

## The effect of retained earnings in enhancing financial sustainability for the period (2016- 2021)

Khawla Radi torment

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**Abstract :** The current research aims to measure the retained earnings index and its reflection on financial sustainability, which consists of financing with retained earnings as an independent variable, in financial sustainability, which is measured through the ratios of net income to total assets (  $[\text{ROT}]_t$  ) and the previous year (  $[\text{ROT}]_{(t-1)}$  ) as a dependent variable, and to determine the type of relationship between research variables in banks, research sample And testing the hypothesis of correlations and analyzing them for the banks of the research sample. The research problem identified the following central question: Can the retained profits of the banks improve the financial sustainability of the research sample banks? Published on the website of the Iraq Stock Exchange for the period (2016-2021), the sample included (15) listed banks, and the (Eviews) program was used to extract the results of the normal distribution, descriptive statistics, the arithmetic mean, and the standard deviation. The results showed that the indicators of funding sources impact achieving financial sustainability.

**INTRODUCTION:** The effect of retained earnings on the performance of banks was an important issue and is still a matter of controversy on the one hand and financial sustainability on the other hand, among those interested in financial thinking or financial experts who bear the responsibility of procuring the necessary funds to finance the various activities of banks, therefore, given their importance in terms of banking and financial and economic development, And the accompanying achievement of financial sustainability, can contribute to revitalizing the economy and financing the banking development process, so retained earnings are considered one of the most important banking indicators through which they can fully reflect banking performance, as the issue of retained earnings is one of the important and main issues in management, Among the decisions related to the task of providing funds is determining the retained earnings and determining the percentage of financing with the retained earnings, as financial sustainability seeks to enhance the ability of banks to survive and continue their activity and the sustainability of their work in the competitive market. Through the fulfillment of its financial obligations and the continuation of its activity in the future, as the issue of retained earnings is of great importance in the various studies concerned with banks, due to the importance of this vital element for the continuity of banks and their ability to compete and face the threats of the banking environment, Which has become characterized by more aggressiveness and rapid change, so it always seeks to secure the necessary financing for banks in order to survive, expand, develop and compete.

As Iraq is one of the countries that have recently paid attention to financial sustainability in the field of fiscal policy due to the difficult conditions faced by many banks, the change in the political and economic system in 2003, burdens and debts have accumulated, and the costs of rebuilding what was destroyed by the war have risen, not to mention the increase in oil export capacity. Then revenues increased, and as a result, public spending increased on the one hand, and on the other hand, public spending increased, specifically current expenditures, all of which affected the financial sustainability of the research sample banks. . This research was divided into four topics:

**The first topic - research methodology**

**The second topic - the theoretical side**

**The third topic - the applied side**

**The fourth topic - conclusions and recommendations**

**The first topic**

**Research Methodology**

The methodology of the search is the starting point in searching for the essence of the problem of the search and its importance, as the researcher seeks through it to try to answer the cognitive problems that arise in it. To acceptable scientific results according to sound scientific foundations.

**First: the research problem**

The research problem stems from the financial banks, the research sample, as it lacks a diversified and efficient financial policy that achieves a higher return in light of various financial obligations of different terms, whether short, medium or long-term, through the formation of efficient retained earnings aimed at enhancing its financial

sustainability, but this Banks, and with the increase in the budget deficit, the public debt increases, and this means more accumulated burdens on financial resources that the state must adhere to and fulfill in the future, which leads to destabilizing financial sustainability and affecting it negatively, so the research tries to determine the central problem, what is the level of impact Profits retained on the financial sustainability of the banks, the research sample, and the following questions branch out from them:

- 1- Is there a relationship between the retained earnings and the financial sustainability of the research sample banks?
- 2- Are the banks under discussion able to achieve financial sustainability?

### **Second: the importance of the search**

Retained profits are considered one of the quick and important means that banks use to get out of the state of financial deficit, reach financial sustainability and reduce the risks to which banks are exposed, To all banks, because of the need of individuals for the economic services that they need in their daily lives, money in modern societies plays a major role in following up the needs and their diversity, how has the interest in financing increased and considered it an independent science, which in turn works to achieve financial sustainability and the continuity and survival of banks in the competition market Also, because it is a reason for the survival and continuity of the banks' work, the interest and maintenance of financial sustainability, which is very necessary for the survival of banks.

### **Third: Search Objectives**

This research aims to take a comprehensive look at the theoretical frameworks that determine the nature and channels of influence that retained earnings can exert on financial sustainability and the size of the impact that retained earnings can have on financial sustainability, in the field of enhancing banking activity in Iraq by analyzing the evolution of the retained earnings index For the research period (2016-2021) ,The research aims to achieve the following:

- 1- A search measuring the relationship between retained earnings and their role in improving the financial sustainability of the banks, the research sample, and thus improving their financial position on which banks depend and ways to increase and sustain them.
- 2- The retained earnings are of particular importance in terms of the way they measure the banks' reserves of funds and their impact on financial sustainability.
- 3- The research seeks to measure the direct effect between retained earnings and the financial sustainability of banks.
- 4- Determine the concept of financial sustainability by researching the most important intellectual sources.
- 5- Analyzing indicators of financial sustainability and indicating the extent of their decline and fluctuation.
- 6- Diagnosing and determining the retained earnings index and the financial sustainability index.

### **Fourth: search limits**

- 1- Spatial boundaries: commercial banks.
- 2- Time limits: It is represented by the commercial banks listed in the Iraq Stock Exchange, which is a sample of (15) banks and for the period (2016-2021).

### **The second topic the theoretical side**

#### **The first is: retained earnings**

That it is those profits that have been fully or partially reserved from the net profits by an administrative decision and after the approval of the General Assembly, as the administration prefers to resort to this source when wanting to expand and increase the volume of activity for ease of obtaining it, and the shareholders may not object to that, rather they prefer it so as not to be given the opportunity to do so The entry of new shareholders, and so that banks do not resort to borrowing through loans and bonds, in addition to that investment (retained earnings) will bring them a return that they may not achieve if they withdraw these profits and invest them in other areas (Al-Sunfi, 2013: 241). The bank's profits (after tax) are considered a clear source of financing for any business, and the profits can be used to finance current expenses, or the profits can be (reinvested in the business to finance capital expenditures) (Khidr, 25: 2022).

**The characteristics of retained earnings are:** (Jihad, 2014: 183)

- A- The cost of retained earnings is relatively low and equal to the opportunity cost of investing those funds in other areas.
- b- Obtaining retained earnings does not require many transactions and costs because the procedure remains internal
- C - The use of retained earnings does not result in any guarantees or mortgage of the Bank's assets, and its use does not lead to the approval or intervention of third parties.

