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Article

Measuring the Impact of Operational Performance on Market Value in Private Iraqi Commercial Banks Using a Panel Data Model

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Abstract: The research aims to assess the impact of performance and on the added market value of private commercial banks in Iraq during the study period (2016-2021), using a Panel Data model. The study focuses on examining how operational performance and the level of risks affect the added market value of private commercial banks in Iraq. The study provides a comprehensive analysis over time and across various banks, aiding in understanding the developments and relationships throughout this time period. The results of this study can contribute to improving strategic management and decision-making within the Iraqi banking sector during this timeframe.

Keywords: banks, operational performance, market value added

1. Introduction

Private Iraqi commercial banks are a vital cornerstone in the financial system, playing a fundamental role in financing the economy and enhancing the growth of various sectors. Like other banking sectors around the world, this sector faces increasing challenges in a dynamic and constantly changing economic environment. Among these challenges, the importance of examining the impact of operational performance on the market value of banks during a specific period becomes apparent [1-2].

This study takes initiative in exploring this vital topic, aiming to evaluate how operational performance affects the market value of private Iraqi commercial banks during the research period (2016-2021). Using panel data analysis, the study will conduct comprehensive analysis spanning across different years and banking institutions, with the objective of understanding the interactions and developments that may influence this important sector [3-5].

2. Materials and Methods

Market Value - Concept, Analysis, and Measurement

2.1. Market value

Market value is defined as the true value of an institution, whether it is a financial or production institution [6]. Market value (MV) is also defined as the perceived value of the institution in the market, equaling the perceived present value of the institution's future cash flows.

Market value added is one of the most important methods used to evaluate the financial position of an institution, through which the net value of the institution to shareholders can be evaluated [7].

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As for the market value of stocks, it is the price of the stock in the market when it is offered for sale, or it is the value of the stock when it is offered for sale on the stock exchange (the financial market) [3].

2.2. Advantages of market value

Market value has several advantages, among the most important of which are the following [8]:

- Market value of stocks is determined simply (through the market).
- Market value is one of the best indicators of the institution's ability to meet its obligations.
- Stock prices in financial markets are determined without referring to operational activities in the institution.
- The change that occurs in the stock price in the financial market reflects the economic benefit resulting from investing in the financial market.

2.3. Market Value Added (MVA)

Market Value Added (MVA) is one of the most common criteria for evaluating the performance and operational efficiency of the institution in numerical terms and can be derived by the difference between the market value of the project and the book value after adjusting some data [9].

The Market Value Added indicator measures the difference between the market value of invested capital and its accounting value. If Economic Value Added (EVA) represents an index of value produced over a certain period, then Market Value Added (MVA) takes into account the total expected future cash flows [10].

Market Value Added also represents the current value of invested capital in the past and present. Others believe that Market Value Added is based on comparing invested capital with the market value of capital. There should be a logical relationship between Market Value Added and economic profit, as Market Value Added should be equal to the current value of economic profit [11].

