# The Possibility of Applying the Profitability Multiplier Model and the Lerner and Carlton Model to Measure the Fair Value of Private Commercial Bank Shares Listed on the Iraqi Stock Exchange for the Period (2014-2019)

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**ABSTRACT:** The study aimed to measure the fair value of private commercial bank shares listed on the Iraqi Stock Exchange using the profitability multiplier model and the Lerner and Carlton model, and to test the differences between the fair value of shares measured by each model and their market values to determine whether the market prices of shares reflect their fair value. Then compare between the fair value measurements models to choose the best model based on the results of the difference tests. The fair values were calculated according to these two models based on the annual data of the 6 banks in the study sample during the period (2014 - 2019), and differences tests were relied upon to test whether there were significant differences or not between the fair value estimates according to each model and the market value, so that Finding the best model to measure the fair value of bank shares. The study found that there are no statistically significant differences at the significance level of 0.05 between the market value and the fair value of private commercial banks listed on the Iraqi Stock Exchange according to the profitability multiplier model. While statistically significant differences were found at a significance level of 0.05 between the market value and the fair value of private commercial banks listed on the Iraqi Stock Exchange according to the Lerner and Carlton model, the profitability multiplier model is better than the Lerner and Carlton model in measuring the fair value of the banks' shares in the study sample.

## 1.1 INTRODUCTION

Determining the "true value" of the stock is the main factor in making the investment decision, because every asset, whether financial or real, has a value, and knowing this value is the key to successful investment in the asset, and what justifies carrying out the evaluation process is that the investor is not willing to pay for an asset (Al-waeli et al., 2020). More than it is worth, the price at which assets are sold can only be justified by the cash flows expected from them, so the price paid for any asset must reflect the cash flows expected from it (A. Al-Waeli et al., 2022). The method of recognition and measurement at fair value is also the most appropriate for decision making, as financial statement reports are based on reliable information at the beginning, which is the historical cost method. However, this approach becomes less reliable over time and does not have the capacity to make reliable decisions once a certain period has passed after the event occurs (Al-Waeli et al., 2021). This is because financial reports rely on historical records of assets and liabilities, lack up-to-date information about current values, and historical cost includes a set of different valuations, assumptions, and assumptions with which comparisons cannot be made with high accuracy (Sabour & Al-Waeli, 2023).

The International Accounting Standards Board (IASB) brokers accounting standards to provide information useful for stakeholder decisions based on fair value and cash flows (Al-Waeli et al., 2020), the shift from pure historical cost accounting to fair value is believed to be in line with the fundamental purpose of financial information which seeks to provide relevant financial information of high value to users (Hanoon et al., 2020a), interest in fair value has also increased due to concerns that the combination of historical cost and delayed loss recognition leads to financial results disconnected from economic reality, historical cost accounting has also been criticized for providing managers with the means to smooth profits through hidden and surplus reserves and selective sales of securities (Hanoon et al., 2021,Abbas Jumaah Al-Waeli, 2024), moreover, financial instruments and

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markets have become more complex, with historical cost proving to be a poor measurement method in inflationary markets. In addition, new financial products such as derivatives and structured investments simply cannot be measured in a meaningful way using traditional methods (Hanoon et al., 2020b).

Accordingly, the current study investigates the possibility of applying the profitability multiplier model and the Lerner and Carlton model to measure the fair value of private commercial bank shares listed on the Iraqi Stock Exchange.

## 2-1 PREVIOUS STUDIES

**1. Al-Taweel's study (2020) entitled: "Using fair value to measure the real value of the common shares of banks listed on the Palestine Stock Exchange using the profitability multiplier model".**

The study aimed to identify the possibility of using fair value to measure the true value of ordinary shares for a sample of 7 banks listed on the Palestine Stock Exchange for the period from 2014-2017, the study followed the descriptive analytical approach, and used the profitability multiplier model as one of the mathematical models to measure the fair value of ordinary shares through... the published financial reports of the banks in the study sample, and the study reached results, the most important of which are: the Palestine Stock Exchange is considered to be at a weak level of efficiency because it does not reflect the true value of the shares, and the profitability multiplier model is capable of measuring the true value of the fair shares of banks listed on the Palestine Stock Exchange.

**2. Saeedi's study (2020) entitled: "The role of measuring the real value of common stocks using the profitability multiplier model in making investment decisions (an applied study of stocks listed on the Algerian Stock Exchange)**

The study aimed to find out the extent to which the process of measuring the real value of common shares contributes to making the optimal investment decision using the profitability multiplier model, as it is one of the most important models that help to identify the price imbalance between the market value of the common stock and its real value and compare these two values at the moment of making the investment decision, the study was applied to a sample of four companies listed on the Algerian Stock Exchange, for the period from 2013-2016.                     .

The study found the ability of the profitability multiplier model to measure the true value of common shares, and thus provide appropriate information to investors that enable them to rationalize their investment decisions, it was concluded that all the real values of these shares are greater than their market value recorded on the day of evaluation, which gives investors the opportunity to achieve gains by obtaining these shares priced at a price lower than their market value.

