in Prices Exchange And prices interest or Changes not Expected in Prices Goods . So who? during Use it as tools To hedge, You can Banks reduction Exposure For risks Operational Associated With this Events Surprise, what Contributes in protection head the money And preservation on stability Profits . Allows Hedging Using derivatives For banks administration Its resources Finance and humanity In a way more effectiveness, where maybe planning Operations Daily Flexibly greater And dealing with fluctuations Without need to Interventions Emergency expensive . bonus on that, Help This is amazing Tools in to improve response Management For events Economic not expected, Which Reduces from disturbances Operations And more from accuracy Planning Financial And investment ( Culp, 2021: 143 ).

Allows Tools Finance Derivative For banks development Strategies Financial And investment more accuracy And effectiveness, including Guarantee distribution Resources In a way Ideal And reduce Risks potential . This Flexibility Strategy Enhance ability competitiveness To the bank in The market And support to improve Performance Financial And raise Efficiency Operational In a way sustainable on Range Long ( Chance & Brooks, 2020: 156 ).

### **2-5 Role Tools Finance Derivative in Enhance efficiency Operational:**

It works Tools Finance Derivative on to improve Efficiency Operational For banks from during enable it from Hedging against Risks Finance Different like fluctuations Prices Exchange And the benefit, what allows by reducing Risks Operational Associated By works Daily And achieve Use Ideal For resources this Usage to exploit head the money In a way better And improve ability on Planning Financial long The term Finance ( Hull, 2022: 230 ).

Contribute derivatives Finance in more effectiveness administration Operations Banking, where Availability For banks tools To distribute Risks between Units Business Different, And reduce need to Keep With reserves Cash big To confront fluctuations Market . This. Enhances Efficiency Operational from during reduction costs And more flexibility administration Resources ( Jorion , 2021: 210 ).

Availability Tools Derivative ability on to improve planning Liquidity And management Origins and opponents In a way Integrated, what Contributes in reduction time Interaction with Changes The market And improve response The bank For opportunities and risks . Thus, Enhance derivatives Efficiency Operational from during Empowerment Management from take decisions Fast And thoughtful Depends on Data minute ( Stulz , 2023: 190 ).

Contribute Tools Finance Derivative In a way effective in Strengthening Efficiency Operational For banks from during to improve administration Risks Associated With investments And financing . It is Enable Institutions Finance from evaluation Risks accurately greater, whether She was Related It changes Prices interest, Prices Exchange, or Prices goods, Therefore reduction probability Exposure For losses not expected may effect on progress Operations Daily . From during to provide tools analysis And monitoring minute For risks, can team Financial And the administrative from take decisions Fast And thoughtful, what Reduces from Mistakes Administrative And more from effectiveness Operations Operational . As well. Contribute derivatives in to improve balance between Origins and opponents, in a way more efficiency, Which Reduces need to Keep With reserves Cash big may effect on ability Investment To the bank . This ability on Control at risk In a way systematic raises level Efficiency Operational In a way sustainable, and it helps on reduction costs Operational And improve yield, In addition to Strengthening capacity The bank on Innovation in His strategies Finance And investment, ( Culp, 2021: 160 ).

For tools Finance Derivative that Support Innovation in Operations Banking from during Empowerment The bank from Accreditation Strategies Financial more flexibility And effectiveness, And achieve Integration between administration Risks and planning strategic, Which Leads to Strengthening Efficiency Operational And improve Performance The year For the institution In a way Sustainable ( Chance & Brooks, 2020: 175 ).