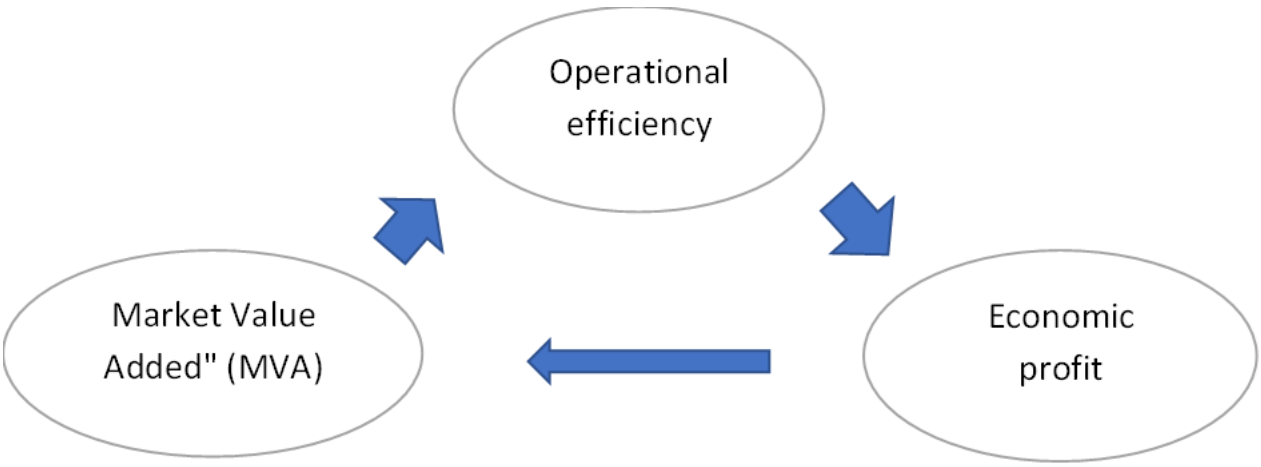

Figure 1. Operational efficiency mechanism

In other words, Market Value Added (MVA) represents the increase in wealth resulting from investing in a company's stocks, which becomes more attractive when the company generates profits, making it a magnet for investors [12].

MVA can be considered as the opposite of Economic Value Added (EVA), where EVA evaluates internal performance while MVA assesses external performance (how the market evaluates the company's performance) [13].

The Market Value Added metric focuses on the difference between the market value and the book value of a company's assets or the difference between the market capitalization of the company and the equity rights of shareholders [14].

Every financial institution aspires to achieve the highest market value in the stock market. However, this goal is hindered by the presence of competitors, as the market is a competitive arena where no institution can expect to maintain a consistent level of market value over long periods. The value of a stock reflects the company's position, including its profitability and its past and potential future trends. Market Value Added (MVA) is one of the important options to reward shareholders (investors) by achieving positive added market value. The current market value can be calculated by multiplying the market value per share by the total issued shares by the institution, which serves as a measure of the company's presence in the market. Subtracting the book value of equity (invested capital) from the market value yields Market Value Added (MVA) [15].

2.4. Methods of calculating Market Value Added

Net Equity Approach: In this method, the market value of long-term debts is assumed to remain constant, and its book value must be equal.

$$\mathbf{MVA = MVE - BE} \quad \text{……. (1)}$$

Where:

MVA: Market Value Added,

MVE: the market value of the company's shares (number of shares × share price),

BE: the book value of equity (as shown in the bank's financial statements).

2.5. Economic Market Value Added Discounting method

This method implies that the realized return must exceed the cost of capital. This means that when a company's shares are sold in the market at a premium, positive Market Value Added is achieved, and vice versa. According to this relationship, Market Value Added (MVA) is the current value of the Economic Value Added (EVA) of the bank, expected in the future. In other words, this method discounts the cash flows realized from Economic Value Added (EVA) at a discount rate equal to the weighted average cost of capital [16].

$$\mathbf{MVA=} \frac{EVA}{(1+WACC)^1} + \frac{EVA}{(1+WACC)^2} + \frac{EVA}{(1+WACC)^3} \quad \text{……..(2)}$$

Where:

MVA: Market Value Added

EVA: Economic Value Added

WACC*: Weighted Average Cost of Capital

2.6. Market-to-book ratio [17]

Market Value Added is calculated using this method by dividing the market price per share (market value) by the book value per share (shareholders' equity). If the result is greater than one, it indicates that the institution has good performance and efficiency as evaluated by investors, reflected in the rise of stock prices in the market, exceeding the

book value. The higher the ratio above one, the better the performance and efficiency. If the ratio equals one, the financial market's assessment of the institution is considered neutral. However, if the ratio is less than one, the financial market's assessment of the institution is deemed poor, as the market value has not exceeded or even equaled the book value.

$$\mathbf{MVA = MVE / BEE} \quad \text{…… (3)}$$

It can be calculated as follows [18]:

- Summing up all the institution's funds, whether from shareholders or from retained earnings earmarked for investment.
- Reclassifying certain expenses (such as research and development expenses).
- Calculating the actual value of the institution's shares and adding them to the total debt of the institution using the current market prices of those shares, resulting in a market value representing the institution's market value. If the Market Value Added is positive, it means that the institution has succeeded in achieving.

