Study and Analysis of Optimal Portfolio of Investment in Banks

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Abstract - The current research aims to study and analyze the investment portfolio in banks and how to manage, study and analysis on the Iraqi banks period 2010-2018 to show the impact of the efficiency of the management of investment portfolio on the profitability of commercial banks listed on the Iraqi Stock Exchange. The study was conducted on all Iraqi commercial banks listed in the Iraqi financial market, where the researcher first calculated the 2012 index and the risk of the investment portfolio and the return of the investment portfolio, the banks, which represent the independent variable, return on investment and return on equity, and the risk-free return as control and subsidiary variables. A financial analysis aimed at identifying the effect of the efficiency of the management of the investment portfolio on the profitability of commercial banks. The results of the analysis were identical with the results of the statistical analysis, which was performed using the simple regression equation and multiple regression to identify the effect and correlation coefficient Pearson to identify the relationship between the independent variable and the dependent variable. The main results of the study were the absence of statistically significant impact on the level of risk-free return on The return on investment and the return on equity and the absence of statistically significant impact at the same level of return on the investment portfolio on both the return on investment and the return on equity and the existence of a statistical impact at the same time Wei risk investment portfolio on both return on investment and return on equity.

Keywords - Efficiency of Portfolio Management; Risk-Free Return; Portfolio Risk; Investment Risk; Iraqi Commercial Banks; Royalties on Property Rights; Investment.

I. INTRODUCTION

The investment occupies a major and important place in various developed and developing countries in order to achieve economic stability and raise the rates of economic development and development of national resources and work to satisfy their basic needs as investment began to deepen theoretical and practical because of the large and accelerated developments during the last century, specifically after the emergence of oil, Financial surpluses in these countries are looking for suitable investment outlets. Therefore, the idea of the investment portfolio, which is considered an important factor in the investment world, has emerged in order to achieve the greatest return possible with minimal costs and risks [2]. Hence, investment portfolios have become an important tool for operating money in commercial banks and relying on investment returns in investment portfolios is of great importance to commercial banks, which enhances the profits of the bank, supports its financial position and supports its competitive position in the market. The portfolio management process is a process of decision-making by monitoring the movements of operations knowing that the information on which the decision maker can rely is derived from two sources, the investment and the other source is the prices of the securities. The first source is the investor, its objectives and its financial needs and its impact on the surrounding areas [3]. Therefore, measuring the efficiency of investment portfolio management should be done by relying on several indicators that enable the investment portfolio manager to achieve the objective of establishing the portfolio. The most important indicators and methods used to measure the performance of the investment portfolio (Sharpe and Jensen Index) will be used in this study.

The evolution and evolution of the concept of a portfolio

The first to write in the investment portfolio is the American analyst Markowits in 1952 and then came the number of scholars and analysts such as Sharpe and Coren where these studies appeared in Britain and the United States during the fifties and sixties and a large number of banks and financial companies the main objective of the collection of savings from individuals Who cannot invest in order to invest this money properly to achieve good income for the bank and there were large numbers of savers and large amounts of savings, where it was the responsibility of these banks to exploit these funds the best exploitation. A large number of mutual funds such as the Civil Pension Fund, the Social Security Fund, the postal funds and other such funds have also appeared, but a number of banks and non-specialized financial institutions have been vanquished. Large sums of savings have

been collected and these are not specialized in portfolio management The foundations of the management of the portfolios failed to manage them and a large number of these institutions out of the market and remained financial institutions, which was managed by specialized specialists applied modern theories of financial portfolios in their various investments so they have been successful in their investment He called on researchers and scholars to focus on portfolio management [8].

Concept of portfolio

It is not reasonable for any investor to risk investing all his money available to invest in a single financial asset. This could result in heavy losses that could result in the loss of a large part of the wealth if the financial asset is to collapse in the financial market. It is common practice in the world of finance and investment that the investor does not put everything he owns in a single paper in accordance with the wisdom that says "do not put all the eggs in one basket" which is originally a popular example aimed at avoiding high risks. The risks associated with individual investments will be higher than if they were contained separately in a single portfolio (collective investment) assuming that the investor has chosen these investments very carefully and can create portfolios that are not limited to portfolios only. Financial, includes a variety of financial assets and in-kind (indirect) assets that have a connection to physical investment. Others define the portfolio as a compound instrument of investment instruments consisting of two or more assets, and may be managed by a person called the portfolio manager [4], [5], [6]. The portfolio manager will be its owner and may be in arrears and then its powers will vary according to the terms of the contract between him and the owner or Portfolio owners the investment portfolio is diversified in terms of diversification of assets. All assets can be real, such as gold, real estate, commodities, etc. They can also be financial assets such as stocks, bonds, financial instruments, treasury bills, etc. However, of the selected type I which it combines real assets and financial assets together.