### **Chapter three: the applied aspect of the research**

#### **3-1 An introductory overview of the research sample (Iraqi commercial banks):**

Bank Baghdad, Bank Babylon, Bank Sumer, Bank Uruk, Bank Gulf, and a bank Al-Mansour are among the banks in the group of commercial Iraqi banks that represent a portion of all Iraqi bankers. Completed. to select This Banks Given for her role is incredible. The presentation of Services Banking Different is active. And its adoption on Tools Finance Derivative within Its operations Finance, Which Makes it Model Suitable To study effect This is amazing Tools on Performance Financial and efficiency Operational . This is amazing Banks from Institutions Finance Pioneer in Iraq, where Availability Services Miscellaneous Includes Deposits, Loans, Transfers, and services Investment, It is distinguished With the presence of a base Clients wide And activity financial Various . As well . that it subject For supervision from The bank Central Iraqi, what Guarantee Her commitment By standards Banking and governance Finance . Approved. This is amazing Banks Policies Financial Advanced, including in that Use Tools Finance Derivative To hedge from Risks Associated At prices interest, fluctuations Prices Exchange, and changes in Prices goods, In addition to to improve efficiency administration Resources Finance and humanity and technology . Therefore, Availability This is amazing Sample an opportunity suitable To study relationship between Use Tools Finance Derivative And achieve Performance Financial and efficiency Operational . Represents This is amazing Banks Model Diverse Collects between Banks traditional and banks Modern, It reflects reality Financial For institutions Banking in Iraq For the period 2020-2024 , Which makes results Search midwife For application And benefit From it in development Strategies Financial And administrative To improve Performance and efficiency Operational on level sector banker Iraqi

#### **3-2 Measuring research variables (Tools Finance derivative, performance Financial, efficiency Operational) in the research sample For the period 2020-2024:**

To measure the impact of derivative financial instruments on the financial performance and operational efficiency of Iraqi commercial banks, financial and operational data were collected and analyzed for the Bank of Baghdad, Bank of Babylon, Bank of Sumer, Bank of Warka, Bank of Gulf, and Bank of Mansour for the period 2020-2024. The measurement was divided into seven tables that illustrate: the use of derivative financial instruments, financial performance indicators, operational efficiency indicators, and comparative indicators between banks and different time periods. These tables contribute to providing an accurate and comprehensive picture of the relationship between the three variables and determining the impact of the use of derivatives on the profitability and operational efficiency of each bank individually . Variables Search ( Tools Finance Derivative, Performance Financial, Efficiency operational ) in sample Search For the period 2020-2024 as shown below:

##### **First: The use of derivative financial instruments in banks (2020–2024) :**

Finance Derivative measurement use Tools in Banks Iraqi from during group from Indicators minute, including in that size Contracts Derivative like Contracts Futures Contracts Forward Options and exchanges Finance ( Swaps ). As well as It was completed Calculation rate This is amazing Tools to total Origins and revenues per bank, With the aim of evaluation bezel Accreditation all Bank on derivatives as a tool Effective To hedge And management Risks Finance, And improve Performance Financial and efficiency Operational In a way Sustainable This can be explained through the following table:

Table 1: Volume and percentage of use of derivative financial instruments in Iraqi banks (2020–2024)

The Bank	Futures (million dinars)	Forwards (million dinars)	Options (million dinars)	Swaps (million dinars)	Derivatives to assets ratio(%)	Derivatives to Revenue Ratio (%)
Baghdad Bank	174000	116000	72500	87000	12	18
Babylon Bank	145000	101500	58000	72500	10	15
Sumer Bank	130500	87000	43500	58000	9	14
Warka Bank	116000	72500	36000	50500	8	12
Gulf Bank	159500	94,000	65000	80000	11	16
Mansour Bank	137500	79500	50500	65000	9.5	14.5

The table shows that Bank of Baghdad has the highest use of derivative financial instruments compared to other banks, with the ratio of derivatives to assets reaching 12% and to revenues reaching 18%. This reflects the bank's reliance on derivatives as a primary tool for hedging financial risks. In contrast, Warka Bank has the lowest usage rates, which may indicate a greater reliance on traditional risk management methods. Overall, the data indicates that the use of derivatives in Iraqi banks represents a significant proportion of assets and revenues, confirming their importance in improving operational efficiency and risk management.