Operational efficiency and wealth creation for shareholders go hand in hand. Conversely, if it is negative, meaning that the market value is less than the invested capital, this indicates that the institution has destroyed shareholders' wealth and failed to achieve operational efficiency.

3. Results and Discussion

3.1. Analysis of Market Value Added (MVA) for private commercial banks in Iraq

The Market Value Added (MVA) in private commercial banks in Iraq will be analyzed using the formula (Market Value - Shareholders' Equity). MVA is considered one of the best measures for evaluating operational efficiency of financial institutions. It is also a gauge for assessing external performance, which is one of the best indicators of creating shareholder value. Investors often look at MVA, as it indicates the potential increase in shareholder value over time. MVA also reflects an increase in the operational efficiency of the mentioned institution, as operational efficiency is closely positively correlated with MVA, whether it is increasing or decreasing. The MVA will be evaluated and analyzed through the shareholders' equity formula (Market Value - Equity) as illustrated in equation (3) and shown in the table below in Table 1.

Table 1. Market Value Added for private commercial banks in Iraq for the period (2016-2021)

Bank Name	Market Value Added for Each Year						Compound Growth Rate (%)	The average for each bank
	2016	2017	2018	2019	2019	2021		
Bank of Baghdad	-55.3	-113.8	-194.2	-198.6	-198.6	-51.6	-1.15	-131.5
Commercial Bank Of Iraqi	-161.8	-169	-166.1	-156.9	-156.9	-159.5	-0.24	-168.5
Iraqi Middle East Investment Bank	-179.9	-173.6	-234.9	-242.3	-242.3	-215.2	3.03	-213.4
Investment Bank Of Iraq	-139.8	-178.1	-213.1	-193.1	-193.1	-188.1	5.07	-186.6
United for Investment	-208.7	-228.4	-276.7	-282.5	-282.5	-272.6	4.5	-258.1
Al-Ahli Iraqi Bank	-185.2	-168.2	-172.8	-104.1	-104.1	-8.3	-40.4	-119.3
Iraqi Credit Bank	-119.4	-145.4	-213.5	-189.6	-189.6	-193.7	8.4	-175.4
Babil Bank	-182.7	-193.6	-324.9	-245.7	-245.7	-6.6	-42.5	-199.5
Economy Bank for Investment and Finance	-100	-154.5	-161.9	-166.5	-166.5	-169.6	9.2	-153.7
Sumer Commercial	-42.1	-42.5	-43.4	-142	-142	-169.1	26.07	-100.3
Gulf Commercial	-182.7	-203.9	-257.5	-264.7	-264.7	-258.8	6	-238.8
Mosul Development and Investment	-124.2	-189.8	-225.4	-228.1	-228.1	-233.6	11.1	-206.3
Iraqi Union	-160.1	-187.82	-187.92	-189.6	-189.6	-191.4	3.02	-184.5
Ashur International for Investment	-167.6	-191.1	-210.9	-207	-207	-171.4	0.37	-191.9
Al-Mansour for Investment	-40	-92.6	-139.8	-112.1	-112.1	-152.6	25	-113.5
Trans Iraq Bank	-91.7	-92.9	-89.7	-82.1	-82.1	-0.9	-53.7	-73.45
Region Trade Bank	-9.2	-19.4	-27.9	-40.8	-40.8	-57.3	35.6	-33.8

Erbil for Investment and Finance	-183.2	-215.15	-211.15	-203.35	-203.35	-237.65	4.43	-216.2
International Development for Investment and Finance	-72.7	-69.4	-61.6	-66.7	-66.7	-96.2	4.7	-74.4
Average	**-126.84**	**-147.9**	**-177.2**	**-172.3**	**-172.3**	**-148.2**	**2.6**	
Minimum loss	**-9.2**	**-19.4**	**-27.9**	**-40.8**	**-40.8**	**-0.9**		
Maximum loss	**-208.7**	**-228.4**	**-324.9**	**-282.5**	**-282.5**	**-272.6**		

Source: Compiled by the researcher

According to this method, the following interpretations can be made:

- Positive results: indicating the presence of market value added and thus actual addition to shareholders' wealth.
- Negative results: indicating the absence of market value added and thus no actual addition to shareholders' wealth.