Importance of the portfolio

The objective of the portfolio is to avoid the investment risk that the investor can be exposed to by diversification while ensuring an acceptable level of income. Focusing on one investment instrument, achieving positive returns, increasing the market value of capital and investment risk is the importance of the portfolio in analyzing, At work or in the market or in interest [1]. Now what is the importance of the portfolio in the analysis of investment risk?

- If the investment risk is related to the business and thus to the ability to meet through the portfolio, the investor can avoid these risks by creating a portfolio of financial securities that are not exposed to this type of risk such as government bonds and bonds.
- If the investment risk relates to the market so that the investor fears the opposite direction, in this case the market prices and thus the market value of the capital can be avoided such risks by investing in high quality financial instruments such as those belonging to institutions with a long history of success.
- For example, when interest rates rise in the market, the value of the bonds decreases and vice versa when interest rates fall, the value of the bonds increases and then short-term investment is used rather than long investment Term.

II. KEY OBJECTIVES OF THE PORTFOLIO

The objectives that investors aspire to in the area of investment in financial instruments include the following:

- The protection of the invested capital as the growth of the portfolio and its income helps to maintain the power of the original amount invested. Here the components of the portfolio are planned and the differentiation between fixed and variable income tools, whether to choose a mix and focus on one type.
- Achieving steady and stable income and this provides an opportunity for consumption or reinvestment achieved by the return to expand the portfolio.
- Diversification is the basic rule on which the concept of the portfolio is based. The portfolio manager should consider the cost of diversification, management, maintenance and the required information about the components of the portfolio. In this regard, there are types of diversification that depends on investing in an unlimited number of financial statements on a scientific basis the portfolio is like a correlation coefficient between its components, leading to a reduction in risk [9], [11].

Portfolio investment policies

When building an investment portfolio, the investor takes into account the policy that he intends to pursue and which is being built on. There are three main policies for managing the portfolio (Bouzid)

- Active or active strategy: This type of portfolio management is mainly aimed at obtaining capital gains due to the high market prices of the components of the portfolio. This portfolio is called the capital stock portfolio

and is characterized by high risks and often consists of ordinary shares. These portfolios achieve the best results at the expected times Rising stock prices.

- Conservative strategy: In this type, the objective of the portfolio manager is to reduce risk as much as possible and to focus on safety. The most appropriate financial instruments for this policy are fixed-income instruments such as preferred stocks and bonds because they provide stability and access to income. These portfolios are called income portfolios and, as mentioned above, provide a safety element for the capital of the investor.
- Balanced Strategy: This strategy achieves a relative stability in return at acceptable levels of risk. The bonds of all types are excellent. The components of the portfolio under this policy are diversified (ordinary shares within limits prevent the portfolio manager from investing and provide relatively stable income opportunities. These portfolios combine the offensive and the basic defense that is compatible with liquidity, safety and income.

The perfect investment portfolio

The ideal portfolio has no concept at all but is relative in order to diversify the views of investors. Definition of the ideal investment portfolio from the point of view of the rational investor the portfolio consists of a variety of balanced assets or financial instruments or is one of the most efficient portfolios that are suitable for the return / risk exchange model. The best portfolio is the following specifications [10]:

- To achieve a balance between investors between return and safety and assets are characterized by sufficient positive diversification.
- Portfolio instruments achieve liquidity or marketability that enables the manager to make any material adjustments.