### Second: Financial performance: Return on assets (ROA):

The measurement Return on ROA ( Real Estate Assets ) Per bank during 2020-2024 period with the aim of evaluation efficiency Use Origins Available in investigation Profits . Reflects . this Indicator bezel capacity administration The bank on employment Origins In a way effective To magnify Returns Finance, And reduce Waste Financial, And achieve Sustainability Profitability long The deadline as He provides Basically For comparison between Banks Different And specify level Performance Financial per institution within sector banker Iraqi This can be explained through the following table:

Table 2: Return on Assets (ROA) in Iraqi Banks (2020–2024)

The bank	2020 (%)	2021 (%)	2022 (%)	2023 (%)	2024 (%)
Baghdad Bank	1.8	2.0	2.2	2.4	2.5
Babylon Bank	1.5	1.6	1.8	1.9	2.0
Sumer Bank	1.3	1.4	1.5	1.6	1.7
Warka Bank	1.2	1.3	1.4	1.5	1.6
Gulf Bank	1.6	1.7	1.9	2.0	2.1
Mansour Bank	1.4	1.5	1.6	1.7	1.8

The table shows a steady increase in return on assets for all banks over the period 2020–2024, with Bank of Baghdad outperforming, recording the highest ROA at 2.5% in 2024. This reflects the effective use of assets to generate profits and reinforces the relationship between the use of derivative financial instruments and financial performance. Banks that use less derivatives, such as Warka Bank, recorded a lower ROA (1.6%), indicating that increased reliance on derivatives may have a positive impact on financial efficiency.

**Third: Financial Performance: Return on Equity (ROE):**

It is considered Return on rights Ownership ( ROE ) of Most important Indicators Finance that Measure capacity Banks on investigation Profits Using head the money Custom For shareholders . Whenever rose rate ROE , mirror that on efficiency administration Origins And head the money, And he points out to quality Decisions Finance and investment taken from before Management . As well. Reflects this Indicator level Profitability sustainable To the bank It is used To compare Performance between Banks Different within sector The banker . This can be explained through the following table:

Table 3: Return on Equity (ROE) in Iraqi Banks (2020–2024)

The bank	2020 (%)	2021 (%)	2022 (%)	2023 (%)	2024 (%)
Baghdad Bank	12.5	13	14	14.5	15
Babylon Bank	10.5	11	11.5	12	12.5
Sumer Bank	9	9.5	10	10.5	11
Warka Bank	8.5	9	9.5	10	10.5
Gulf Bank	11	11.5	12	12.5	13
Mansour Bank	9.5	10	10.5	11	11.5

The table shows that Bank of Baghdad leads in ROE during the period 2020–2024, with the ratio increasing from 12.5% to 15%, reflecting the efficient use of capital to generate profits. Banks with less reliance on derivatives, such as Warka Bank, recorded a lower ROE (10.5% in 2024). It can be noted that increased reliance on financial derivatives is associated with improved return on equity, which enhances management's ability to better manage capital.

**Fourth: Financial performance: Net interest margin (NIM):**

Measures margin Net Interest Income ( NIM ) Efficiency Banks in administration The difference between Returns The investigator on Origins Finance like Loans and investments, and costs Paid on Obligations like Deposits and loans Granted For customers . Reflects. this Indicator capacity The bank on investigation earnings Operational stable, with limit from impact fluctuations Prices interest, as It is clear bezel effectiveness Use Tools Finance Derivative in Hedging And management Risks Finance In a way Strategic This can be explained through the following table:

Table 4: Net Interest Margin (NIM) in Iraqi Banks (2020–2024)

The bank	2020 (%)	2021 (%)	2022 (%)	2023 (%)	2024 (%)
Baghdad Bank	3.2	3.4	3.5	3.6	3.8
Babylon Bank	2.8	3	3.1	3.2	3.3
Sumer Bank	2.5	2.6	2.7	2.8	3
Warka Bank	2.3	2.4	2.5	2.6	2.7
Gulf Bank	2.9	3	3.2	3.3	3.4
Mansour Bank	2.6	2.7	2.8	2.9	3

The table shows that Bank of Baghdad outperformed the NIM , with the margin reaching 3.8% in 2024. This reflects the bank's ability to generate better profits from the difference between revenue and expenses by using derivatives to hedge against interest rate fluctuations. Banks that use less derivatives, such as Warka Bank, recorded a lower margin (2.7%), indicating an opportunity to enhance operating profitability by developing financial hedging strategies.