Through the analysis of market value added according to the formula (market value - shareholders' equity) as shown in Table 1, the following observations can be made:

- There was a slight increase in the average market value added for private commercial banks as a whole, with a change rate of 2.6% in the compound growth rate of MVA during the research period. This explains the gradual increase in the average market value of shares compared to the average book value and equity. However, the average for private commercial banks overall yielded negative results, with the lowest average recorded at -178 billion for the year 2020, indicating a significant loss in market value.
- The lowest market value loss was incurred by Development Bank in 2021, with a market value added ratio of -0.9, which is considered good compared to other banks. This indicates a significant convergence of market value with book value.
- The largest market value loss (MVA) was attributed to United Investment Bank in 2018, amounting to -334 billion dinars, reflecting a significant negative gap between market value and book value.
- When analyzing the average MVA for each bank individually, all banks had a negative average, but we find that the bank with the lowest loss in market value was Al-Iqleem Commercial Bank with an average of -33, while the bank with the largest loss in market value during the research period was United Investment Bank with a loss estimated at -258 billion for market value.
- Al-Iqleem Commercial Bank achieved the highest compound growth rate of market value added during the research period, with a growth rate of 35%, followed by Sumer Commercial Bank with a growth rate of 26%, while Al-Iraq Bank ranked last with a growth rate decline of -53%.

Table 2. Maximum and minimum values of Market Value Added (MVA) in private commercial banks in Iraq for the period (2016 - 2021)

Category	2016	2017	2018	2019	2020	2021
Lowest MVA	Al-Iqleem Bank	Al-Iqleem Bank	Al-Iqleem Bank	Al-Iqleem Bank	Al-Iqleem Bank	Ibar Al-Iraq Bank
Highest MVA	Al-Mutahid Investment Bank	Al-Mutahid Investment Bank	Babil Bank	Al-Mutahid Investment Bank	Al-Mutahid Investment Bank	Al-Mutahid Investment Bank
Lowest Average MVA per Bank	Highest Average MVA per Bank	Highest Compound Annual Growth Rate (CAGR) for MVA	Lowest Compound Annual Growth Rate (CAGR) for MVA			
Al-Iqleem Bank	Al-Mutahid Investment Bank	Al-Iqleem Bank	Ibar Al-Iraq Bank			
Development Bank	Gulf Bank	Sumar Bank	Babil Bank		B**ank**	
Ibar Al-Iraq Bank	Erbil Bank	"Mansour Bank"	National Bank of Iraq			
Sumar Bank	Middle East Bank	Mosul Bank	Bank of Baghdad			
Al-Mansour Bank	Mosul Bank	"Economy Bank"	Commercial Bank			

Source: From the work of the researcher

Upon reviewing the above table, it is evident that the Market Value Added (MVA) was not achieved at the level of banks as a whole. Instead, in those years and for all banks, it was lower than the Book Value. Consequently, the desired operational efficiency was not achieved from the market perspective. On average (MVA) for the entire research period, we find that Mansour Bank is the only one that incurred the lowest loss in Market Value Added. Therefore, any bank that did not achieve operational efficiency from the market perspective. From a scientific standpoint, investors or security holders realize two returns (actual return and/or potential return). If shareholders incur a loss in potential return, it does not necessarily mean that they have experienced a loss in actual return. Therefore, it is incumbent upon the bank to continue working to gain both returns to achieve complete operational efficiency.

3.2. Market Value Added (MVA) analysis for private commercial banks according to the formula (Market Value/Book Value)

The Market Value Added (MVA) will be analyzed based on the formula (Market Value / Shareholders' Equity). Through this formula, the Market Value Added will be evaluated, thereby illustrating the operational efficiency based on the results obtained. If the result is greater than (1), it indicates the presence of Market Value Added for the institution in that year or period. Conversely, if the result is less than (1), it indicates the absence of Market Value Added due to the decline in Market Value compared to Book Value, as illustrated in Equation (3) and presented in the Table 3.