**Disadvantages of retained earnings are:** (Al-Maghribi, 2019: 23)

A- Retained earnings may not be available to banks, especially at the beginning of their productive life, because retained earnings are accumulated amounts annually, and therefore the use of retained earnings is limited or non-existent in front of non-profit or modern banks.

b- Banks cannot use the retained earnings repeatedly and must wait several years for the retained earnings to double

C- The use of retained earnings may require the capitalization of all profits, i.e. the issuance of free shares to customers, which increases the expenses of using this source.

#### **Justifications for banks withholding part of the retained profits (Al-Assar, 2001: 99)**

A- Banks may be exposed to seasonal fluctuations or various risks that necessitate appropriating part of the profits and not distributing them.

B- The banks may be in the process of developing a program to reduce their debts and relying on their own financing sources.

C- The banks may be of the successful type that is increasing rapidly or achieving high profits, which requires repeated investment of these funds.

#### **Measurement of retained earnings**

It is the surplus money that can be distributed in the bank, as it is considered the best type of financing for the bank, due to the low cost of financing with the retained earnings, meaning that this cost is almost non-existent, and it is measured by dividing the retained earnings by the total liabilities and the right of ownership, and it is measured by the following formula (Al-Mayah , 2019: 8).

$$\text{Financing with Retained Earnings} = \frac{\text{Retained Earnings}}{\text{Total Liabilities and Equity}} \quad (1)$$

#### **Second: financial sustainability**

It is the ability of banks to increase the primary surplus, not only in the short term, but also in the long term, which is appropriate and large enough to cover its current debts. or has the ability to maintain or support banking programs in the future. In other words, fiscal sustainability refers to the ability of the government to maintain current policies without making major adjustments in the future (Al-Bayati, 202: 2022).

#### **The importance of financial sustainability for banks lies as follows: (Bartels et al, 2016: 24)**

- 1- Help reduce risks from the activities of banks and increase investment opportunities for their transactions.
- 2- Help in enhancing the bank's competitive position by improving its reputation and brand.
- 3- Achieving profits and preserving their existence and continuity (the work of the bank).
- 4- Raising the efficiency of operational activities through rationalizing resource consumption and reducing costs.
- 5- It works to increase the conviction of the workforce in the bank.
- 6- It enhances the bank's ability to plan strategically in the long term.
- 7- Contribute to helping the community to reach self-sufficiency and improve the standard of living, in both its total and partial aspects.

#### **Financial Sustainability Rules:**

There are a number of important rules that aim to achieve sustainability: (Al-Nuwairan, 2021: 186)

- 1- The Golden Rule: According to this rule, the state does not resort to borrowing except to finance investment expenditures, while current expenditures are financed from government revenues, whether tax or current.
- 2- The balanced budget rule: According to this rule, the occurrence of a deficit in the state's general budget is linked to exceptional circumstances only, and the budget is rebalanced with the disappearance of those conditions, that is, the state achieves surpluses in times of prosperity that are used to finance the deficit in times of economic recession, so it can To say that achieving equality in the public budget is not a condition in times of recession.
- 3- Flexible budget rules: This rule stipulates the need for flexible budget policies followed by banks in accordance with the prevailing economic conditions to expand the budget deficit in case of stagnation and avoid inflation (Uddah and Boushama, 2021).
- 4- The rule of investment sustainability: This rule intensifies the good use of public debt in investment projects by measuring its ratio to GDP, and that the ratio of public debt to GDP remain within specific levels that may not be exceeded (Raquob, 2018: 166). That is, most countries in the world, according to this rule, and the rules of the Maastricht Treaty, which stipulates that the total debt to GDP should not exceed 60% (Al-Nasrawi, 227: 2020).

#### **Measuring financial sustainability**

The financial sustainability of banks is measured through its relationship to the return on assets (ROA), which represents the profit margin and the asset turnover ratio, and through it the ability of banks to provide services is measured, and this cannot be compared in all banks (Lassala et al., 2017: 7).

As the return on assets is calculated using net income divided by total assets, which represents the profits of banks that are controlled through total assets, therefore a high return on assets indicates better financial performance and can be compared with banks of similar operating size (Al-Ibrahimi, 2021: 87-88).

$$\text{Return on Assets (ROA } t) = \frac{\text{Net Income}}{\text{Total Assets for the current year}} \times 100\% \quad (2)$$

$$\text{Return on Assets (ROT}_{t-1}) = \frac{\text{Net Income}}{\text{Total assets for the previous year}} \times 100\% \quad (3)$$

### The third topic

#### the first: Description and statistical analysis of the research variables

This research focuses on achieving and testing a set of hypotheses that employ a set of appropriate statistical tools and methods for the purpose of testing and verifying them. The focus is on financing with retained earnings for the period (2016-2021) of the independent variable, and the statistical description of the dependent variable, which is the return on assets ratio for the current year ( $ROT_t$ ) and the previous year ( $ROT_{t-1}$ ) for the fifteen banks.

#### 1- Financing percentage with retained earnings

From the results listed in Table (1), we find that the value of the general arithmetic mean is equal to (0.025188), and when comparing the calculated medians of the research sample banks, we find that the arithmetic mean of the index (financing ratio with retained earnings) for the Ashur Bank was the largest arithmetic mean compared to the rest. The research sample banks and the general arithmetic mean, as the value of the arithmetic mean for the Ashur Bank was (0.097332), and the lowest arithmetic mean for the indicator (the ratio of financing with retained earnings) was at the Erbil Bank for Investment and Finance with an arithmetic mean of (-0.00441), while the rest of the banks had medians different calculations during the time series (2016-2021), as shown in the table below.

For the purpose of diagnosing the normal distribution of the approved data, the (Jarque-Bera) indicator test will be relied upon, provided that the values are confined between (-3,3) and at the level of significance, as this indicates that the data is distributed normally, if the value of the level of significance is greater than (0.05), as we note that all the data of the banks, the research sample, for the indicator (financing ratio with retained earnings) had probability values greater than (0.05) (operations, 2020: 302), through these results we will accept the null hypothesis that states (the data of the ratio index Financing with retained earnings is distributed according to the normal distribution) and we reject the alternative hypothesis which states (that the data of the financing ratio with retained earnings are not distributed according to the normal distribution), so the data of the financing ratio with retained earnings will be distributed according to the normal distribution.