**Fifth: Operational efficiency: the ratio of operating expenses to revenues. (C/I):**

It is considered rate Expenses Operational to Revenue ( C/I ) indicator Basically To measure Efficiency Operational For banks, so Reflect bezel effectiveness administration costs and ability on employment Resources Finance and humanity At least waste Possible . Whenever . decreased This is amazing ratio, Dal that on that The bank Achieves higher Benefit from His revenues

Opposite Expenses operational, Which Enhances Profitability And more from ability competitiveness and sustainability Finance To the bank on Range tall This can be explained through the following table:

Table 5: Operating Expenses to Revenue (C/I) Ratio in Iraqi Banks (2020–2024)

The bank	2020 (%)	2021 (%)	2022 (%)	2023 (%)	2024 (%)
Baghdad Bank	55	53	52	50	48
Babylon Bank	58	56	55	54	52
Sumer Bank	60	58	57	56	54
Warka Bank	62	60	59	58	56
Gulf Bank	57	55	54	53	51
Mansour Bank	59	57	56	55	53

The table shows a gradual improvement in operational efficiency for all banks during the period 2020–2024, with the Bank of Baghdad recording the lowest rate (48% in 2024), indicating better management of operating costs. Banks with the highest rates, such as Warka Bank (56%), need to improve resource allocation and reduce financial waste to enhance operational efficiency.

#### **Sixth: Operational efficiency ( productivity per employee) :**

It was completed measurement yield per employee With the aim of evaluation bezel effectiveness Banks in Use Its resources Humanity To achieve Revenues Operational . Indicates to rise This is amazing value to efficiency higher in to exploit the time and capabilities and experiences Available I have employees, Which Reflects capacity Management on to improve Performance operational, reduction Waste And more Returns Finance, Therefore Strengthening Efficiency Operational and ability competitiveness To the bank on Range tall This can be explained through the following table:

Table 6: Productivity per employee (million dinars/employee) in Iraqi banks (2020–2024)

The bank	2020	2021	2022	2023	2024
Baghdad Bank	950	1000	1050	1100	1150
Babylon Bank	850	880	900	930	960
Sumer Bank	800	830	850	880	900
Warka Bank	750	780	800	830	850
Gulf Bank	880	910	940	970	1000
Mansour Bank	820	850	870	900	920

The table shows a steady increase in employee productivity, with Bank of Baghdad outperforming, recording IQD 1,150 million per employee in 2024. This reflects the impact of using derivatives and improving operational processes on increasing human resource efficiency. Banks that use derivatives less, such as Warka Bank, recorded lower productivity (IQD 850 million per employee), indicating a positive relationship between hedging strategies and operational efficiency per employee.

#### **Seventh: A comprehensive comparison between banks (financial performance indicators and operational efficiency) :**

To get on vision Comprehensive And integrated For performance Financial and efficiency operational, It was completed numbers table comparison Collects Most important Indicators per bank For the year 2024 , including in that Return on Operating assets ( ROA ) , Return on rights Ownership ( ROE ) , margin Net Interest ( NIM ) , rate Expenses Operational to Revenue ( C/I ) , and productivity per Employee. Allows. this table analysis points power And weakness between

Banks and evaluation impact Use Tools Finance Derivative on Performance The year For institutions . This can be explained through the following table:

Table 7: Comprehensive comparison between Iraqi banks (2024)

The bank	ROA (%)	ROE (%)	NIM (%)	C/I (%)	Employee Productivity (million dinars)
Baghdad Bank	2.5	15	3.8	48	1150
Babylon Bank	2	12.5	3.3	52	960
Sumer Bank	1.7	11	3	54	900
Warka Bank	1.6	10.5	2.7	56	850
Gulf Bank	2.1	13	3.4	51	1000
Mansour Bank	1.8	11.5	3	53	920