Table 3. Market Value Added (MVA) for private commercial banks in Iraq for the period (2016-2021)

Bank Name	Market Value Added for Each Year						Compound Growth Rate (%)	The average for each bank
	2016	2017	2018	2019	2020	2021		
Bank of Baghdad	0.8	0.57	0.27	0.27	0.36	0.83	0.58	0.52
Commercial Bank Of Iraqi	0.42	0.42	0.41	0.42	0.35	0.5	2.46	0.42
Iraqi Middle East Investment Bank	0.37	0.33	0.12	0.09	0.11	0.19	-10.8	0.2
Investment Bank Of Iraq	0.52	0.37	0.24	0.26	0.21	0.28	-9.4	0.31
United for Investment	0.3	0.23	0.09	0.07	0.08	0.10	-16	0.14
Al-Ahli Iraqi Bank	0.35	0.41	0.33	0.6	0.75	1.00	18.2	0.57
Iraqi Credit Bank	0.61	0.54	0.32	0.36	0.35	0.33	-9.8	0.42
Babil Bank	0.31	0.28	0.13	0.10	0.06	0.97	20.9	0.30
Economy Bank for Investment and Finance	0.52	0.36	0.35	0.35	0.34	0.34	-6.6	0.38
Sumer Commercial	0.84	0.84	0.84	0.47	0.38	0.36	-13.2	0.62
Gulf Commercial	0.42	0.36	0.18	0.13	0.13	0.15	-15.9	0.23
Mosul Development and Investment	0.53	0.3	0.15	0.15	0.12	0.14	-20	0.23
Iraqi Union	0.38	0.28	0.28	0.27	0.27	0.27	-5.4	0.29
Ashur International for Investment	0.33	0.28	0.21	0.22	0.25	0.39	2.5	0.28
Al-Mansour for Investment	0.86	0.68	0.53	0.6	0.5	0.45	-10	0.6
Trans Iraq Bank	0.67	0.66	0.67	0.7	0.7	1	6.8	0.73

Region Trade Bank	0.96	0.92	0.9	0.86	0.84	0.81	-2.7	0.88
Erbil for Investment and Finance	0.35	0.23	0.24	0.24	0.10	0.11	-17.7	0.21
International Development for Investment and Finance	0.73	0.74	0.76	0.75	0.71	0.67	-1.3	0.73
Average	**0.54**	**0.46**	**0.37**	**0.35**	**0.35**	**0.46**	**−2.4**	
Minimum loss	**0.96**	**0.92**	**0.89**	**0.86**	**0.83**	**1**		
Maximum loss	**0.3**	**0.23**	**0.09**	**0.07**	**0.06**	**0.107**		

Through the analysis of Market Value Added (MVA) according to the ratio formula (Market Value / Shareholders' Equity), as shown in Table 3, the following observations are evident:

- There was a slight decline in the average Market Value Added for private commercial banks in Iraq, with a change rate of (-2.4%) in the compound growth rate of MVA during the research period (2016-2021). This indicates a noticeable decrease in the average Market Value compared to Book Value and Shareholders' Equity. The highest average Market Value Added for private commercial banks in Iraq overall was recorded in 2016, reaching 54% of total Shareholders' Equity. Conversely, the lowest average MVA for the years 2019 and 2020 respectively was 35%, indicating weak performance due to Book Value outperforming Market Value in those years.
- The highest proportion of Market Value Added was achieved by Bank Al-Iraq in 2021, reaching 100%, implying equality between Market Value and Book Value.
- The lowest Market Value Added (MVA) was attributed to Bank Babil in 2020, with a proportion of 0.06, indicating a significant decline in Market Value compared to Book Value.
- Through the analysis of the average ratios of MVA for each bank during the research period (2016-2021), with a ratio of 1.31, it became evident that all average ratios were less than 1. This means that all banks did not achieve an average greater than 1, indicating that Market Value was lower than Book Value for all banks. Bank Al-Iqleem Al-Tijari ranked first with the highest average Market Value proportion of 88%, while Bank Al-Mutahid ranked last with the lowest average of 14% during the research period.
- Bank Babil achieved the highest compound growth rate during the research period, estimated at 20%, followed by Al-Ahli Bank with a rate of 18%. Bank Al-Mosul ranked last with the lowest growth rate at -20%.