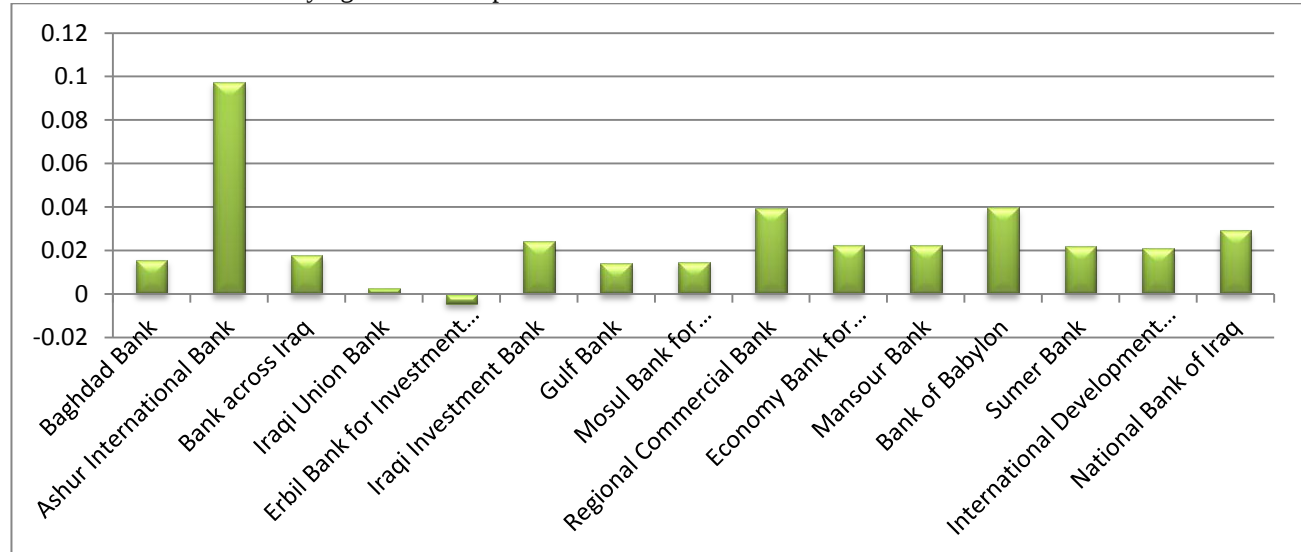
**Schedule (1)** The general rate of retained profits for each of the research sample banks for the period (2016-2021)

| Probability | Jarque-Bera | Arithmetic mean | standard deviation | bank                                                      |
|-------------|-------------|-----------------|--------------------|-----------------------------------------------------------|
| 0.23756     | 1.673976    | 0.007947        | 0.015682           | Baghdad Bank                                              |
| 0.352099    | 1.46069     | 0.193369        | 0.097332           | Ashur International Bank                                  |
| 0.674824    | 0.472459    | 0.016026        | 0.01765            | Bank across Iraq                                          |
| 0.765672    | 0.272796    | 0.00264         | 0.0025             | Iraqi Union Bank                                          |
| 0.242432    | 1.892677    | 0.015           | -0.00441           | Erbil Bank for Investment and Finance                     |
| 0.132614    | 1.67976     | 0.024244        | 0.024018           | Iraqi Investment Bank                                     |
| 0.463597    | 0.462031    | 0.009982        | 0.013865           | Gulf Bank                                                 |
| 0.124394    | 2.762728    | 0.005128        | 0.014805           | Mosul Bank for Development and Investment                 |
| 0.654093    | 0.342816    | 0.022388        | 0.039428           | Regional Commercial Bank                                  |
| 0.543253    | 1.242747    | 0.013513        | 0.022612           | Economy Bank for Investment and Finance                   |
| 0.892445    | 2.262617    | 0.01418         | 0.022307           | Mansour Bank                                              |
| 0.342561    | 1.672155    | 0.014371        | 0.039652           | Bank of Babylon                                           |
| 0.654756    | 2.52976     | 0.007359        | 0.022192           | Sumer Bank                                                |
| 0.563099    | 0.672069    | 0.006           | 0.020917           | International Development Bank for Investment and Finance |
| 0.086824    | 1.192459    | 0.024989        | 0.029265           | National Bank of Iraq                                     |
|             |             | <b>0.025142</b> | <b>0.025188</b>    | <b>The general arithmetic mean</b>                        |

We note from Table (1) that the arithmetic mean of financing with retained earnings for the banking sector amounted to (0.0252) with a standard deviation of (0.0251), while the highest arithmetic mean of financing with

retained earnings was from the share of the Ashur International Bank amounting to (0.0973), while the lowest arithmetic mean was It was the share of the Erbil Bank for Investment and Finance, as it amounted to (-0.0044), and other banks came, which had different arithmetic mean.

Figure (1) shows the percentage of financing with retained profits in banks, the research sample for the time series adopted in the research for the sample of banks, and the reasons for this decline are due to several factors, including security factors as a result of the deterioration of the security situation in the country and other economic factors, while the reasons for the increase are due to the improvement of conditions security in recent years, activating the investment law and diversifying the services provided to customers.



**Figure (1)** Scheme of the percentage of financing with retained earnings

## 2- Assets for the current year( $ROT_t$ )

From the results listed in Table (2), we find that the value of the general arithmetic mean is equal to (0.00984), and when comparing the calculated medians of the research sample banks, we find that the arithmetic mean of the index (assets for the current year ( $ROT_t$ )) of the International Development Bank for Investment and Finance It was the largest arithmetic mean compared to the rest of the banks in the research sample, as well as greater than the general arithmetic mean, as the value of the arithmetic mean of the International Development Bank for Investment and Finance reached (0.026658). And the lowest arithmetic mean for the indicator (assets for the current year ( $ROT_t$ )) was with Erbil Bank for Investment and Finance with a mean of (-0.00257), while the rest of the banks had different mean during the period (2016-2021) as shown in the table (2).

As we note that all the data of the banks, the research sample for the indicator (assets for the current year ( $ROT_t$ )) had probability values greater than (0.05), through these results we will accept the null hypothesis that states (that the data of the assets index for the current year ( $ROT_t$ )) are distributed According to the normal distribution (and we reject the alternative hypothesis that states (that the assets index data for the current year ( $ROT_t$ )) are not distributed according to the normal distribution), so the data of the (assets index for the current year ( $ROT_t$ )) are distributed normally.