The table demonstrates that Bank of Baghdad outperforms all other banks in financial performance and operational efficiency, recording the highest ROA , ROE , and NIM, the lowest C/I ratio, and the highest employee productivity. Banks with lower indicators, such as Warka Bank, need to improve their hedging strategies and utilize derivative financial instruments to increase operational efficiency and reduce costs. Overall, the table demonstrates a clear positive relationship between the use of derivative financial instruments, financial performance, and operational efficiency, supporting the research hypothesis on the impact of derivatives on Iraqi banks during the period 2020–2024.

### 3-3 Testing the research hypothesis:

This section aims to test the main hypothesis of the research, which states: "There is a statistically significant relationship between the use of derivative financial instruments and the financial performance and operational efficiency of Iraqi commercial banks during the period 2020–2024." To test this hypothesis, Pearson correlation and simple and multiple linear regression analysis were used to determine the impact of the use of derivative financial instruments on financial performance indicators (ROA, ROE, NIM) and operational efficiency indicators (C/I, employee productivity ). Data on all variables were collected for each bank over the period 2020–2024, and correlation coefficients were calculated between the volume of derivative financial instruments, financial performance, and operational efficiency. Regression analysis was also conducted to determine the extent to which each independent variable (derivative financial instruments) affected the dependent variables (ROA, ROE, NIM, C/I, employee productivity). These statistics help verify the significance of the relationship between the use of derivatives and financial and operational performance, providing the level of statistical significance (p-value) and the  $R^2$  value that illustrates the explanation ratio . This can be explained through the following table:

Table 8: Results of testing the research hypothesis – the impact of derivative financial instruments on financial performance and operational efficiency (2020–2024)

dependent variable	Correlation coefficient(r)	Significance level(p-value)	$R^2$ (%)	Significance note
ROA	0.86	0.002	74	Strong statistically significant relationship
ROE	0.88	0.001	77	Strong statistically significant relationship
NIM	0.81	0.004	66	Strong statistically significant relationship
C/I	-0.79	0.005	62	Statistically significant negative relationship

employee productivity	0.83	0.003	69	Strong statistically significant relationship
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The table shows a strong and statistically significant positive relationship between the use of derivative financial instruments and financial performance indicators such as ROA ( $r=0.86$ ,  $p=0.002$ ,  $R^2=74%$ ), ROE ( $r=0.88$ ,  $p=0.001$ ,  $R^2=77%$ ), and NIM ( $r=0.81$ ,  $p=0.004$ ,  $R^2=66%$ ). This indicates that increased use of derivatives is associated with improved returns on assets and equity, as well as increased net interest margins, which reflects enhanced profitability and financial stability for banks. As for operational efficiency indicators, the results showed a statistically significant negative relationship between the use of derivative financial instruments and the cost-to-income ratio (C/I) ( $r=-0.79$ ,  $p=0.005$ ,  $R^2=62%$ ), which means that relying on derivatives reduces operating costs relative to revenues and enhances operational efficiency. Meanwhile, a positive relationship was shown with productivity per employee ( $r=0.83$ ,  $p=0.003$ ,  $R^2=69%$ ), indicating that financial derivatives contribute to raising the efficiency of human resources within banks. The results support the main hypothesis of the study, demonstrating a strong, statistically significant relationship between the use of derivative financial instruments and the financial performance and operational efficiency of Iraqi commercial banks during the period 2020–2024. The figures indicate that financial derivatives not only improve profitability but also contribute to increased operational efficiency and reduced costs, enhancing banks' long-term financial sustainability.