In conclusion, referring back to the results of Market Value Added (MVA), it becomes apparent that MVA was not achieved in most years for each bank individually and for the private commercial banking sector as a whole. This explains the low Market Value

compared to Book Value for all banks during those years, indicating that the desired operational efficiency was not achieved from the market entry perspective. Therefore, the failure to achieve Market Value Added does not imply the failure to achieve internal operational efficiency for the commercial bank. In other words, if a commercial bank loses potential returns, it still retains the opportunity to obtain planned returns.

3.3. Measuring the impact of operational performance on Market Value

This chapter aims to measure the effect of operational performance on the market value of private Iraqi commercial banks. This study is based on the nature of banking functions as vital financial institutions in the economy, where understanding the interaction between operational performance and market value of banks is of particular importance and can be illustrated as follows:

$$Y = b_0 + b_1x_1 + b_2x_2 + ... + bixi$$

Where:

Y: the dependent variable (Market Value)

X is the independent variable (Operational Performance)

After testing the results for 19 commercial banks, the following observations are revealed:

Dependent Variable: Y_?
Method: Pooled Least Squares
Date: 03/08/24 Time: 17:30
Sample: 2016 2021
Included observations: 6
Cross-sections included: 19
Total pool (balanced) observations: 114

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	161.0806	12.01869	13.40250	0.0000
X_?	-0.470268	0.127513	-3.687989	0.0004
Fixed Effects (Cross)				
01--C	17.27030			
02--C	1.498230			
03--C	-66.75938			
04--C	-18.47844			
05--C	-112.1436			
06--C	34.02462			
07--C	36.27026			
08--C	-61.85216			
09--C	-61.22967			
10--C	108.0783			
11--C	-53.42467			
12--C	-55.16441			
13--C	-71.88642			
14--C	-41.08385			
15--C	59.14871			
16--C	140.7303			
17--C	121.3115			
18--C	-42.96347			
19--C	66.65386			

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.708068	Mean dependent var	119.2151
Adjusted R-squared	0.649060	S.D. dependent var	71.15222
S.E. of regression	42.15069	Akaike info criterion	10.47835
Sum squared resid	167007.9	Schwarz criterion	10.95839
Log likelihood	-577.2661	Hannan-Quinn criter.	10.67317
F-statistic	11.99962	Durbin-Watson stat	1.110263
Prob(F-statistic)	0.000000		

Figure 2. Model outputs for 19 commercial banks in Iraq

Based on the model outputs, it appears that a specific bank in Iraq exhibits a strong operational performance compared to other banks, as the data shows that an increase in operational performance has a positive impact on the bank's market value. It is noteworthy that this bank ranks first in terms of operational performance, followed by two other banks in second and third place, respectively. On the other hand, there seems to be another bank facing challenges in its operational performance, thus significantly affecting its market value.

This information can be of significant importance to investors and financial officials who seek to understand how operational performance affects the market value of banks. The importance of improving operational performance as a means to increase market value and enhance confidence in the bank is evident.

4. Conclusion

Considering these results, operational performance can be a critical factor in determining the strength and competitiveness of banks in the financial market. Therefore, banks can achieve further success and growth by improving their operational performance and effectively developing operations management strategies.

Ultimately, financial and banking authorities must work to provide a conducive and supportive environment to enhance the operational performance of banks. This can be achieved through a regulatory framework and laws that encourage flexibility and innovation, promote transparency, and ensure accountability.

In summary, achieving success in the banking sector requires attention to operational factors and improving performance in the long run, through investment in technology, human resources, and adopting best practices in banking operations management.

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