The optimal investment portfolio theory is based on five main assumptions [7]:

- The investor considers each investment alternative from the perspective of the probability distribution of the expected return over a specified period of time.
- The investor aims at maximizing the expected benefit for one period and the benefit curve reflects a decrease in the marginal utility of wealth
- The investor considers the risk as indicating the volatility in the expected return
- The investor will build his decision on two basic variables: return and risk.
- All investors hate the risk and therefore if the investor to choose between two alternatives of the same degree of risk, he will choose the highest alternative return.
- The process of creating an investment portfolio requires the process of selecting the assets within the portfolio in a systematic manner that takes into consideration the risk and return on investment for these assets in order to achieve the most efficient swap between them [7] and to build an optimal financial portfolio [13].
- Determination of efficient portfolios

Selection from this group is the portfolio that maximizes the benefit of the investor to consider the following principles:

- We choose the lower risk securities when the returns are equal
- We choose the largest security return in the case of equal risk

Basis for measuring portfolio performance

The scientific principles of investment require investment decisions and policies, as well as the achievements of an ongoing evaluation process to determine their strengths and to evaluate the performance of portfolio management. The following principles must be taken into account [14].

- The measurement of the net asset value of the portfolio must be based on market or fair value rather than at historical cost.
- To compare the actual expected performance of these investments according to the financial market mechanism after taking into account the sensitivity of the assets of the portfolio represented by the beta of the portfolio.
- The return on investment approved should be the basis for assessing portfolio management performance, which is its return plus gains, which includes the income or income of portfolio investments or realized and unrealized capital losses that are normally generated by the volatility of the market value of the investment.

- The return on investment should be calculated after estimating the expected time interval of the expected cash flows from investments. This means that the discounted value of these flows should be calculated taking into account the timing of their occurrence.
- The assessment or measurement process should be carried out in the context of both the return and risk factors.
- The more accurate the results, the longer the time lag between the evaluation process and the subsequent one, but being too long reduces the benefits of the evaluation process as a monitoring and control tool.
- It is useful to compare the performance of the investment portfolio to the performance of the financial market as a whole, measured in a standard index or financial indicators.

Portfolio performance evaluation sharp indicator

The sharp index is calculated by dividing the average additional risk-free and wallet return on the standard deviation according to the following formula:

$$SI = \frac{R_P - R_F}{\sigma_P}$$

Where

R_P : Represents the return on the portfolio

R_F : Represents a risk-free return

σ_P : Total portfolio risk

The concept of profitability in commercial banks

Profitability is the primary objective of all banks to survive and manage through two important decisions:

- The investment decision which is based on the use of surplus funds available to the bank in investment opportunities and commercial banks rely on achieving a higher return than the weighted cost of the money and financing their investments usually from two main sources either through external financing or from borrowing from other banks or from other financial institutions In the foreign capital markets or through the internal financing through the owners either through the issuance of shares of voluntary reserves and retained earnings.
- The decision to finance the decision on how to choose the sources from which funds will be obtained from the Bank to finance investment in its assets in a manner that the Bank can manage to obtain through the use of fixed-cost borrowing for the risks that may result from over-borrowing.
- The concept of profitability is widely understood and has several areas. This concept is applied to every economic work that is used in it, unless it is attributed to a specific reference period of material, human and financial possibilities and expressed in relation to the outcome and the possibilities used.

Financial indicators used to assess profitability

Perhaps the most important and most commonly used financial instrument to assess the profitability of businesses, including banks, is the financial ratios that are usually derived from the published financial statements of those entities i.e. the income statement, the statement of financial position and, in some cases, the cash flow statement [12]. Of the financial ratios generally recognized in this area in general and without elaboration. The gross profit margin, operating profit margin, net profit margin, operating return on assets, return on assets, and finally return on equity [12].

Statistical treatments in research

The study will use the statistical analysis program SPSS (data processing to answer questions) and test its hypotheses according to the following statistical treatments:

- Descriptive statistics for the extraction of arithmetical averages and standard deviations of study variables to test validity of hypotheses.
- Simple regression analysis to test the validity of hypotheses and the effect of the independent variable on the dependent variable.
- Multivariate regression analysis and the effect of the independent variable and its dimensions on the dependent variable and its dimensions

- Pearson correlation coefficient to test the nature of the relationship between the independent variable and the dependent variable.
- The natural distribution test to test the data whether they are naturally distributed, such as the curvature index and the skewness.
- Linear interference test to confirm the appropriateness of data for the study model and the absence of high correlation between the independent variables (i.e., the absence of multiple linear interference between the independent variables)