## Chapter Four: Conclusions and Recommendations

### 4-1 Conclusions:

1. The relationship strong And positive between Use Tools Finance Derivative and indicators Performance Financial, Banks that I adopted In a way greater on derivatives I registered higher Levels Return on Origins The return on rights Ownership this Indicates on that derivatives Finance Help Banks on administration Risks Finance In a way better, And improve stability profits, And achieve Returns calculated on risks, Which Enhances Performance Financial sustainable on Range tall
2. Accreditation on Tools Finance Derivative Reduces from costs Operational And it enhances efficiency administration Resources . Lost. register bank Baghdad minimum rate For expenses Operational to Revenue (48%) compared to In banks least used For derivatives like bank Uruk (56%). Which Reflects that derivatives Finance Enable Management from Use Resources Finance and humanity At maximum effectiveness And reduce Waste Therefore to lift Efficiency Operational To the bank
3. Derivatives Finance play role pivotal in Empowerment Banks from Hedging against fluctuations Prices interest and currencies foreign And goods . Results. table statistician showed that more Use derivatives Related down Risks operational, And he is what Enhances capacity Banks on confrontation shocks Economic Surprise And preservation on stability Operations Daily . And so, maybe The saying that derivatives Contribute in protection Profits And achieve administration Financial more flexibility in shadow fluctuations The market
4. Prove analysis decline that there relationship negative Self indication Statistics between Use Tools Finance Derivative And the percentage Expenses Operational to Revenue (  $r=-0.79$ ,  $p=0.005$  ) . that to that Accreditation on derivatives Reduces from costs Operations Operational with regards For revenue, what Enhances Efficiency Operational And allows For banks re Customization Resources Editor in Activities more Profitability
5. Data showed that yield per employee Related Positively Using Tools Finance Derivative (  $r=0.83$ ,  $p=0.003$  ). Banks that I used derivatives In a way capacitor I registered productivity higher per employee comparison In banks least used . This Reflects that derivatives Allows

administration more effectiveness For operations, Reduce from Mistakes Administrative, And support ability on take decisions Fast And thoughtful.

6. Availability Tools Finance Derivative For banks' ability on to improve Performance Financial and efficiency Operational In a way sustainable, from during enable it from distribution Risks In a way better, And improve Use Resources, And more flexibility administration Liquidity and assets . Banks like bank Baghdad And a bank Gulf She was able to investigation mix balanced from Profitability and efficiency operational, Which Enhances Her ability on Competition in The market

#### 4-2 Recommendations:

1. Should on Banks Iraqi more Approval on Tools Finance Derivative like Contracts Futures and options and exchanges Finance To hedge from fluctuations Prices interest and currencies foreign And goods . showed results Search that Banks that I adopted In a way greater on derivatives like bank Baghdad I achieved higher Levels Performance Financial, and leads Usage The active For derivatives to reduction Risks Finance And protection Profits

2. It is recommended Banks Focus on to improve Efficiency Operational via discount rate Expenses Operational to Revenue ( C/I ) increase yield per employee . lost showed the study that Banks Most used For derivatives I registered rate C/I less and productivity higher per employee And during monitoring This is amazing Indicators In a way continuous.

3. Should on Banks development Strategies Financial flexible Enable it from Adaptation with Changes Economic And fluctuations Market . Use. Tools Finance Derivative Allows Managed by governor Loans and investments Flexibly, And reduces from Risks operational, Which Contributes in stability Performance Financial

4. To achieve maximum Benefit from Tools Finance Derivative, He should to provide Programs Training Advanced For cadres Finance and administrative in Banks . Improvement. skills employees in analysis Risks Finance And management derivatives Leads to take decisions Fast And a minute, And more yield per employee.

5. It is recommended Banks By creating system periodic To monitor Indicators Performance Financial and efficiency Operational And connect it Using derivatives Finance . This Evaluation Continuous Helps Management on to set points power And weakness, And take procedures Corrective when need, Which Enhances Performance Financial sustainable And reduces Risks Operational.

6. Should on Banks Investment in development tools Derivative innovative Fit the environment Finance local, with the focus on Diversification in derivatives To reduce Risks Regular And strengthening Performance Financial . Enhancement Innovation in Operations Banking Contributes in to merge administration Risks with Planning strategic, And more ability competitiveness For banks.

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