

Accounting versus Economic Based Measures of Performance and the Share Market Value: The Evidence of the Industrial Listed Firms at Abu Dhabi Stock Exchange

Dr. Mohammed Ibrahim Obeidat
Business Administration Department
Al Ain Campus-Al Khawarizmi International College
Al Ain, United Arab Emirates
E-Mail: misobeidat_2015@yahoo.com

Nadeen (M. A) Darkal
Department of Business Administration
Jadara University
Irbid-Jordan
E-Mail: nnnonly@yahoo.com

Abstract:- The study investigates the effect of accounting and economic based measures of performance on the share market value of the listed manufacturing firms at Abu Dhabi Stock Exchange. It objects for determining whether accounting or economic based measures of performance are affecting the share market value, and which group of measures has more effect. For the purposes of the study, the effect of two independent variables had been tested in their effect on share market value. The first group is the accounting based measures, where earnings per share, return on assets, and return on equity, are the selected components of this group. The second group of measures is the economic based measures, where the market value added, and the economic value added are used within this group. The cross sectional data had been collected from the annual reports issued by these firms over the period 2014-2016. Using the multiple linear regression method in the analysis and hypotheses testing, each of both groups of variables had been found affecting the share market value. Moreover, the study found that grouping all measures in one group leads to more significant effect on share price, than individual separated groups. As additional unrelated analysis to hypotheses, when each measure, using the simple linear regression method, is tested individually in its effect on the share market price, only the market value added found having a significant effect on share market value of listed firms at Abu Dhabi Stock Exchange.

Key Words: Share market Value, Earnings per Share, Return on Assets, Return on Equity, Economic Value Added, Market Value Added

1. Introduction

The study investigates the relationship between some value-based performance measures and some selected accounting based measures in one hand, and the share market price in other hand. Actually, it attempts to determine which group of measures is more affecting the share market price, the value-based measures or the accounting earnings-based measures. Accounting earnings based measures are the common measures used in evaluating the performance of firms despite that most of these measures do not reflect the shareholders wealth, where shareholders have strong attention in firms' wealth and in share market value.

Among the value based measures that the study takes into consideration are the Economic Value Added (EVA) and the Market Value Added (MVA). In addition, among the accounting based measures, the study takes into consideration Earnings per Share

(EPS), Return on Assets (ROA), and Return on Equity (ROE). Accounting based measures are criticized that they do not reflect the change in share value, especially where these accounting based measures do not reflect the effect of inflation and risk, and do not take into consideration the cost of additional capital used to finance new growth or expansion (Sikdar, 2013). In addition, accounting based measures can be affected by the phenomenon of earnings management and other manipulation activities that managers may exercise just to show better profits than the actual, and then receive more profit based financial awards. Nowadays, shareholders are strongly interested with share market price and with measures that affect the share value. As a result, several firms in different countries adopted the use of economic based performance measures, since these measures may better affect the shareholders' wealth and share market price, than the traditional accounting based measures.

Assessing the performance of business organizations is necessary to be done, at least one time a year. This assessment highlights the weaknesses and strength of performance, and shows whether the firm is in the correct road towards its objectives, or deviations are available, so correcting actions are needed to be taken to redirect the performance toward the objectives. Maximizing firm value and achieving a reasonable profit are considered the key objectives of business organizations, and achieving profits lead to firms' survival. In addition, shareholders, owners, creditors, and other stakeholders need for a complete image of performance, in order to construct an ability to take the correct decision at the correct time and amount. Sometimes, depending on accounting measures is not enough to form this needed complete image for decision making. Therefore, using additional non-accounting measures, such as firms' value creation measures, will enable users to make a clear image regarding the firms and its profitability. Therefore, the current study comes to investigate which group of measures are more associated with the share market value, the accounting earnings based measures, or the value based measures? In brief, the problem of the study can be well presented through the following question. Which group of measures or indicators are better reflected in the share market price, the accounting earnings based measures, or the value based measures?