**3. The study of Shaban et al. (2020) entitled: "The Impact of Fair Value Accounting on Earnings Predictability: Evidence from Jordan"**

This paper aimed to examine the impact of fair value measurements on earnings forecasting, i focused on analyzing the relationship between fair value measurements and predictability as a measure of earnings quality, the primary data necessary to achieve the objectives of the study was collected through the annual reports of Jordanian commercial banks, data was collected and analyzed from ten commercial banks representing the study sample using the time series method covering a period of eight years, from 2011 to 2018, the data was analyzed using the SSPS statistical program, the study concludes that unrealized gains or losses of expected fair value through comprehensive income have high predictive power for earnings quality, the results also demonstrated that unrealized gains or losses of expected fair value through net income have a high predictive power for the quality of profits in Jordanian commercial banks, regression and correlation coefficient analyzes also indicate a strong association between the two variables, the dependent variable (fair value accounting) and the independent variable (earnings predictability).

**4. Study by Yusuf and Idris (2021) entitled: "Analyzing the strengths and weaknesses of fair value and historical cost accounting measurements"**

This paper has undertaken a comparative analysis of the fundamental pros and cons associated with the concept and application of fair value accounting (FVA) and historical cost accounting (HCA) as presented in contemporary accounting literature with the aim of providing a link to the debate on the suitability of each concept in shaping and guiding the preparation and presentation of financial information, the review concluded that the use of historical cost accounting is easy to use, conservative, reliable and simple to understand by management and users of financial reports, however, proponents of fair value consider historical cost accounting outdated, because it focuses on historical cost allocations rather than realistic reporting of values even in times of significant changes, while the primary disadvantages of FVA are subjectivity and complexity.

**3-1What distinguishes the current study.**

Based on the above review of previous studies, the current study is similar to a number of them in using the profitability multiplier model to measure the fair value of shares, and differs from it by using the Lerner and Carlton model to measure it, as

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the model indicates a strategy related to the dividend distribution policy, and this strategy is based on the principle of reducing Dividends distributed to stockholders in the event that the rate of return on investment is greater than the required rate of return, and vice versa, then a comparison is made between the two measurement models to choose the best model for measuring fair value, the current study also differs from the studies that were applied in Iraq in using the profit multiplier, Lerner, and Carlton models, as well as the time period studied from 2014 to 2019.

**4-1 The problem of the study.**

The study problem can be formulated by asking the following questions:

1. Can the profitability multiplier model be applied to measure the fair value of private commercial bank shares listed on the Iraqi Stock Exchange?

2. Can the Lerner and Carlton model be applied to measure the fair value of private commercial bank shares listed on the Iraqi Stock Exchange?

3. Do the market prices of shares of private commercial banks listed on the Iraqi Stock Exchange reflect the fair value of these shares according to the profitability multiplier model?

4. Do the market prices of private commercial bank shares listed on the Iraqi Stock Exchange reflect the fair value of these shares according to the Lees and Carlton model?

5. Is the profitability multiplier model better than the Lerner and Carlton model for measuring fair value?

**5-1 Importance of the study**

The importance of this study stems from the fact that it presented an analytical study on the ordinary share prices of private commercial banks listed on the Iraqi Stock Exchange during the period (2014 - 2019), in addition to analyzing the components and elements of the models used in measuring the fair value of the shares of these banks, in addition to performing a value calculation, the fair value of the shares of these banks according to both the profitability multiplier model and the Lerner and Carlton model. also, testing the existence of fundamental differences between the fair value calculated according to each model and the market value of these shares may allow arriving at the best model for measuring the fair value of private commercial bank shares listed on the Iraqi Stock Exchange, the results of the current study can contribute to encouraging managers and workers in this Private commercial banks are increasingly adopting fair value models for asset pricing over historical cost models as they are more accurate and less biased.

**6-1 Objectives of the study**

The study aims to:

1. Measuring the fair value of the ordinary shares of private commercial banks listed on the Iraqi Stock Exchange through:

-Measuring the fair value of private commercial bank shares listed in the Iraqi market using the profitability multiplier model.

-Measuring the fair value of private commercial bank shares listed in the Iraqi market using the Lerner and Carlton model.

2. Testing the differences between the fair value of shares measured by each model and the market values of shares of private commercial banks listed on the Iraqi Stock Exchange to determine whether the market prices of shares reflect their fair value.

3. Comparison between the fair value measurement models to choose the best model based on the results of the differences tests in the second objective.

**7-1 Study hypotheses.**

The study is based on a main hypothesis: there is no statistically significant effect of the profitability multiplier model and the Lerner and Carlton model to measure the fair value of private commercial bank shares listed on the Iraqi Stock Exchange, three sub-hypotheses branch out from it, as follows:

1. There are no fundamental differences between the fair value of the ordinary shares of private commercial banks listed in the Iraqi market according to the profitability model and the market value.

2. There are no fundamental differences between the fair value of the ordinary shares of private commercial banks listed in the Iraqi market according to the Lerner and Carlton model and the market value.

3. The profitability multiplier model is better than the Lerner and Carlton model for measuring fair value.

**8-1Study methodology**

The analytical study was relied upon after theoretical grounding on the components of the profit multiplier model and the Lerner and Carlton model, in addition to studying the stock movements in the study sample during the period (2014-2019)

To answer the research questions and test the hypotheses for the first and second research questions related to the possibility of applying the profit multiplier and Lerner and Carlton models to measure fair value, fair values have been calculated according to these two models based on the annual data of the banks sampled during the period (2014 - 2019), and to answer the research

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questions and test Hypotheses: For the third, fourth, and fifth research questions, difference tests were relied upon to test whether or not there were significant differences between the fair value estimates according to each model and the market value, in order to arrive at the best model for measuring the fair value of bank shares, the study population consisted of private commercial banks listed on the Iraqi Stock Exchange, numbering (42), and the study sample consisted of private commercial banks listed on the Iraqi Stock Exchange, numbering (6), the study period was chosen from the year 2014 until 2019) because it is a recent period and the financial data of private commercial banks (study sample) listed on the Iraqi Stock Exchange are sufficiently available from the year (2014-2019), and thus the possibility of measuring variables.