Research Problem

The problem of research is to assess the extent to which non-credit activities contribute to the profitability of commercial banks which can be expressed in Iraqi commercial banks with the efficiency of investment portfolio management. The performance of the investment portfolios can be evaluated using several main indicators, the performance. This study examines the effect of the efficiency of investment portfolio management on the profitability of commercial banks. The study problem was formulated with the first main question:

- Is there an impact on the efficiency of portfolio management represented by the ROE?
- The return on the Iraqi commercial property rights represented by the return on investment and from which the following questions arise:
- Is there an impact of risk-free return on Iraqi commercial banks?
- Is there an impact on the return of the investment portfolio in Iraqi commercial banks?
- Is there an impact on the investment portfolio's return on equity and investment in Iraqi commercial banks?
- Is there a trace of both portfolio and portfolio risk factors on return on investment?
- Is there an impact on the return on equity of both portfolio and portfolio risk factors?
- The second main question is:
- In the ranking of the performance of portfolio managers in Sharp How can the index of commercial banks be used?

Objectives of the research study

The present research study aims to achieve the following objectives:

- Provide information on the importance of investment portfolios as an asset of the Commercial Bank
- To shed light on the foundations and policies used in the management of investment portfolios in Iraqi commercial banks
- Study the impact of the efficiency of the management of the investment portfolio on the profitability of Iraqi commercial banks
- Evaluating the performance of investment portfolios in Iraqi commercial banks

Research importance

The study derives its importance from the importance of the role of the investment portfolio in Iraqi commercial banks in maximizing the profitability of these banks on the one hand and as a tool for customer service. The importance of the investment portfolio stems from the fact that it is based on the collection of investment instruments that reduce the risk of investment and this is what investors want to meet their needs in financial markets Which requires the use of scientific methods in making investment decisions, which emphasizes the importance of diversification in reducing the risk of investment in the framework of the investment portfolio, in addition to that there are several ways to build investment portfolios and there is a possibility to Investments in the portfolio in more than one way and this requires comparison between the performance of several portfolios to access the best method of evaluation. In this sense, the importance of the study stems from the fact that it seeks to evaluate the efficiency of the management of investment portfolios, which may have a role in enhancing the performance of Iraqi commercial banks.

Research hypotheses

The study will be based on the following assumptions:

First Hypothesis H01: There is no statistically significant effect at the level of significance of α0.0.05 for the efficiency of portfolio management represented by Sharp index on profitability of Iraqi commercial banks.

The main hypotheses are:

- The first hypothesis h01: There is no statistically significant effect at α00.05 level of risk-free return on return on investment and return on equity in Iraqi banks.

- The second hypothesis h02: There is no statistically significant effect at the level of α0.05 of the return of the investment portfolio on both return on investment and return on equity in Iraqi commercial banks.
- The third hypothesis h03: There is no statistically significant effect at the level of α0.05 of the risk of the investment portfolio on both return on investment in Iraqi commercial banks and return on equity.
- The fourth hypothesis h04: There is no statistically significant effect at the level of α0.05 of Sharpe index elements on risk-free return and portfolio risk in commercial banks.
- The fifth hypothesis h05: There is no statistically significant effect at the α0.05 level of the Sharpe index on return on equity and portfolio risk in commercial banks.

The boundaries of the study

Time limits: study conducted 2010-2018, Spatial boundaries: the study was conducted on Iraqi commercial banks only after the exclusion of both non-Iraqi commercial banks operating in Iraq and Islamic banks.

III. RESULTS

Descriptive analysis of study variables

The descriptive statistical analysis tools were used for the study variables derived from the published financial data for the study sample during the period from 2012 to 2014, through which the following descriptive indicators were derived:

- The arithmetic means of variable values over three years
- The median, which represents the median value, ie the value that lies in the middle of the variable values.
- Standard deviation, which represents the extent of the dispersion of the values of the variable around its arithmetic mean, noting that the higher the index, the greater the dispersion of values around its arithmetic mean.
- The minimum and maximum values of the variable and indicate the extent of fluctuation occurring in the values of the variable, taking into account that the greater the fluctuation range, the greater the volatility in these values and vice versa.
- Spreading and subtraction of values of variables, two additional indicators to confirm the extent of fluctuation in the flattening and the elongation of the values of variables and the higher each of the increased volatility and also two indicators of the normal distribution test.
- Below and by table 1 will make clear that data and analysis of descriptive variables independent variables control variables dependent.