A large number of studies investigated the effect of traditional accounting based measures on shares market price, or the relationship between accounting earnings based measures and share market value, but too much fewer studies investigated the effect of value added measures on share market price. Therefore, this study comes to compare between accounting based measures of performance, and the value based measures, in its reflection on share market price. As a result, the study is important since it attempts to determine which group of measures, shareholders can depend on, whenever they are required to take decisions, especially where some shareholders lost a part of their wealth, because their

2. Literature Review and Prior Researches

The share market value changes normally to reflect the information issued by firms. Several studies had been carried out to understand the changes in the share market value, but still these changes seem understandable. Most prior researches that carried out to understand the change in share market prices focused on only accounting earnings based measures, despite that the change in market prices can be attributed to several factors such, information understanding, perceptions, and interests of shareholders. A share market price increases when demand for that share exceeds the supply, whereas in opposite, its price declines when demand became less

decisions were only based on accounting earnings measures, and these measures are affected by the practices of accounting manipulation. The study attempts to enable investors and other users to take better decision by depending on different measures whenever they are required to take investment decisions. In other words, the study stems its importance from the clear image of measures that have stronger effect on share market price, where this study attempts to determine. The importance of the current study increases also while it is expected to add more literature and knowledge regarding the effectiveness and efficiency of selected different performance measures.

The primary objective of the study is to determine whether accounting earnings performance measures or the value based performance measures, are better reflected in the changes of share market value. Other secondary objectives the study attempts to achieve. Some of these secondary objectives, is that it attempts to compare between two groups of measures on evaluating firms' financial performance. In addition, it shows the advantages and disadvantages of each individual measure, and each group of measures.

The subject of the study is rare because few and few studies investigated two different groups of measures on share market price, the first is accounting based, while the other is value based. Therefore, the study is distinguished from prior related researches, in different aspects. It compares between different two groups of performance measures, and different in its direction, place, and securities exchange listed firms, but the most important issue, is that it differs in its methodology, variables, and methods of analysis.

The rest of the study is structured as follows. Section 2, presents the literature review and the findings of the related prior researches. The hypotheses of the study are available in section 3, whereas section 4 presents the methodology of the study. Section 5 is actually consists of data analysis and results, while the conclusions are shown in section 5.

than supply. Shareholders and investors need more of a firm's share, when they receive good information about the performance of that firm. Some academics, researchers, and practitioners believe that shareholders are interested only with some accounting earnings based measures such as EPS and ROA, while some investors are more interested with value creation based measures such as EVA and MVA. Because financial statements are subject to manipulation, income smoothing, creative accounting, and earnings management, shareholders may become less interested with accounting earnings based measures (Poorzamani and Otari, 2015). As a result, some shareholders, these days, are more interested with value based performance measures.

Since long ago, EPS is considered as the most important accounting earnings based performance measure, since it reflects how much each share achieved in profit. EPS is defined as “the revenue earned by a company after meeting the cost of production, then interests, depreciation and tax belongs to equity shareholders” (Bhatt and Sumangala JK, 2012). Despite that this definition lacks the accuracy, since it doesn't mention the subtraction of preferred dividends, but it represents the meaning of EPS in a firm has no preference shares in its capital structure. Recently, The Financial Accounting Standards Board (FASB) requires the disclosure of diluted EPS, not

One important measure of firms' profitability is ROE, where this measure is computed by dividing net income by stockholders' equity. This measure shows a shareholders rate of return on their investment in that firm (Kabajeh, Al Nu'aimi, and Dahmash, (2012). Several studies found that ROE has a significant effect on share market value, and therefore, it contributes in explaining the changes in share market price, such as, Kohansal and others (2013), Al Tahtamouni and Al Slehat, (2013), and Sharif, Purohit, and Pillai (2015).

ROA is another common accounting earning based performance measure. Shareholders, investors, and other users, are interested with this measure. It is actually computed by dividing net income by the total assets of the firm, to show the operating efficiency of the firm based on net earnings. ROA can be found by only dividing net income after tax by the assets. Several prior studies found a relation between ROA and the stock market value, such as Kabajeh, Al Nu'aimat, and Dahmash, (2012), (Dadrasmoghadam and Akbari, (2015), and Zaheri and Barkhordary (2014).

Recently, the importance of value based performance indicators had been increased. As a result, several firms in different countries began taking some of these value based indicators in assessing its performance. Several value based measures can be used, but the most common used are the MVA, EVA, Cash Value Added (CVA), and Economic Profit. These value based performance measures are normally

Several prior authors corroborated the existence of a significant relationship between MVA and share market prices, including, Panahi and Others (2014), Grant (1996), Davies (1996), and Walbert, (1993).