**Study data:** Annual financial statements for lists of private commercial banks published on the Iraqi Stock Exchange website.

**Statistical methods and tests used:**

Statistical methods: arithmetic mean, standard deviation, covariance.

Tests: Testing the significance of differences.

### Theoretical framework

### The concept of common stock

An ordinary share is defined according to the investment terminology guide issued by the Capital Market Authority in the Kingdom of Saudi Arabia as: "a security that represents a share in the capital of a joint stock company, and grants the investor many rights, the most important of which are: the right to attend general assembly meetings, and to receive dividends if they are distributed, It also grants him the right to vote and priority in subscribing to its shares." (Capital Market Authority in the Kingdom of Saudi Arabia, Guide to Investment Terminology)

It is also defined, according to the glossary of terms issued by the Amman Stock Exchange, as: "A type of stock that an investor can buy, which gives them an ownership stake in the company, investors who hold common shares have voting rights in the company's annual shareholders meeting, but profits are not guaranteed, if dividends are issued." the holders of ordinary shares receive the distribution only after the holders of preferred shares receive the distribution" (Amman Stock Exchange, Glossary of Terms).

Common stock values.

Ordinary shares are considered a property security that has several values, each of which has its own concept, which can be stated in the following values ( Kanjo et al., 2018: p. 178):

- Nominal value: It is the value of the stock when it is offered for subscription by the company's owners and is determined in accordance with private and public laws on the basis of which profits are distributed.

- Book value: It expresses the value of the share recorded in the company's accounting records, which expresses the company's assets at a specific time, minus all its obligations at that time.

Book value per share = equity / number of shares issued

- True (fair) value: The concept of fair value indicates the true value, which is the value that explains the entire investment characteristics of the asset, it is the value that is justified by financial and economic facts and is represented by the company's assets, the profits expected to be distributed, and the expected growth rates in profits, and if this value is achieved in the stock market. It reflects the state of financial market balance to indicate the extent of the market's response to new information with the aim of correcting the trends in the movement of market prices towards their true value, therefore, the investor's analysis of the true value and its comparison with the prevailing prices in the market will determine whether the stock is inflated or discounted.

-Market value: It is the price at which the stock is sold in the market, the market value is determined based on the conditions of supply and demand in the financial market and general economic conditions such as inflation and deflation, the predictions and expectations of financial analysts and investors for the future of the company, in addition to the company's dividend policy, local or international political news, and expected wars, or peace.

### Value measurement approaches

### First: Historical cost accounting.

According to this method, assets are recorded at the value of the cash or cash equivalents that were paid or at the fair value of what was paid for them, on the date of their purchase. Liabilities are recorded at the amounts received in exchange for the undertaking or, in some cases, such as for income taxes, at the cash or cash equivalents to satisfy the obligation in the ordinary course of business (IASB 1, Para. 100).

### Second: Fair value accounting

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Fair value accounting (FVA) has received significant attention since FAS 157 was first issued which introduced an expanded concept of fair value (Taplin et al., 2014). Fair value is defined according to Standard No. 157 as: "the price that can be obtained from selling an asset or paid to settle a liability in an orderly transaction between market participants on the measurement date" (FASB, 2007), as this definition is contained in a number of international accounting standards such as Standard No. (32), paragraph (5), Standard No. (36), Standard No. (39) and other standards, as International Accounting Standard No. (40) Real Estate Investment explained, that the fair value is determined on a specific date and according to changing market conditions from time to time (Council International Accounting Standards, 2002).

International Financial Reporting Standard No. 13 was also issued in 2011, which established a framework for measuring fair value, in addition to full disclosures about fair value measurements, and defines fair value as: "the price that can be received in exchange for selling an asset or paid in exchange for transferring a liability in a transaction that takes place in "Ordinary and regular conditions among market participants as at the measurement date".

Defined by Mora et al. (2019) Fair value accounting is a financial reporting approach or method, also known as the mark-to-market method, under generally accepted accounting principles. Companies use fair value accounting to measure and report the value of specific assets and liabilities based on actual or estimated fair market prices. Changes in the values of assets or liabilities over time result in unrealized gains or losses for the asset held and liabilities outstanding, which increases or decreases net income, as well as the value of equity on the balance sheet. (Mora et al. p: 44; 2019)

**Fair value measurement:**

There are several models for measuring the fair value of stocks, as it was previously mentioned that the process of evaluating stocks is the cornerstone of investors making investment decisions related to stocks Models for measuring the fair value of common share.

The evaluation of common stocks has received great attention in the financial literature in general and investment in particular by identifying their future values according to several models, which are:

**First**: Dividend Discount Model (DDM)

**Second**: Discounted Cash Flow Model (DCF)

**Third**: Earnings Multiplier Model (ratio of stock price to earnings) Ratio Model E/P

**Fourth**: Earnings Valuation Model

**Fifth**: Walter Model

**Sixth**: Lerner and Carleton (L-C) Model

In the current study, the profitability multiplier model was used to find the true value of the stock by knowing the amount that the investor is willing to pay for the stock price times its profitability, the Lerner and Carlton model was also used to clarify the relationship between the true value of the stock and its book value, and because it guides a strategy related to the dividend policy, which aims to maximize the real value of the stock.