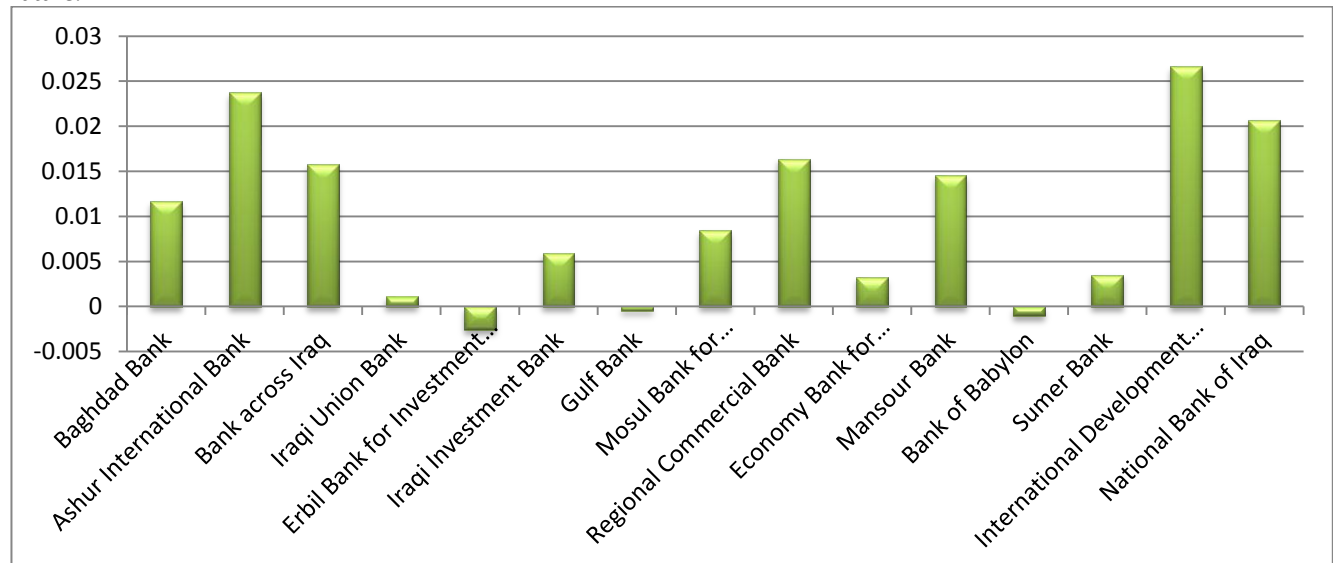
**Schedule (2)** The test of the normal distribution of the indicator of the return on assets ratio for the current year ( $ROT_t$ ) for banks, the research sample

| Probability | Jarque-Bera | standard deviation | Arithmetic mean | bank                                      |
|-------------|-------------|--------------------|-----------------|-------------------------------------------|
| 0.563632    | 0.672891    | 0.009088           | 0.011633        | Baghdad Bank                              |
| 0.093285    | 2.617037    | 0.009196           | 0.023712        | Ashur International Bank                  |
| 0.581361    | 1.781992    | 0.018453           | 0.015782        | Bank across Iraq                          |
| 0.079191    | 2.011444    | 0.001184           | 0.00112         | Iraqi Union Bank                          |
| 0.989805    | 0.210422    | 0.016955           | -0.00257        | Erbil Bank for Investment and Finance     |
| 0.561631    | 0.768893    | 0.006881           | 0.00592         | Iraqi Investment Bank                     |
| 0.097083    | 2.119034    | 0.006406           | -0.00043        | Gulf Bank                                 |
| 0.427361    | 1.341992    | 0.003356           | 0.00846         | Mosul Bank for Development and Investment |
| 0.076743    | 2.677446    | 0.007422           | 0.016365        | Regional Commercial Bank                  |
| 0.864802    | 0.923422    | 0.004678           | 0.003237        | Economy Bank for Investment and Finance   |

|           |          |                 |                |                                                           |
|-----------|----------|-----------------|----------------|-----------------------------------------------------------|
| 0.453255  | 1.823112 | 0.013714        | 0.014523       | Mansour Bank                                              |
| 0.575393  | 1.923232 | 0.017521        | -0.00106       | Bank of Babylon                                           |
| 0.089243  | 2.115201 | 0.002751        | 0.00353        | Sumer Bank                                                |
| 0.078251  | 2.023962 | 0.021688        | 0.026658       | International Development Bank for Investment and Finance |
| 0.0672537 | 1.823190 | 0.022196        | 0.020717       | National Bank of Iraq                                     |
|           |          | <b>0.010766</b> | <b>0.00984</b> | <b>The general arithmetic mean</b>                        |

We note in Table (2) the results of the analysis of the financial sustainability index for the ratio of net income to total assets ( $ROT_t$ ) for the banks accredited in the research, as the general arithmetic mean was (0.00984) and the general standard deviation was (0.010766) for the accredited banks. It was obtained by the International Development Bank for Investment and Finance for the aforementioned indicator, which amounted to (0.026658), with a standard deviation of (0.021688), while the lowest percentage was for the Erbil Bank for Investment and Finance, with an average of (-0.00257) and a standard deviation of (0.016955).

As Figure (2) shows the ratio of net income to total assets ( $ROT_t$ ) for the period from (2016-2021), and the financial ratio differed from one year to another due to the political and security conditions that the country went through and the spread of the Corona virus, which caused a big problem for banks, and some banks have worked on Developing the services provided to customers, and in turn the refineries achieve the continuation of their work in the future.



**Figure (2)** Net income to total assets ratio chart ( $ROT_t$ )

### 3- assets for the previous year ( $ROT_{t-1}$ )

From the results listed in Table (3), we find that the value of the general arithmetic mean is equal to (0.009404). And when comparing the calculated medians of the research sample banks, we find that the arithmetic mean of the index (assets for the previous year ( $ROT_{t-1}$ )) of the International Development Bank for Investment and Finance was the largest arithmetic mean compared to the rest of the research sample banks, as well as greater than the general arithmetic mean, As the value of the arithmetic mean of the International Development Bank for Investment and Finance reached (0.025237). And the lowest arithmetic mean for the indicator (Assets for the previous year ( $ROT_{t-1}$ )) was at Erbil Bank for Investment and Finance with a mean of (-0.0029), while the rest of the banks had different mean during the time series (2016-2021) As shown in Table (3).

As we note that all the data of the banks, the research sample for the indicator (Assets for the previous year ( $ROT_{t-1}$ )) had probability values greater than (0.05), through these results we will accept the null hypothesis which states (The data of the asset index for the previous year ( $ROT_{t-1}$ )) is distributed according to a normal distribution (and we reject the alternative hypothesis that states) that the data of the assets index for the previous year ( $ROT_{t-1}$ ) is not distributed according to a normal distribution (therefore, the data of the asset index for the previous year ( $ROT_{t-1}$ )) is normally distributed.

