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#### Abstract

The research tool consisted of quantitative models to evaluate the performance of the financial management leaders represented by (Sharp, Treynor, and Jensen) indicators to evaluate the performance of the investment banking portfolio for six years (2010-2015). The results showed a discrepancy between banks' portfolios performance among the indicators used for the test. In conclusion, banks should study all aspects of return and risk levels and use diversification to obtain an optimal portfolio of investments to avoid the risks of significant economic fluctuations.

**Keywords**: Performance, evaluation, investment, banking, portfolio.

## Desempeño de la cartera de inversión bancaria según los indicadores de investigación aplicada

#### Resumen

La herramienta de investigación consistió en modelos cuantitativos para evaluar el desempeño de los líderes de gestión financiera representados por los indicadores (Sharp, Treynor y Jensen) para evaluar el desempeño de la cartera de banca de inversión durante seis años (2010-2015). Los resultados mostraron una discrepancia entre el desempeño de las carteras de los bancos entre los indicadores utilizados para la prueba. En conclusión, los bancos deben estudiar todos los aspectos del rendimiento y los niveles de riesgo y utilizar la diversificación para obtener una cartera óptima de inversiones para evitar los riesgos de fluctuaciones económicas significativas.

Palabras clave: desempeño, evaluación, inversión, banca, cartera.

## **1. INTRODUCTION**

The investment portfolios of the relatively modern financial sciences in the world of finance and business come from the nature of diversity in the available investment tools and the variety and diversity of financial and economic markets characterized by large changes and high degree of impact in the manifestations of financial and economic globalization; the most important of which are economic openness and technological development, especially in the field of communications and relations, as well as the large amount of surplus funds. This

research attempts to give a clear methodological idea in the subject of investment banking portfolio and how to construct, manage and evaluate it in statistical methods as tools for measurement and financial analysis of the investment.

The research hypothesis was derived after the extrapolation of its variables and the content of the research. It consists of one variable, which is the investment banking portfolio. Performance evaluation is a research tool. Therefore, three main hypotheses can be formulated as follows: The performance of the investment banking portfolio of sample research varies according to Sharpe indicator. The performance of the investment banking portfolio of sample research varies according to Treynor indicator. The performance of the investment banking portfolio of sample research varies according to Jensen indicator.

## 2. METHODOLOGY

The researchers adopt the analytical descriptive approach in dealing with the problem of research and presentation of the subject, and will be adopted in the practical aspect of the preparation of tables and portfolios of investment banks and their assessment and show which banks better for their portfolios to prove the validity of assumptions or not. Researchers relied on quantitative indicators in the measurement of research as shown in Table (1):

No Variables Scale

The Details

1	Model Sharp	Rp -Rf St=σ	St represents portfolio performance, Rp portfolio return, RF risk free return, σ standard deviation.
2	Model Treynor	$=\frac{\frac{Tn}{Rn-Rf}}{\beta n}$	Tn is the code of Treynor Measurement, Rn portfolio return, RF risk free return and β is the portfolio risks.
3	Model Jensen	Rn - Rf = a + $\beta$ (Rm - Rf)	Rn is the portfolio return rate, RF risk free return, a is the manager predictability, β is systematic risks, Rm Return of the market portfolio
4	Capital Market Line	$slop Cml = \frac{Rm - Rf}{\sigma}$	Slop Cml represents the capital market line,Rm represents market return, RF is a risk-free return, σ represents the standard deviation.

Table 1: Measurement Tools

Then in 1976 (Ross) developed the mentioned modal to the theory of expected prices which based on the section of alternatives and the comparison between the revenue and risk, which means the lower risk securities shall be selected when the revenues being equal (Shabib, 2010), and there were many additions to the theory of the investment portfolio during the period of the 1970s of the twentieth century, specifically after the successive economic developments and the high value of financial surpluses of various companies, banks and investment funds thus the investment companies were formed that manage funds through funds or portfolios to optimize the utilization of funds (Yang et al., 2019; Soo et al., 2019).

The concept of the investment portfolio raised from the nature and behavior of the investor and his decisions in relation to the balance between revenue and risk and the trend towards maximizing

preference the highest revenue at its lowest level (Shabib, 2010), the investment portfolio is a combination of tools Such as stocks, bonds, derivatives, deposits, bank acceptances, real instruments such as real estate, precious metals, etc. Financial investment including stocks, bonds and financial investment is more accurate than any other investment to contain expected value and future revenues (Nusairat, 2005; Shabib, 2010; Cota et al., 2017). Expansion of the activity of investment funds and portfolios of companies and the verifying of available investment tools. Typical investment of available financial resources and interest in achieving financial investments.