First - the profitability multiplier model (the ratio of the share price to its earnings) Ratio Model E / P

This model was developed by Williams and Findlay, and was derived from the Gordon model, and based on the results it can be assessed whether the asset is overvalued or undervalued, if the result is higher than the market price of the stock, then the asset is undervalued and a potential exchange rate closer to the intrinsic value can be expected, and if the result is that the asset is overvalued, just the opposite can be expected. Determining intrinsic values through the earnings multiplier model is one of the most widely used methods among analysts (Ma et al., 2019;p87), and the stock price-to-earnings ratio expresses the number of times the investor receives profit to justify the price set for the stock. This ratio is calculated by dividing the last closing price of the stock in the financial market by the earnings per share, according to the following formula (Al-Amiri, 2010; p75).

$$p \big/ E = \frac{P}{E}$$

Whereas:

E/P: price-earnings ratio, P: last closing price of the stock in the financial market, E: earnings per share

E: earnings per share

The E/P ratio reflects the expectations of investors and shareholders regarding the future profits of the economic unit, as whether the ratio decreases or increases depends on the growth rate of expected profits per share. The investor pays more for the current dinar than the profits when he expects that the profits will increase significantly in the future when the stock is sold at a low E/P ratio, but this relationship is not fixed, because the company itself may change in conditions.

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The advantages of the Earnings Multiplier model are: ease and simplicity of calculation, its wide use, takes expectations into account, and revenues are a measure of what is generated for shareholders. In contrast, one of the main problems of the Earnings Multiplier model arises with negative or zero earnings, as E/ cannot be measured, P quantitatively, although it is possible to imagine a negative P/E, it is not used in practice or published with the rules, so if the price-to-earnings index is not available in the organization under review and at the same time a loss is reported, the reason for the unavailability This indicator is clear, as this model is explained through the following equation:

$$V = \sum_{t=0}^{n} \frac{(m)(E)}{(1+K)^n}$$

Where:

V: fair value, m: multiple of the stock's value to its earnings, E: earnings per common share, K: required rate of return.

The required rate of return is the lowest rate of return on investment that investors require to compensate them for bearing the risk involved in the investment process, the required rate of return is determined by three variables (Bouamama, 2021):

-Real Risk-Free Rate: This affects investment opportunities in the economy. That is, the real long-term growth rate.

-Factors affecting the nominal interest rate: Nominal Risk-Free Rate: which includes the position of the capital market in the short term (expansion, contraction) and the expected inflation rate.

The required rate of return is measured according to the following equation;

**K=Rf+β(Rs-Rf)**

Whereas:

K: required rate of return, Rf: risk-free return. Rs: market rate of return per share, β: beta coefficient;t.

The risk-free return (Rf) is the interest rate on short-term securities issued by the government (treasury bills, the rate of return on government bonds). If it does not exist, we use the interest rate on savings deposits. (Boumama, 2021)

The market rate of return per share (Rs) is measured according to the following equation;

$$Rs = \frac{p0 - p1 + Dij}{p1}$$

Whereas:

Rs: market return per share, P0: closing price, P1: opening price, Dij: dividend per share.

The beta coefficient (B) represents a measure of the systematic risks in the investment portfolio, and the higher the value of the index is evidence of the better performance of the financial portfolio.

The beta coefficient (B) is measured according to the following equation:

$$= \frac{cov(R_S R_m)}{\delta^2 R_m}$$

β :

Cov(RsRm)) : Rs) (Rm) (δ Rs) (δ Rm(

δ^(2)Rm :

The covariance between the stock return and the market portfolio return in the case of historical data is calculated through the following relationship: (Bouamama, 2021p;98)(

$$COV(Rs.Rm) = \frac{\sum[(Rs - E(Rs))(Rm - E(Rm))]}{n-1}$$

(B)A statistical measure of systematic risk in an investment portfolio, which is the risk common to all securities in the market, the beta coefficient measures the sensitivity of a security's return to the portfolio's return in the market, and it is a measure of the compatibility of the movement of the return of a particular security with the return of a group of securities in the market that constitute the market portfolio.

The value of beta depends on the historical relationship between the rate of return of a security (i.e. based on a time series of at least four years) and the rate of return on the market portfolio to which the security belongs.

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The value of beta depends on the historical relationship between the rate of return of a security (i.e. based on a time series of at least four years) and the rate of return on the market portfolio to which the security belongs.

Secondly:Lerner and Carleton (L-C) Model

This model (L-C) is a developed formula for the Gordon and Shapiro model, as this model shows the important relationship between the real value of the common stock and its book value. When the rate of return on investment in the book value formula is less than the required return on the common stock, the real value decreases to the level Less than the book value. However, if the rate of return on investment is greater than the required rate of return on the common share, then the real value of the share in this case is greater than the book value. While the book value balances with the real value when the required rate of return equals the rate of return on investment, based on this model, there is no need for the real value of the stock and the book value to be the same in an ever-changing environment.

$$P = \frac{(1-b)rBV}{K-rb}$$

**Practical framework**

Based on the research objective of comparing the profitability multiplier and Lerner-Carlton models in measuring the fair value of common shares of private commercial banks listed on the Iraqi Stock Exchange and based on the analysis of bank data, an applied study of the profitability multiplier and Lerner-Carlton models was presented to measure the fair value during the period (2014 -2019), and conduct the necessary testing to determine the best model.