**Schedule (3)** The test of the normal distribution of the indicator of the return on total assets of the previous year ( $ROT_{t-1}$ ) for the research sample banks

| Probability | Jarque-Bera | standard deviation | Arithmetic mean | bank                                                      |
|-------------|-------------|--------------------|-----------------|-----------------------------------------------------------|
| 0.934626    | 0.231723    | 0.007201           | 0.011247        | Baghdad Bank                                              |
| 0.098136    | 2.651303    | 0.011432           | 0.024195        | Ashur International Bank                                  |
| 0.101183    | 1.934104    | 0.016106           | 0.014727        | Bank across Iraq                                          |
| 0.091813    | 2.361231    | 0.001253           | 0.001185        | Iraqi Union Bank                                          |
| 0.845803    | 0.904171    | 0.016774           | -0.0029         | Erbil Bank for Investment and Finance                     |
| 0.614252    | 1.871430    | 0.007042           | 0.006068        | Iraqi Investment Bank                                     |
| 0.556131    | 1.761341    | 0.006677           | -0.00053        | Gulf Bank                                                 |
| 0.084123    | 2.231038    | 0.002922           | 0.008187        | Mosul Bank for Development and Investment                 |
| 0.071813    | 2.341821    | 0.004729           | 0.015087        | Regional Commercial Bank                                  |
| 0.119621    | 1.936123    | 0.005003           | 0.003263        | Economy Bank for Investment and Finance                   |
| 0.090814    | 2.034412    | 0.009175           | 0.0124          | Mansour Bank                                              |
| 0.110781    | 1.989132    | 0.01691            | 0.00012         | Bank of Babylon                                           |
| 0.078129    | 2.487142    | 0.003231           | 0.003775        | Sumer Bank                                                |
| 0.791812    | 0.834141    | 0.021536           | 0.025237        | International Development Bank for Investment and Finance |
| 0.1121253   | 1.194113    | 0.020506           | 0.018992        | National Bank of Iraq                                     |
|             |             | <b>0.010033</b>    | <b>0.009404</b> | The general arithmetic mean                               |

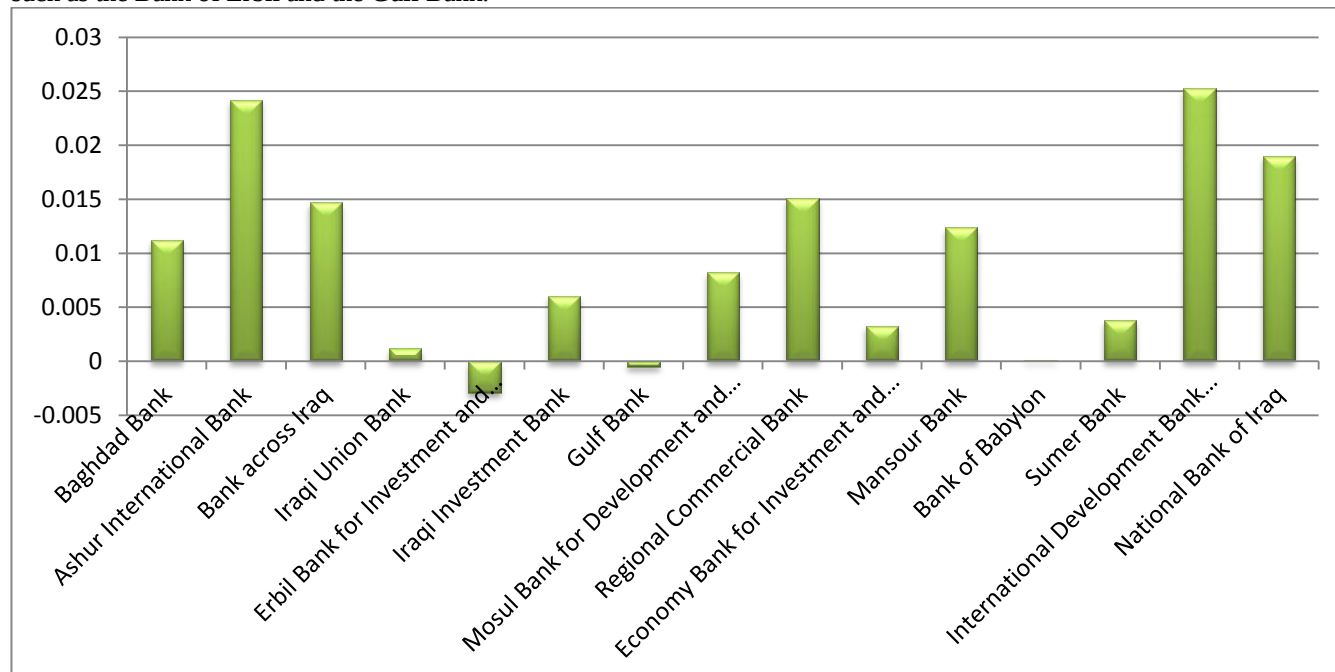
We note in Table (3) the results of the financial sustainability index analysis of the ratio of net income to total assets ( $ROT_{t-1}$ ) for the accredited banks in the research, as the general arithmetic mean (0.009404) and the general standard deviation (0.010033) for accredited banks, It is clear from the results of the analysis that the highest arithmetic mean obtained by the International Development Bank for Investment and Finance for the aforementioned indicator was (0.025237), with a standard deviation of (0.021536), while the lowest percentage was for the Erbil Bank for Investment and Finance, with an average of (-0.0029) and a standard deviation of (0.016774).

This indicator is considered part of the financial sustainability, which is used to find out the extent to which banks achieve financial sustainability, and by comparing the financial ratios for the years approved in the research, which determine the discrepancy in the ratios, and based on Equation No. (3), which was mentioned in the theoretical aspect, and the required results were reached that appear in Table (4)