All the literature related to the investment portfolios indicates and agree on the objective of establishing the portfolio is to achieve the greatest revenue possible with less risk while providing the liquidity, at the same time the balance between revenue and risk. The following is a summary of the investment portfolio objectives (Shabib, 2010; Hasibuan et al., 2019). Protecting the original capital of the portfolio and not risking it, although the investment process means acceptance of risk. Achieve optimal portfolio revenue for the least risk. To provide an adequate amount of liquidity by investing the convertible securities to cash as fast as possible, called "National Currency" (Indriastuti, 2019; Thiab, 2008; Almarjoshi, 2008).

Evaluation models of investment portfolios performance: The essence of the valuation process for the investment the portfolio is the individual performance of the company and its comparison with market performance. Three models for valuation will be selected: (Sharp, Treynor and Jensen samples) as stated by (Shabib, 2010). Sharp Model to evaluate the performance of investment the portfolio: This model indicates that the performance of portfolio can be measured by comparing the performance of portfolio with the capital market line. If the performance of the portfolio is higher than the market line, the performance is good, but if it is equal to the market line, if it is below the market line, the performance is acceptable, and if it was lower than market line, the performance is unacceptable and measured as in the following equation (Zubaidi, 2016; Abadi, 2016; Shaker Mehdi Rahimi & Zare, 2016).

## **3. RESULTS ANALYSIS**

The process of assessing the performance of the investment portfolios is a complex process with several variables. In the current paragraph, these variables will be determined before starting the evaluation process. The information to be provided for the valuation process is the risk-free revenue Rf, average market revenue Rm, the calculate the equation of the market line in order to compare the performance, in addition to the revenues of shares for the research sample for the period (2010-2015). Risk-free revenue (Rf): The Interest rate on short-term government investments. The risk-free rate of return has been given increased attention by investors and managers of investment portfolios for companies and banks. Investments are allocated in the light of interest rates and risk-free revenue (Rf). Published in the statistical publications of the Central Bank of Iraq as shown in table (2) below (Alkasasibah, 2011).

Years	2010	2011	2012	2013	2014	2015
RF	0.072	0.069	0.070	0.066	0.051	0.051
Table	2: Free-	Risk Re	venue fo	or the peri-	od (2010 -	- 2015)

Source: Statistical publications issued by the Central Bank of Iraq Directorate General of Statistics and Research for years of research

Average market revenue Rm: The annual revenues of the market portfolio represent the change in prices between one year and other, and it can be reached to the annual market prices based on the total monthly prices achieved by all listed companies in the Iraqi Stock Exchange as shown in table (3):

10	2011	2012	2013	2014	2015
31	0.347	0.081	0.095	0.178	0.268
	<b>10</b> 31	<b>10 2011</b> 31 0.347	10         2011         2012           31         0.347         0.081	10         2011         2012         2013           31         0.347         0.081         0.095	10         2011         2012         2013         2014           31         0.347         0.081         0.095         0.178

Table 3: Average Market Revenue RM for the period (2010 - 2015)Source: annual reports issued by Iraqi Stock Exchanges for the period

## (2010 - 2015)

Capital Market Line: represents the relationship between the expected revenue and risk for all portfolios with risk-free or risky investments. If the portfolio consists of risk-free investments only, the rate of revenue will be the rate of risk-free revenue (Rf). If the portfolio is a risky investment, the investor expects to receive additional revenue called risk premium, which is determined in the market and considered as Bank's evidence to avoid risk and the margin of revenue resulting from the risky investments. The risk premium is achieved through the total portfolio risk, and the best revenue for the risk is any standard deviation of instrument available in the market and

Bank	2010	2011	2012	2013	2014	2015
Kurdistan International						
Bank	35	37.56	1.49	3.92	17.97	29.05
National Bank of Iraq	25.9	27.8	1.1	2.9	13.6	21.5
Iraqi Middle East Bank	4.709	5.05	0.20	0.53	2.47	3.909
Ashur International						
Bank	13.350	14.329	0.567	1.49	7.010	11.08
Baghdad Commercial						
Bank	4.39	4.71	1.86	4.92	2.31	3.64
Dar Al-Salam Bank	9.96	10.69	8.26	1.11	3.77	8.26

can be calculated through the following equation and its results are shown in Table (4):