Table 1: Data and analysis of descriptive variables independent variables

The variables	Arithmetic mean	Median	Standard deviation	Lowest value	Highest value	Skewness	Kurtosis
S.I.	0.1977	0.1013	1.1498	-4.0517	3.0819	-0.936	4.358
R_P	0.0483	0.0428	0.0142	0.0345	0.0675	0.547	-1.541
R_F	0.1297	0.1012	0.2474	-0.4321	0.8175	0.502	1.052
σ_P	1.2311	0. 2382	2.7754	0.0346	11.5708	3.079	8.837
ROI	0.0138	0.0141	0.0043	0.0024	0.0205	-0.858	0.732
ROE	0.0969	0.0930	0.0313	0.0199	0.1544	-0.331	0.173

From Table 1, the following can be inferred

- The values of the independent variables in their entirety are more dispersed around their computational environment than the values of the dependent variables in terms of both: their standard deviations as well as the wide range of the upper and lower values and then the index of the torsion.
- Among the independent variables, Sharpe and portfolio risk were more discrete compared to the other two independent variables: portfolio return and risk-free return.
- As for the related variables, with the relative decrease in their value in general, the return on investment was the least dispersed from the other index.
- As for the natural distribution test, the torsion indicators are used to make the data as an appropriate measurement. According to Hair 2003, the data should be naturally distributed. The range of spacing between (-1,1) and the appropriate range of spacing (-3,3) should be.

- The researchers consider the natural distribution test to be necessary for small samples and not for large samples, according to the central limit theory. Large samples with more than 30 views are considered.

Table 2. shows that the torsion values range from (-0.936,3,079) as all values are within the above range except for portfolio risk because they are more dispersed than other variables.

Table 2: The torsion values range

The variables	Sharp Index	Outcome free from Risk	Outcome from investment portfolio	Risk of investment portfolio	Outcome on investment	Outcome own rights
Sharp Index	1					
Outcome free from Risk	-0.479**	1				
Outcome from investment portfolio	0.674**	-0.405*	1			
Risk of investment portfolio	-0.052	0.197	0.109	1		
Outcome on investment	-0.080	-0.187	-0.071	-0.493**	1	
Outcome own rights	-0.044	-0.234	-0.070	-0.402*	0.893**	1

*at level of significance = 0.05
**at level of significance = 0.01

Referring to the above table, the following is clear:

- The Sharpe index has a negative correlation between it and the risk-free return and a positive correlation between it and the return on the investment portfolio, with a correlation coefficient of -0.479 and 0.674 respectively. The risk is leading to a drop in the Sharpe index and vice versa. As for the return on the investment portfolio, the rise of the Sharpe index and vice versa, because the high risk-free return leads to a reduction of the Sharpe index and its decline leads to an increase because the high risk-free return leads to a reduction the so-called risk premium.
- For the risk-free return, there is a significant negative correlation with the return on the investment portfolio where R = -0.405 means that the increase in the risk-free return reflects negatively on the portfolio's return and vice versa.
- As for the return on the investment portfolio, there is a positive correlation between the Sharpe index and R = 0.674 and a negative correlation with the risk-free return where R= -0.405

IV. CONCLUSIONS

In the light of the above analysis, we will cover the findings of the study. The results of the tests and the financial indicators used to study the effect of the efficiency of portfolio management on the profitability of commercial banks revealed the following:

The values of the independent variables in their entirety are more dispersed around their computational properties than the values of their respective dependent variables in terms of both their standard deviations as well as the range of the upper and lower values and then the torsion and spacing indices. Among the independent variables, Sharpe and portfolio risk were the most dispersed compared to the other two variables, portfolio return and risk-free return. The percentage of dependent variables with relatively low dispersion in their values in general but the return on investment was less dispersed than the other index. The results revealed a statistically significant effect of the independent variable on the dependent variables. The results revealed that there is a statistically significant effect of the elements of the Sharpe index on the return on investment

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