**Schedule (4)** Ratio of net income to total assets for previous years ( $ROT_{t-1}$ )

| Arithmetic mean | 2021     | 2020     | 2019     | 2018     | 2017     | 2016    | bank                                                      |
|-----------------|----------|----------|----------|----------|----------|---------|-----------------------------------------------------------|
| 0.011247        | 0.02112  | 0.01783  | 0.00655  | 0.00381  | 0.00510  | 0.01307 | Baghdad Bank                                              |
| 0.024195        | 0.01608  | 0.03492  | 0.01294  | 0.01258  | 0.03602  | 0.03263 | Ashur International Bank                                  |
| 0.014727        | -0.00635 | 0.00861  | 0.00404  | 0.01842  | 0.02464  | 0.03900 | Bank across Iraq                                          |
| 0.001185        | 0.00206  | 0.00178  | 0.00297  | 0.00011  | 0.00016  | 0.00003 | Iraqi Union Bank                                          |
| -0.0029         | -0.01736 | -0.02590 | -0.00725 | 0.00465  | 0.01255  | 0.01592 | Erbil Bank for Investment and Finance                     |
| 0.006068        | 0.00161  | 0.00882  | 0.00003  | 0.00059  | 0.00691  | 0.01845 | Iraqi Investment Bank                                     |
| -0.00053        | -0.00986 | 0.00000  | -0.00680 | 0.00098  | 0.00527  | 0.00724 | Gulf Bank                                                 |
| 0.008187        | 0.00935  | 0.00354  | 0.00834  | 0.00631  | 0.01194  | 0.00964 | Mosul Bank for Development and Investment                 |
| 0.015087        | 0.01382  | 0.00781  | 0.01351  | 0.01730  | 0.01599  | 0.02209 | Regional Commercial Bank                                  |
| 0.003263        | 0.00014  | 0.00709  | 0.01072  | 0.00372  | -0.00302 | 0.00093 | Economy Bank for Investment and Finance                   |
| 0.0124          | 0.00631  | 0.00479  | 0.00529  | 0.01608  | 0.02855  | 0.01338 | Mansour Bank                                              |
| 0.00012         | -0.01061 | -0.02726 | 0.00352  | 0.01149  | 0.00308  | 0.02050 | Bank of Babylon                                           |
| 0.003775        | 0.00350  | 0.00304  | 0.00246  | 0.00232  | 0.00116  | 0.01017 | Sumer Bank                                                |
| 0.025237        | 0.01616  | 0.01774  | 0.06888  | 0.01178  | 0.01943  | 0.01743 | International Development Bank for Investment and Finance |
| 0.018992        | 0.02922  | 0.03141  | 0.01743  | -0.01310 | 0.00512  | 0.04387 | National Bank of Iraq                                     |

Figure (3) shows the ratio of net income to total assets ( $ROT_{t-1}$ ) for the period from (2016-2021), as there were similar banks with the same percentage achieved, such as the Assyrian International Bank and the International Development Bank, which achieved the highest percentage. From financial sustainability due to the services provided to customers and the interest in diversifying financing sources, but there are banks that did not achieve financial sustainability due to the economic conditions that the country went through and the emergence of the Corona virus, such as the Bank of Erbil and the Gulf Bank.



**Figure (3)** Net income to total assets ratio chart ( $ROT_{t-1}$ )

#### Second: Testing the correlation relationships hypothesis and analyzing it for the research sample banks

The current research includes a search of the correlation between the dependent variable, which is financial sustainability and its indicators, and the independent variable, which is represented by retained earnings and its indicator. By employing the simple Pearson correlation coefficient, then testing the significance of the correlation coefficient by employing the (T) test, and the current research will depend on the (Mukaka 2012:71) scale to determine the strength of the correlation between the research variables, as shown in Table (5).

**Schedule (5)** Standard strength coefficient of correlation

|             |           |            |           |           |                              |
|-------------|-----------|------------|-----------|-----------|------------------------------|
| 1.00-0.90   | 0.90-0.70 | 0.70 -0.50 | 0.50-0.30 | 0.30-0.00 | <b>degree of correlation</b> |
| Very strong | Strong    | Moderate   | Low       | Very low  | <b>link strength</b>         |

**Schedule (6)** Pearson correlation matrix between financing sources and their indicators and financial sustainability and their indicators

| financial sustainability | Assets for the previous year ( $ROT_{t-1}$ ) | assets for the current year $ROT_t$ | dependent variable |                 | the independent variable                    |
|--------------------------|----------------------------------------------|-------------------------------------|--------------------|-----------------|---------------------------------------------|
|                          |                                              |                                     | Engagement         | Sig. (2-tailed) |                                             |
| .871**                   | 0.733**                                      | 0.835**                             | Engagement         |                 | Financing percentage with retained earnings |
| .000                     | 0.000                                        | 0.000                               | Sig. (2-tailed)    |                 |                                             |
| 15                       | 15                                           | 15                                  | N                  |                 |                                             |
| .921**                   | .846**                                       | .875**                              | Engagement         |                 | retained earnings                           |
| .000                     | .000                                         | .000                                | Sig. (2-tailed)    |                 |                                             |
| 15                       | 15                                           | 15                                  | N                  |                 |                                             |

Through the results presented in Table (6), we find that there is a strong direct statistically significant correlation between retained earnings and assets for the current year ( $ROT_t$ ), where the estimated relationship was (0.875). And

the significant value of this relationship (Sig. (2-tailed)) is equal to (0.000), which is much smaller than 0.05 and 0.01, so this relationship is significant, which means rejecting the null hypothesis that states (there is no significant correlation Statistically significant between funding sources and assets for the current year (  $ROT_t$  ) and accepting the alternative hypothesis which states (there is a statistically significant correlation between funding sources and assets for the current year (  $ROT_t$  ).

#### 1- Correlation between retained earnings and assets for the current year ( $ROT_t$ )

Through the results presented in Table (6), we find that there is a strong direct statistically significant correlation between retained earnings and assets for the current year (  $ROT_t$  ) where the estimated relationship was (0.875). And the significant value of this relationship (Sig. (2-tailed)) is equal to (0.000), which is much smaller than 0.05 and 0.01, so this relationship is significant, which means rejecting the null hypothesis that states (there is no significant correlation Statistically significant between retained earnings and assets for the current year (  $ROT_t$  ) And accepting the alternative hypothesis which states (there is a statistically significant correlation between retained earnings and assets for the current year (  $ROT_t$  ).

#### 2- Correlation between retained earnings and assets for the previous year ( $ROT_{t-1}$ )

Through the results presented in Table (6), we find that there is a strong direct statistically significant correlation between retained earnings and assets for the previous year (  $ROT_{t-1}$  ) where the estimator of that relationship was (.8460). And the significant value of this relationship (Sig. (2-tailed)) is equal to (0.000), which is much smaller than 0.05 and 0.01, so this relationship is significant, which means rejecting the null hypothesis that states (there is no significant correlation Statistically significant between retained earnings and assets for the previous year (  $ROT_{t-1}$  ). And accepting the alternative hypothesis which states (there is a statistically significant correlation between retained earnings and assets for the previous year (  $ROT_{t-1}$  ).

#### Third: Analyze the effect results of the research variables

This research focuses on examining the relationships of the impact of the independent variables represented by retained earnings and their indicators on the dependent variable represented by financial sustainability and its indicators, which focuses on testing the main hypothesis, the first of which states that (there is a statistically significant effect of the variable of retained earnings in financial sustainability), and a set of hypotheses The sub will be proven from the context of the explanation.