**Study population and sample:**

The research community is represented by the commercial banking sector, as it is one of the most important sectors listed on the Iraqi Stock Exchange, which numbered (42) commercial banks according to the Iraqi Stock Exchange report for the year (2023), and for the period from (2014-2019) after excluding the banks that were delisted from the market.

**The following is a brief summary of the commercial banks selected as a purposive sample from the research population:**

**Table (1): Private commercial banks listed on the Iraqi Stock Exchange (study sample)**

| Listing date | Capital (incorporation) | Date of Establishment | International numbering | Short code | Bank name |
|---|---|---|---|---|---|
| 2004 | 400 million Iraqi dinars | 1995 | IQ000A0M9C22 | BNOI | National Bank of Iraq |
| 2004 | 150 million Iraqi dinars | 1992 | IQ000A0M7S59 | BCOI | Commercial Bank of Iraq |
| 2007 | 250 million Iraqi dinars | 2005 | IQ000A0Q20U5 | BASH | Ashur International Bank |
| 2004 | 100 million Iraqi dinars | 1993 | IQ000A0Q20V3 | BIBI | Iraqi Investment Bank |
| 2004 | 100 million Iraqi dinars | 1992 | IQ000A0M7SYB | BBOB | Bank of Baghdad |
| 2004 | 400 million Iraqi dinars | 1999 | IQ000A0M7S00 | BSUC | Sumer Commercial Bank |

**Source:** Prepared by researchers based on the annual reports of the Iraqi Stock Exchange.

**Study methodology:**

To answer the research questions and test the hypotheses for the first and second research questions related to the possibility of applying the profit multiplier, Lerner and Carlton models to measure fair value, calculations have been performed and fair values calculated according to these two models, relying on the annual data of the banks in the study sample during the period (2014-2019), and to answer the questions Research and hypothesis testing For the third, fourth, and fifth research questions, the statistical analysis program SPSS was used to conduct the following statistical tests:

-Simple regression test for the purpose of determining the explanatory power of both the profitability multiplier model and the Lerner and Carlton model.

- ANOVA test to determine the significance of the differences between the fair value estimates according to each model and the market value, in order to arrive at the best model for measuring the fair value of bank shares.

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Table (2) shows the average market return per share (Rs), the coefficient (β), and the average required rate of return for the banks in the study sample during the period (2014-2019), used in calculating the profitability multiplier and then the fair value of the share according to the profitability multiplier model as follows:

**Table No. (2) Average market share return, coefficient (β), and average required rate of return for the study sample banks listed on the Iraqi Stock Exchange**

| Average required rate of return (K) for 6 years | Beta | Covariance | Market return variance | The standard deviation of a stock's market return | The average market rate of return for the bank shares of the study sample for 6 years | Bank name |
|---|---|---|---|---|---|---|
| 1.24 | -0.17 | -62.33 | 376.08 | 19.39 | -6.79 | National Bank of Iraq |
| -3.30 | 3.52 | 4.10 | 1.16 | 1.08 | -0.89 | Commercial Bank of Iraq |
| -4.90 | 22.21 | 0.74 | 0.03 | 0.18 | -0.15 | Iraqi Investment Bank |
| 2.83 | 0.39 | 138.71 | 353.21 | 18.79 | 7.14 | Ashur International Bank |
| -13.93 | 34.01 | 1.47 | 0.04 | 0.21 | -0.34 | Bank of Baghdad |
| -4.41 | 0.73 | 73.77 | 101.32 | 10.07 | -6.06 | Sumer Commercial Bank |

**Source:** Prepared by researchers based on the annual reports of the Iraqi Stock Exchange.

The results in Table (2) indicate that the average returns achieved for some bank stocks were negative, due to the difference in the closing and opening prices of the shares in the trading bulletins, meaning that the closing price is lower than the opening price. It is also noted that the highest share return was in Ashur International Bank, and the lowest share return was in the National Bank of Iraq.

The results in Table (2) also show that the beta coefficient was greater than the correct one for the Commercial Bank of Iraq, the Iraqi Investment Bank, and the Bank of Baghdad, and this means that the market return of the shares of those banks is more volatile than the market returns of up and down, while the beta coefficient is less than The correct one for the rest of the banks in the study sample, and this means that the market return of those banks is less volatile with the effects of the market return up and down, and therefore the shares of those banks are considered defensive shares (that is, their returns are not expected to decline in periods of recession, but they may achieve a return that exceeds the market return rate). ). While the beta coefficient for any of the banks in the study sample was not equal to zero or one.

Table 2 also shows the average required rate of return; the required rate of return represents the return necessary to compensate the investor for the risk involved in the investment process. The results of calculating the average required rate of return shown in Table (2) indicate that the average required rate of return for the National Bank of Iraq and Ashur International Bank is higher than the risk-free rate of return of (0.07), and this is considered an incentive to invest in their shares, while the average required rate of return was The rest of the banks in the study sample are lower than the risk-free rate, and therefore it is not considered an incentive to invest in the shares of those banks.