Table 4: Capital Market Line for the years (2010 - 2015)

Shares revenue of the sample research for the period (2010 - 2015)

Bank	2010	2011	2012	2013	2014	2015
Kurdistan	0.091	0.160	0.113	0.121	0.095	0.106
International Bank						
National Bank of Iraq	0.020	0.020	0.150	0.090	0.030	0.010
Iraqi Middle East	0.130	0.185	0.162	0.139	0.014	0.022
Bank						
Ashur International	0.109	0.119	0.111	0.080	0.039	0.043
Bank						
Baghdad Commercial	0.137	0.190	0.140	0.130	0.111	0.023
Bank						
Dar Al-Salam Bank	0.016	0.103	0.153	0.110	0.077	0,077

Table 5: Represents the shares revenue of the investment

portfolio of sample research for the period (2010 - 2015)

Performance analysis of the bank portfolios through the three indicators (Sharp, Treynor and Jensen). Sharp Index to Evaluate Portfolio Performance: This sample indicates that portfolio performance can be measured by comparing the performance of the portfolio with the capital market line. If the performance of the portfolio was higher than the market line, the performance is good, but if it was equal to the market line, the performance is acceptable and if

it was less than the market line, performance is unacceptable and measured as in the following equation (Alfaouri, 2012).

Bank	2010	2011	2012	2013	2014	2015	Average
Kurdistan	2.57	13.51	5.81	7.43	5.95	7.16	7.07
International							
Bank							
National	-5.2	-4.9	8	2.4	-2.1	-5.3	-7.1
Bank of Iraq							
Iraqi Middle	10.55	16.73	16.72	13.27	-6.73	-5.64	7.49
East Bank							
Ashur	1.91	2.58	2.01	0.72	-0.62	-3.85	0.46
International							
Bank							
Baghdad	20.50	10.84	12.14	10.85	10.17	11.54	12.67
Commercial							
Bank							
Dar Al-Salam	-	13.08	31.92	16.92	10	9.23	13.10
Bank	21.54						

Table 6: Evaluate the performance of investment portfolios according to the Sharp equation for banks Sample for the period

## (2010-2015)

Table (6) shows that there is a difference between the performances of the investment portfolios of the sample banks. Table (7) shows the level of evaluation of the investment portfolios of research sample through the use of the equation of market line as reflected in the table that all banks are under zero, except Ashur International Bank, which amounted to (57.345).

Bank	2010	2011	2012	2013	2014	2015	Average
Kurdistan	0.331	0.339	0.080	0.356	0.184	0.268	0.260
International							
Bank							
National Bank	0.331	0.347	0.081	0.095	0.187	2.203	0.540
of Iraq							
Iraqi Middle	0.99	0.002	0.070	0.069	0.065	0.074	0.063
East Bank							

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Ashur	0.326	0.341	0.081	0.094	0.184	2.385	57.345
International							
Bank							
Baghdad	0.330	0.080	0.080	0.029	0.186	0.215	0.033
Commercial							
Bank							
Dar Al-Salam	0.259	0.346	0.215	0.095	0.098	0.215	0.197
Bank							

Table 7: Evaluate the performance of investment portfolios using the equation of the market line for the banks Sample for the period (2010-2015)

Table (8): shows the performance evaluation of investment portfolios by comparing the performance of the portfolio with the performance of the market. It shows that the Kurdistan International Bank, Iraqi Middle East Bank, Baghdad Commercial Bank and Dar Al-Salam Bank portfolio was a good performance, while the performance of National Bank of Iraq and Ashur International Bank was unacceptable.

Bank	Average of	Average of	Description
	portfolio	market	
	revenue	revenue	
Kurdistan International	7.07	0.260	Good
Bank			
National Bank of Iraq	-7.1	0.540	Unacceptable
Iraqi Middle East Bank	7.49	0.063	Good
Ashur International	0.46	57.345	Unacceptable
Bank			
Baghdad Commercial	12.67	0.033	Good
Bank			
Dar Al-Salam Bank	13.10	0.197	Good

Table 8: Comparison of the revenue of investment portfolio for all banks with the market revenue of the research sample and the description

Treynor index to evaluate Portfolio Investment Performance: The Sharp model has indicated that portfolio efficiency is measured by risk measured by the standard deviation of portfolio revenues, while the Trainer index is based on a beta coefficient in portfolio valuation. The risk premium takes both of the securities and the beta then finds the expected beta coefficient for the portfolio. This model excludes irregular risk as the portfolio is able to avoid it through diversification.