For the purpose of testing the effect of retained earnings on financial sustainability, we will employ the simple linear regression equation defined by the following mathematical function:

$$y_i = \beta_0 + \beta_1 x_i + \epsilon_i \quad (4)$$

Since:

$y_i$  is the dependent variable

$\beta_0$  is the stability limit

$\beta_1$  is the marginal slope

$\epsilon_i$  is the random error term that is normally distributed with a mean of zero

$\sigma_i$  standard deviation

As for testing the effect of retained earnings indicators on financial sustainability indicators, it is possible by employing the multiple regression equation, which is defined by the following mathematical function:

$$y_i = \beta_0 + \beta_1 x_{i1} + \beta_2 x_{i2}, \dots, \beta_k x_k + \epsilon_i \quad (5)$$

Since:

$y_i$  is the dependent variable

$\beta_0$  is the stability limit

$\beta_1 \dots \beta_k$  is the feature vector

$e_i$  is the random error term that is normally distributed with a mean of zero

$\sigma_i$  Standard deviation

The above equation will be employed by examining the effect of the relationship of retained earnings indicators on financial sustainability indicators, and employing the (T) test, employing the (F) test, and the coefficient of determination or interpretation (R<sup>2</sup>) to find out the interpretation ratio of the independent variable from the dependent variable.

#### Coding variables and building regression models

The variables involved in building regression models can be encoded according to the following to build more clear regression models, as shown in Table (7).

**Schedule (7)** Shows the symbols for the independent variables and the dependent variables involved in building regression models

| The name of the dependent variable           | Variable symbol | The name of the dependent variable             | Variable symbol |
|----------------------------------------------|-----------------|------------------------------------------------|-----------------|
| financial sustainability                     | $Y_i$           | Retained earnings                              | $X_i$           |
| Assets for the current year ( $ROT_t$ )      | $Y_1$           | percentage of financing with retained earnings | $X_1$           |
| Assets for the previous year ( $ROT_{t-1}$ ) | $Y_2$           |                                                |                 |

Through table (7), regression models can be built that are compatible with the research hypotheses, according to the following:

### 1- The effect of retained earnings on financial sustainability

According to the current regression model, the financial sustainability variable represents the dependent variable that is affected by the retained earnings variable. This model can be formulated mathematically according to the following model:

$$Y_i = \beta_0 + \beta_1(X)_i + \epsilon_i \quad , i = 1, 2 \dots n \quad (6)$$

Since:

$Y_i$  is the financial sustainability variable

$\beta_0$  constant and vector term

$\beta_1$  represents the marginal slope of the above model

$(X)_i$  is the retained earnings variable

$\epsilon_i$  is the random error term that is distributed according to a normal distribution with a mean equal to zero and an variance equal to  $\sigma^2$

The results in Table (8) represent the impact of retained earnings on financial sustainability:

**Schedule (8)** It shows the estimated values of the parameters of the simple linear regression model between the two variables: retained earnings and financial sustainability during the years 2016-2021.

| Sig                                                                         | (F)<br>calculated * | financial sustainability                                                           |                   |                      | dependent variable                                               |
|-----------------------------------------------------------------------------|---------------------|------------------------------------------------------------------------------------|-------------------|----------------------|------------------------------------------------------------------|
| 0.000                                                                       | 9.281               | Sig                                                                                | (T)<br>calculated | value<br>( $\beta$ ) | the independent variable                                         |
| $Y = B_0 + B_1X_1$<br><b>predictive equations</b><br>$Y = 1.708 + 1.424X_1$ |                     | 0.001                                                                              | 3.702             | 1.708                | fixed limit                                                      |
|                                                                             |                     | 0.002                                                                              | 3.687             | 1.424                | retained earnings                                                |
|                                                                             |                     | <b>The coefficient of determination</b><br><b>The coefficient of determination</b> |                   |                      | <b>debugger</b> $R^2 = 0.823$<br><b><math>R^2 = 0.848</math></b> |

From the results listed in Table (8), we find that the value of the determination coefficient ( $R^2$ ) was (0.848) and the corrected determination coefficient was (0.823), which indicates that the regression equation is interpretable and high, which indicates that (82.3%) of the changes that occur in Financial sustainability is due to the retained earnings variable.

From the results of Table (8), we find that the calculated (F) value is (9.281), which is a significant value under the level of significance of 0.05.

From the results presented in Table (8), when retained earnings increase by one unit, financial sustainability will be affected by the increase by ( $\beta = 1.424$ ), which means that there is a positive and significant effect of the retained earnings variable on financial sustainability, and this leads to the possibility Saying that retained earnings will have a positive role in financial sustainability, this is evident through the (T) test for the beta value coefficient (B1), which reached (3.687), which is evidence of a significant beta coefficient under the significance level of 0.05. Through the above results, we accept the hypothesis that (there is a significant effect of the retained earnings variable on the financial sustainability variable) against any other hypothesis.

### 2- The impact of retained earnings indicators on assets for the current year ( $ROT_t$ )

According to the current regression model, a variable for assets for the current year ( $ROT_t$ )<sub>t</sub> represents the dependent variable that is affected by the retained earnings indicators. This model can be formulated mathematically according to the following model:

$$Y_1 = \beta_0 + \beta_1(X_1)_i + \epsilon_i \quad , i = 1, 2 \dots n \quad (7)$$

$Y_1$  is the assets for the current year ( $ROT_t$ )

$\beta_0$  constant limit

And the vector ( $\beta_1$ ) represents the feature vector of the above model

$(X_1)_i$  : is the percentage of financing with retained earnings

$\epsilon_i$  is the random error term that is distributed according to a normal distribution with a mean equal to zero and a variance equal to  $\sigma^2$ .

The results in Table (9) represent the effect of retained earnings indicators on assets for the current year ( $ROT_t$ ).

**Schedule (9)** It shows the estimated values of the parameters of the simple linear regression model between the two variables, the ratio of financing with retained earnings and the ratio of return on assets for the current year ( $ROT_t$ ) during the years 2016-2021.

| Sig                                                                                  | ( F ) calculated * | assets for the current year $ROT_t$                                                                                                                                |                |                   | dependent variable                                 |
|--------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------|----------------------------------------------------|
| 0.000                                                                                | 10.307             | Sig                                                                                                                                                                | (T) calculated | value ( $\beta$ ) | the independent variable                           |
| $Y = B_0 + B_1X_1 + B_2X_2$<br><b>predictive equations</b><br>$Y = 2.011 + 1.173X_1$ |                    | 0.007                                                                                                                                                              | 3.251          | 2.011             | <b>fixed limit</b>                                 |
|                                                                                      |                    | 0.001                                                                                                                                                              | 4.622          | 1.173             | <b>Financing percentage with retained earnings</b> |
|                                                                                      |                    | <b>The coefficient of determination</b> <b>debugger</b> <b><math>R^2 = 0.803</math></b><br><b>The coefficient of determination</b> <b><math>R^2 = 0.823</math></b> |                |                   |                                                    |

From the results listed in Table (9), we find that the value of the determination coefficient ( $R^2$ ) was (0.823) and the corrected determination coefficient was (0.803), which indicates that the regression equation is interpretable and high, which indicates that (80.3%) of the changes that occur in The assets for the current year  $ROT_t$  refer to the indices of retained earnings.