**Table No. (3) Profitability multiplier for the study sample banks listed on the Iraqi Stock Exchange**

| 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | Bank name |
|---|---|---|---|---|---|---|
| 33.28 | -21.48 | 79.25 | 8.72 | 124.58 | 64.77 | National Bank of Iraq |
| 35.09 | 21.63 | 24.38 | 31.67 | 27.85 | 35.81 | Commercial Bank of Iraq |
| 19.84 | 24.29 | 11.11 | 11.53 | 12.09 | 48.16 | Ashur International Bank |
| 7841.41 | 413.02 | 52.55 | 29.47 | 19.43 | 17.31 | Iraqi Investment Bank |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 20.55 | 34.92 | 49.82 | 22.47 | 90.72 | 27.90 | Bank of Baghdad |
| 252.78 | 492.90 | 1123.17 | 119.67 | 131.46 | 253.75 | Sumer Commercial Bank |

**Source:** Prepared by researchers based on the annual reports of the Iraqi Stock Exchange.

The following tables show the fair value of the stock according to the profitability multiplier model and the Lerner and Carlton model for the banks in the study sample as follows:

**Table No. (4) Fair value per share according to the earnings multiplier model and the Lerner and Carlton model for the National Bank of Iraq**

| 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | Bank name |
|---|---|---|---|---|---|---|
| -104.332 | 19.981 | 22.677 | 164.833 | 4.748 | 14.429 | Fair value according to the profitability multiplier model |
| 0.980 | -1.237 | 139.652 | 0.036 | -0.009 | 0.012 | Fair value according to the Lerner and Carlton model |
| 121.773 | 15.418 | 79.771 | 408.388 | 2.742 | 7.668 | Market value |

**Source:** Prepared by researchers based on the results of the profitability multiplier model and the Lerner and Carlton model.

Table No. (4) Shows a discrepancy between the market value and the fair value according to the two models of the National Bank. According to the profitability multiplier model, it was found that the fair value of the share was greater than the market value of the bank's shares in the years 2014, 2015, and 2018. This means that these shares are priced less than they should be, which in turn reflects poor market performance. It is noted that these shares may expose their holders to expected losses. Because the fair value is higher than the market value of those shares. While the fair value decreased from the market value of the bank's shares in the years 2016, 2017, and 2019, this means that these shares are priced higher than they should be, which in turn reflects the presence of unrealized gains per share for the current investor. As for the prospective investor, he will suffer a loss if he invests in it because he will invest his money in shares that are priced more than they should be.

According to the Lerner and Carlton model, it was found that the fair value of the stock was less than the market value of the bank's stock during the study period, except for the year 2017, with a large difference due to the bank not distributing profits during the study period, which was reflected in the fair value of the stock and recorded a decrease with large differences compared to At market value. The Lerner and Carlton model is based on the principle of reducing dividends distributed to stockholders in the event that the rate of return on investment is greater than the required rate of return, and vice versa, and the fair value changes directly with the amount of dividends distributed; Whenever the economic unit distributes profits, the fair value of one share increases without the percentage of increase in the dividend being equal to the percentage of increase in the fair value, and vice versa. It is also noted that there is a large discrepancy between the fair value according to the Lerner and Carlton model and the market value compared to the profitability multiplier model.

**Table No. (5) Fair value per share according to the earnings multiplier model and the Lerner and Carlton model for Ashur International Bank**

| 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | Bank name |
|---|---|---|---|---|---|---|
| -23.599 | 40.490 | 16.853 | 8.407 | 5.573 | 20.240 | Fair value according to the profitability multiplier model |
| 0.538 | -0.441 | 10.247 | -1.549 | -0.025 | 0.025 | Fair value according to the Lerner and Carlton model |
| 55.340 | 6.941 | 74.259 | 66.915 | 3.955 | 11.695 | Market value |

**Source:** Prepared by researchers based on the results of the profitability multiplier model and the Lerner and Carlton model.

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Table No. (5) Shows a discrepancy between the market value and the fair value according to the two models of Ashur International Bank. According to the profitability multiplier model, it was found that the fair value of the share was greater than the market value of the bank's shares in the years 2014, 2015, and 2018. This means that these shares are priced less than they should be, which in turn reflects the poor performance of the market and notes that these shares may expose their holders to expected losses. Because the fair value is higher than the market value of those shares. While the fair value decreased from the market value of the bank's shares in the years 2016, 2017, and 2019, this means that these shares are priced higher than they should be, which in turn reflects the presence of unrealized gains per share for the current investor. As for the prospective investor, he will suffer a loss if he invests in it because he will invest his money in shares that are priced more than they should be.

According to the Lerner and Carlton model, it was found that the fair value of the stock was less than the market value of the bank's stock during the study period, with a large difference due to the bank not distributing profits during the study period, which was reflected in the fair value of the stock and recorded a decrease with large differences compared to the market value.

**Table No. (6) Fair value per share according to the profitability multiplier model and the Lerner and Carlton model for the Iraqi Investment Bank**

| 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | Bank name |
|---|---|---|---|---|---|---|
| -1.496 | -1.925 | -9.765 | -6.919 | -5.355 | 13.747 | Fair value according to the profitability multiplier model |
| 0.000 | 0.001 | 0.033 | 0.120 | 3.471 | -0.026 | Fair value according to the Lerner and Carlton model |
| 7.581 | 3.599 | 9.830 | 13.464 | 15.565 | 15.262 | Market value |

**Source:** Prepared by researchers based on the results of the profitability multiplier model and the Lerner and Carlton model.

Table No. (6) Shows that there is a discrepancy between the market value and the fair value according to the two models of the Iraqi Investment Bank. According to the profitability multiplier model, it was found that the fair value of the share decreased from the market value of the bank's shares during the study period. This means that those shares are priced higher than they should be, which is In turn, it reflects the presence of unrealized gains per share for the current investor. As for the prospective investor, he will suffer a loss if he invests in it because he will invest his money in shares that are priced more than they should be.