Bank	2010	2011	2012	2013	2014	2015	Average
Kurdistan	0.020	0.10	0.048	0.057	0.046	0.055	0.054
International Bank							
National Bank of	-0.08	-0.075	0.12	0.042	-0.032	-0.047	-0.012
Iraq							
Iraqi Middle East	0.12	0.019	0.119	0.15	0.008	0.007	0.071
Bank							
Ashur International	0.003	0.002	0.002	0.001	-0.001	-0.001	0.001
Bank							
Baghdad	0.009	0.018	0.010	0.009	0.008	-0.004	0.008
Commercial Bank							
Dar Al-Salam Bank	-	0.006	0.015	0.008	0.005	0.004	0.005
	0.010						

Table 9: Evaluate the performance of the investment portfolios according to Treynor equation for banks Sample of the period (2010-

#### 2015)

Table (9) above shows the average performance of the investment portfolios for a period of six years from (2010) to (2015). The index shows the level of zero, except for the National Bank, the value was negative (-0.012).

Bank	Average	Average	Description
	portfolio return	market return	
Kurdistan	0.054	0.260	Unacceptable
International Bank			

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National Bank of	-0.012	0.540	Unacceptable
Iraq			
Middle East Bank	0.071	0.063	Good
Ashur International	0.001	57.345	Unacceptable
Bank			
Baghdad	0.008	0.033	Unacceptable
Commercial Bank			
Dar Al- Salam Bank	0.005	0.197	Unacceptable

Table 10: Comparison of the return of the investment portfolio of each bank with the market return of the research sample and description of each portfolio

Table (10) describes the evaluation of the performance of investment portfolios by comparing the average of the valuation using the Treynor indicator and the average market. The table above shows that the investment portfolios are not acceptable except for the Middle East Bank of Iraq where the portfolio is good. Evaluating the performance of the portfolio based on the use of the Jensen indicator: When we want to measure the performance of the investment portfolio through the Jensen indicator, we rely on the available data. Through the use of regression analysis, the value of (a) is obtained by which we measure the performance of the portfolio. If the value of (a) is greater than zero, the portfolio is efficient compared to the market portfolio. If the result is zero, the portfolio performance is equal to the performance of the market portfolio according to the model shown in Table 11.

Relation	2010	2011	2012	2013	2014	2015
Rm	0.331	0.347	0.081	0.095	0.187	0.268
Rf	0.072	0.069	0.07	0.066	0.051	0.053
а	0.04	0.06	0.07	0.05	0.08	0.04

Bank	2010	2011	2012	2013	2014	2015	Average
Kurdistan	0.040	0.063	0.070	0.050	0.081	0.042	0.058
International							
Bank							
National Bank	0.002	0.019	0.001	0.002	0.012	0.011	0.008
of Iraq							
Middle East	0.002	0.018	0.008	0.016	0.12	0.009	0.029
Bank							
Ashur	0.003	0.043	0.009	0.002	0.014	0.013	0.014
International							
Bank							
Baghdad	0.040	0.062	0.070	0.050	0.080	0.041	0.057
Commercial							
Bank							
Dar Al- Salam	0.021	0.017	0.008	0.015	0.116	0.091	0.045
Bank							

 Table 12: Evaluating the performance of investment portfolios

 according to the Jensen Indicator

The results of Table (12) indicate that the investment portfolios are inefficient for all banks the sample of the research.

## 5. CONCLUSIONS

The investment portfolio is of interest to businessmen and investors as it represents the proceeds of the total sources of funding and the allocation of these funds in the investments of interest to the banks sample research. There is an interest in optimizing the resources available in investments that achieve the returns that the Investor Bank is looking for. There are realization and awareness of the importance of diversifying investments in order to avoid potential risk. Banks vary in terms of the rate of return on assets (return on investment) significantly during the years of research, which is considered high for one year and low for another year as well as the difference between a bank and another, indicating the volatility of economic conditions since 2003 until the present time.

The situation of banks should be improved, especially after the deterioration of previous years due to political, economic and security problems. Encourage banks to hold other investment instruments as they are considered profitable investments such as options for buying and selling and exchange contracts, which constitute a suitable combination of portfolios. Support and develop the securities markets in order to know and study the Iraqi market and know the performance levels of companies in general and banks in particular and facilitate the procedures for the sale of shares and bonds, subscriptions and participation and disengagement in order to increase economic growth. Study all the problems experienced by banks.

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