And from the results of table (9), we find that the value of (F) calculated (10.307), which is a significant value under the level of significance of 0.05, we conclude that the studied model between indicators of retained earnings and assets for the current year  $ROT_t$ , is very consistent with the phenomenon of the research sample.

From the results presented in Table (9), when the percentage of financing with retained earnings is increased by one unit, the assets for the current year  $ROT_t$ , will be affected by the increase by ( $\beta = 1.173$ ), (when the effect of the rest of the variables is constant), which means that there is A positive and significant effect of the variable of the financing ratio with retained earnings on assets for the current year  $ROT_t$ , and this leads to the possibility of saying that the financing ratio with retained earnings will have a positive role in the assets for the current year  $ROT_t$ , and this is evident through The (T) test for the coefficient of beta value ( $\beta_1$ ), which amounted to (4.622), which is evidence of the significance of the beta coefficient under the significance level of 0.05.

Through the results contained in Table No. (9) that indicate the acceptance of the hypothesis that says (there is a significant effect of the retained earnings indicators in the return on assets for the current year  $ROT_t$ ) against any other hypothesis.

### 3- The effect of retained earnings indicators on assets for the previous year ( $ROT_{t-1}$ )

According to the current regression model, the asset variable for the previous year ( $ROT_{t-1}$ ) represents the dependent variable that is affected by the retained earnings indicators. This model can be formulated mathematically according to the following model.

$$Y_2 = \beta_0 + \beta_1(X_1)_i + \epsilon_i, i = 1, 2, \dots, n \quad (8)$$

Since:

$Y_2$  is the assets for the previous year ( $ROT_{t-1}$ )

$\beta_0$  constant limit

And the vector ( $\beta_1$ ) represents the feature vector of the above model

$(X_1)_i$  : is the percentage of financing with retained earnings

$\epsilon_i$  is the random error term that is distributed according to a normal distribution with a mean equal to zero and a variance equal to  $\sigma^2$ .

The results in Table (10) represent the effect of retained earnings indicators on assets for the previous year ( $ROT_{t-1}$ )

**Schedule (10)** It shows the estimated values of the parameters of the simple linear regression model between the two variables, the ratio of financing with retained earnings and the ratio of return on assets for the previous year ( $ROT_{t-1}$ ) during the years 2016-2021.

| Sig                                                                         | (F) calculated | assets for the previous year $ROT_{t-1}$                                           |                |                   | dependent<br>variable                          |
|-----------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------|----------------|-------------------|------------------------------------------------|
|                                                                             |                | Sig                                                                                | (T) calculated | value ( $\beta$ ) | the independent variable                       |
| 0.000                                                                       | 12.825         |                                                                                    |                |                   |                                                |
| $Y = B_0 + B_1X_1$<br><b>predictive equations</b><br>$Y = 1.687 + 0.619X_1$ |                | 0.351                                                                              | 1.467          | 1.687             | fixed limit                                    |
|                                                                             |                | 0.000                                                                              | 4.137          | 0.619             | Financing percentage with retained earnings    |
|                                                                             |                | <b>The coefficient of determination</b><br><b>The coefficient of determination</b> |                |                   | <b>debugger R2= 0.719</b><br><b>R2 = 0.734</b> |

From the results listed in Table (10), we find that the value of the determination coefficient ( $R^2$ ) was (0.734) and the corrected determination coefficient was (0.719), which indicates that the regression equation is interpretable and high, which indicates that (71.9%) of the changes that occur in The previous year's assets ( $ROT_{t-1}$ ) refers to the indicators of retained earnings.

And from the results of Table (10), we find that the calculated (F) value is (12.825), which is a significant value under the level of significance of 0.05. Significantly with the phenomenon of the research sample.

From the results presented in Table (10), when the percentage of financing with retained earnings is increased by one unit, the assets of the previous year ( $ROT_{t-1}$ ) will be affected by the increase by ( $\beta = 0.619$ ), (when the effect of the rest of the variables is constant (Which means that there is a positive and significant effect of the variable of the financing ratio with retained earnings on the assets for the previous year ( $ROT_{t-1}$ ), and this leads to the possibility of saying that the financing ratio with retained earnings will have a positive role in the assets for the previous year ( $ROT_{t-1}$ ), and this is evident through the (T) test for the beta value coefficient ( $\beta_1$ ), which reached (4.137), which is evidence of the significance of the beta coefficient under the significance level of 0.05.

#### The fourth topic - conclusions and recommendations

##### First: conclusions

This topic presents the topic of the conclusions reached by the research in its theoretical and applied parts about the research variables, and what has been observed by searching the information shown in the previous tables and charts and from the banks of the research sample, the following conclusions have been reached:

- 1- Financial sustainability indicators are an urgent necessity for banks due to the many risks facing banks, and the presence of such an indicator helps the bank to determine if it is facing a financial crisis so that it can take appropriate measures in a timely manner to address it or limit or mitigate its impact.
- 2- We find the retained earnings available to the bank to finance its activities, and it varies from one type to another and makes it a priority to use it or put it as an alternative in the financing process.
- 3- Retained earnings are considered one of the most basic functions of banks, as they are guaranteed to continue and achieve financial sustainability.
- 4- The issue of financial sustainability is an important topic, as most banks followed the financial rules during the period (2016-2021) to ensure financial discipline and provide financial sustainability for banks.

##### Second :recommendations

This topic presents the subject of the recommendations reached by the research in its theoretical and applied aspects about the research variables, and what has been observed by searching the data shown in the previous tables and charts and from the banks of the research sample, the following recommendations have been reached:

- 1- The need for the management of banks to pay attention to the relationship between the retained earnings and the financial sustainability of the bank through the management of banks to measure the retained earnings of banks, and to determine the bank's needs for funds.
- 2- It is necessary to link the financial sustainability indicators according to their dimensions in order to develop and achieve the financial sustainability of the research sample banks as an indicator of the rate of return on assets.
- 3- Providing the appropriate environment for investment in terms of security, political and administrative stability, and holding awareness campaigns about the importance of investment and what it achieves by providing service at the required level to customers, which contributes to the continuity of banks to achieve financial sustainability.
- 4- The need to publish data related to financial sustainability according to clear classifications in the Iraq Stock Exchange, so that the relevant authorities can be informed of this data.
- 5- The banks listed on the Iraq Stock Exchange in general and the research sample in particular must rely on their internal sources of financing through retained earnings for the purpose of achieving the correct financial sustainability.

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