According to the Lerner and Carlton model, it was found that the fair value of the stock was less than the market value of the bank's stock during the study period, with a large difference due to the bank not distributing profits during the study period, which was reflected in the fair value of the stock and recorded a decrease with large differences compared to the market value.

**Table No. (7) Fair value per share according to the earnings multiplier model and the Lerner and Carlton model for the Bank of Baghdad**

| 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | Bank name |
|---|---|---|---|---|---|---|
| -0.180 | -0.112 | -0.748 | -1.094 | -3.537 | -4.554 | Fair value according to the profitability multiplier model |
| 0.084 | -0.035 | 0.039 | -0.054 | 0.238 | -0.077 | Fair value according to the Lerner and Carlton model |
| 1.855 | 1.266 | 3.831 | 6.296 | 12.653 | 12.449 | Market value |

**Source:** Prepared by researchers based on the results of the profitability multiplier model and the Lerner and Carlton model.

Table No. (7) Shows a discrepancy between the market value and the fair value according to the two models of the Bank of Baghdad. According to the profitability multiplier model, it was found that the fair value of the share decreased from the market value of the bank's shares during the study period. This means that those shares are priced higher than they should be, which in

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turn reflects the presence of unrealized gains per share for the current investor. As for the prospective investor, he will suffer a loss if he invests in it because he will invest his money in shares that are priced more than they should be.

According to the Lerner and Carlton model, it was found that the fair value of the stock was less than the market value of the bank's stock during the study period, with a large difference due to the bank not distributing profits during the study period, which was reflected in the fair value of the stock and recorded a decrease with large differences compared to the market value.

**Table No. (8) Fair value per share according to the earnings multiplier model and the Lerner and Carlton model for Sumer Commercial Bank**

| 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | Bank name |
|---|---|---|---|---|---|---|
| -32.850 | -70.067 | 51.126 | 37.003 | 122.404 | 9.520 | Fair value according to the profitability multiplier model |
| 13.066 | 0.597 | 0.819 | -1.600 | -0.007 | -0.015 | Fair value according to the Lerner and Carlton model |
| 284.234 | 215.037 | 14.027 | 14.101 | 41.202 | 4.876 | Market value |

**Source:** Prepared by researchers based on the results of the profitability multiplier model and the Lerner and Carlton model.

Table No. (8) Shows a discrepancy between the market value and the fair value according to the two models of Sumer Bank. According to the profitability multiplier model, it was found that the fair value of the share was greater than the market value of the bank's shares in the years 2014, 2015, 2016, and 2017. This means that these shares are priced less than they should be, which in turn reflects the poor performance of the market and notes that these shares may expose their holders to... Expected losses due to the fair value exceeding the market value of those shares. While the fair value decreased from the market value of the bank's shares in the years 2018 and 2019, this means that those shares are priced higher than they should be, which in turn reflects the presence of unrealized gains per share for the current investor. As for the prospective investor, he will suffer a loss if he invests in it because he will invest his money in shares that are priced more than they should be.

According to the Lerner and Carlton model, it was found that the fair value of the stock was less than the market value of the bank's stock during the study period, with a large difference due to the bank not distributing profits during the study period, which was reflected in the fair value of the stock and recorded a decrease with large differences compared to the market value.

It is also noted that there is a large discrepancy between the fair value according to the Lerner and Carlton model and the market value compared to the profitability multiplier model.

**First- ANOVA test:**

It is clear that the fair value between models may differ. This difference is due to the difference in inputs and calculation formula. The theoretical literature on measuring fair value and the results of previous studies indicate that each model has more and better capabilities in interpreting according to the market. Accordingly, we try to choose the following: Which model is best to use in the Iraqi Stock Exchange?

- Testing the significant differences between the fair value measured by the earnings multiplier model and the market value per share:

To test the hypothesis that:

" There are no fundamental differences between the fair value of the common shares of commercial banks listed on the Iraqi Stock Exchange according to the profitability multiplier model and the market value".

The ANOVA test was used to test the significance of the differences, and the following table shows the results of the ANOVA test:

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**Table No. (9) ANOVA test results for the profitability multiplier model used in measuring the fair value of common shares of commercial banks listed on the Iraqi Stock Exchange**

| ANOVA[b] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 43484.255 | 1 | 43484.255 | 6.214 | .025[a] |
| | Residual | 104958.894 | 15 | 6997.260 | | |
| | Total | 148443.150 | 16 | | | |
| a. Predictors: (Constant), Fair value according to the profitability multiplier model | | | | | | |
| b. Dependent Variable: Market value | | | | | | |

**Source:** Prepared by the researcher based on the outputs of the SPSS program

The results of Table No. (9) Indicate that the value of the (ANOVA) test is significant at the significance level of 5%, as its probability value was smaller than 5%, which indicates the presence of homogeneity and acceptable variance between both variables, and thus accepting the hypothesis that states:
"There are no fundamental differences between the fair value of the ordinary shares of commercial banks listed on the Iraqi Stock Exchange according to the profitability multiplier model and the market value".
 -Testing the significant differences between the fair value measured by the Lerner and Carlton model and the market value of the stock :
To test the hypothesis that:
"There are no fundamental differences between the fair value of the ordinary shares of traditional private commercial banks listed on the Iraqi Stock Exchange according to the Lerner and Carlton model and the market value".
The ANOVA test was used to test the significance of the differences, and the following table shows the results of the ANOVA test:

**Table No. (10) ANOVA test results for the Lerner and Carlton model used in measuring the fair value of common shares of commercial banks listed on the Iraqi Stock Exchange**

| ANOVA[b] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 1398.456 | 1 | 1398.456 | .118 | .734[a] |
| | Residual | 236270.597 | 20 | 11813.530 | | |
| | Total | 237669.053 | 21 | | | |
| a. Predictors: (Constant), Fair value according to the Lerner and Carlton model | | | | | | |
| b. Dependent Variable: Market value | | | | | | |

**Source:** Prepared by the researcher based on the outputs of the SPSS program

The results of Table No. (10) Indicate that the value of the (ANOVA) test is not significant at the 5% significance level, as its probability value was greater than 5%, which indicates the absence of homogeneity and unacceptable variance between both variables, and thus the null hypothesis is rejected. Which states: <There are no fundamental differences between the fair value of ordinary shares listed on the Iraqi Stock Exchange according to the Lerner and Carlton model and the market value>, and accepting the alternative hypothesis that states <There are fundamental differences between the fair value of ordinary shares listed on the Iraqi Stock Exchange according to the Lerner and Carlton model and the Market value>.
    **Second - simple regression test:**
    Simple regression was relied upon to test the third hypothesis, where the coefficient of determination was relied upon to measure the explanatory power of the models used in the Iraqi Stock Exchange. Below are the results of the explanatory power of the models used.

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**Table No. (11) Results of explanatory power according to the simple regression model for the models used to measure the fair value of common shares of commercial banks listed on the Iraqi Stock Exchange**

| Model Summary[b] | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| profitability multiplier | .541[a] | .293 | .246 | 83.650 |
| Lerner and Carlton | .077[a] | .006 | -.044- | 108.690 |
| a. Predictors: (Constant), PE, LC | | | | |
| b. Dependent Variable: SP | | | | |

**Source:** Prepared by the researcher based on the outputs of the SPSS program

Table No. (11) Shows that the value of the correlation coefficient for the first model (profit multiplier) is average and amounts to 0.541. It is also noted that the explanatory value of the model coefficient is acceptable, as (R Square) reached 0.293, meaning that the variables included in the model are able to explain only about 29.3%. From the changes in the dependent variable (share price in market value), the simple regression model explains 29.3% of the market value relationship with the fair value relationship according to the profitability multiplier model.

While the value of the correlation coefficient for the second model (Lerner and Carlton) is very low and amounts to 0.077, it is also noted that the explanatory value of the model coefficient is almost non-existent, as (R Square) reached 0.006, meaning that the variables included in the model are able to explain only about 0.6%. Of the changes in the dependent variable (share price in market value), the simple regression model explains 0.6% of the market value relationship with the fair value relationship according to the Lerner and Carlton model.

Based on the above, we conclude that the profitability multiplier model is better than the Lerner and Carlton model in measuring the fair value of the common shares of commercial banks listed on the Iraqi Stock Exchange.

Therefore, it can be said that incorrect valuation of stocks may lead to irrational investment decisions. Investing in bank stocks whose fair value is greater than the market value; any investment decision to sell these shares will be an irrational decision, as investors who hold these shares and wish to sell them can achieve greater profits if the share is valued at its fair value. As for investing in bank shares whose fair value is less than their market value, any investment decision to buy those shares It would be an incorrect decision, so investors who wanted to buy those shares could have achieved a lower cost if the stock was valued at a price lower than the price at which it was purchased.

It can be said that the efficiency of the Iraqi Stock Exchange market is weak and this is due to the large disparity between the market value and the fair value because the prices do not reflect the state of financial market equilibrium to indicate the extent of the market's response to new information with the aim of correcting the trends in the movement of market prices towards their fair value. This disparity between the market value and the fair value is due to the lack of information about the bank's performance, the disclosure may be insufficient information disclosed by the bank, speculation and manipulation of stock prices in the financial market. Incorrect analysis of information by investors.

**STUDY RESULTS AND RECOMMENDATIONS:**

Based on the questions raised in the study, and after analyzing and discussing the topic, it was possible to reach a number of results and suggestions, which are as follows:

**RESULTS:**

-There are no statistically significant differences at the significance level of 0.05 between the market value and the fair value of private commercial banks listed on the Iraqi Stock Exchange according to the profitability multiplier model.

-There are statistically significant differences at the significance level of 0.05 between the market value and the fair value of private commercial banks listed on the Iraqi Stock Exchange according to the Lerner and Carlton model.

- The profitability multiplier model is better than the Lerner and Carlton model in measuring the fair value of bank shares in the study sample.

**RECOMMENDATIONS:**

Based on the results of the study, the researcher recommends the following:

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- The possibility of relying on the profitability multiplier model by investors and financial analysts to measure the fair value of Iraqi Stock Exchange shares, as it has achieved acceptable results with acceptable consistency and variance between market value and fair value according to the model.

- The banks in the studied sample must disclose their dividend distribution policies, whether in the form of bonus shares or cash dividends, and on the date of preparing the final accounts because of its importance in applying the Lerner and Carlton model to accurately measure fair value.

-As a result of the importance of fair value according to the profitability multiplier model and its positive effects on investors' decisions, the research recommends the necessity of establishing the concept of fair value accounting among those working in the financial market, especially in the field of accounting.

- The current study made a comparison between the profit multiplier and Lerner-Carlton models in measuring the fair value of shares of private commercial banks listed on the Iraqi Stock Exchange. Therefore, the research recommends the possibility of repeating the study through comparison between all fair value models, with the aim of identifying the possibility of the existence of better models than the profitability multiplier model to measure fair value.

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