The EVA is also a common value based measure of performance, and it is closely related to MVA. EVA is connected with MVA, where MVA is the present value of future and present EVA. Therefore, the computations of EVA can be done as follows:

$$MVA = \sum_{i=0}^{\infty} \frac{EVA_i}{(1 + WACC)^i}$$

only EPS. Several Studies found that EPS has a strong effect on the share market price, such as Sharma (2011), Al Shubiri (2010, Bhatt and Sumangala JK (2012), et al. EPS is actually computed by subtracting preferred dividend from net income, in case the firm has preference shares within its capital structure, then dividing the remaining income by the weighted average number of ordinary shares outstanding. Therefore, in case that the preference share are not used in the capital structure, EPS is computed by dividing net income by the number of ordinary shares outstanding.

used in measuring firm's value creation. In other words, it measures the value created for shareholders' wealth. These value based indicators have advantages over the accounting indicators. These measures take into consideration the cost of capital and the risk of firms' operations. Actually these measures are considered good indicators especially because they measure to what extent the firm added value to its shareholders. Since the most important objectives of business organizations is to maximize the value, (Bukvich, 2014), and (Ozhi, 2,000), these value based measures are in consistent with firms' key objective.

Starting the discussion of the value based measures with MVA, this measure is actually the difference between the firm's market and book value of its shares. Therefore, when the market value of a firm's shares exceeds the amount of capital invested at that firm, it is said that the firm had managed to create shareholders' value, but in opposite, when the market value of a firm is less than the amount of capital invested, it is said that the shareholders' value had been destroyed (Ozhi, 2000). The MVA is computed using the following relation.

$$MVA = \text{Firm's Total Market Value} - \text{Capital invested}$$

Assuming that the market value and book value of debt are equal, where this is the most common situation, then:

$$MVA = \text{Equity Market Value} - \text{Equity Book Value} \dots\dots\dots (1)$$

Where WACC refers to weighted average cost of capital. Substituting for MVA, the equation will be as follows:

$$MVA = BVA + \sum_{i=0}^{\infty} \frac{EVA_i}{(1 + WACC)^i}$$

A more simplified formula can be used to compute the EVA is as follows (Khan, Aleemi, and Qureshi, 2016).

$$EVA = \text{Net Income} - (\text{Cost of Capital} \times \text{Total Capital}) \dots\dots\dots (2)$$

Too much prior studies investigated the impact of different accounting based measures on share market value, but less investigated the effect of economic based measures on share price, and fewer studies investigated a mix of these accounting and economic based measures on share price or compared which group is more affecting the share market price.

The key objective of a study that carried out by Khan, Aleemi, and Qureshi (2016), was to examine whether the EVA has some superiority over the accounting earnings based performance measures such as ROA, ROE, EPS, operating cash flows, and debt to equity ratio. The data of the study had been collected from a total of 28 nonfinancial listed firms at Karachi Stock Exchange over the period 2009-2012. Using panel data regression in hypotheses testing and data analysis, the results of the study did not reveal any superiority of EVA over accounting based measures.

Nakhaei (2016), attempted to determine whether the MVA or the traditional accounting criteria, better predicts the stock returns of Malaysian firms. The purpose of the study was to provide empirical evidence on the relative and incremental information content of MVA and some traditional accounting measures. The sample of the study consisted of 395 listed nonfinancial firm at Bursa Stock Exchange of Malaysia over the period 2002-2011. The panel data regression method had been used in the analysis and hypotheses testing. No empirical evidence found that the market value is superior to traditional accounting measures, but the MVA is beneficial when used in describing the stock returns of listed nonfinancial firms of Malaysia.

The finding of the study that carried out by Riahi and Khoufi (2016), are important, and deserve to be mentioned here within the study. The authors investigated the impact of fair value accounting on firms' reputation. Their purpose of the study was to examine the effect of fair value applications in the French context on the shareholder value creation. It is a comparative study where its authors compared between the information relevance of accounting indicators of French Corporate Groups in the industrial sector pre-fair value period and post-fair value period. They found that the traditional measures still retain its rank as good indicators in determining stock return, and a marked improvement in information content of variables if they were issued at an understandable clear form under the fair value model.

One study carried out by Pouraghajan, Taghipoury, and Bavandi, (2015), investigated the effect of working capital strategies on stock price changes and cash value added, in listed firms in Tehran Stock Exchange. The study actually classified the strategies of working capital management into conservative, bold, and moderate. Based on the data analysis of a sample consisted of 110 firms, the study found that the strategies of working capital affect the

change in stock price but do not affect the cash value added.

Dadrasmoghadam and Akbari (2015), investigated the relationship of current ratio, assets turnover, ROA, ROE, and debt ratio of listed food groups, sugar, agricultural machinery and equipment, and related service firms in the stock exchange of Iran with share market prices of these firms over the period 1999-2009. The study reveals that debt ratio, current ratio, and ROA have a significant effect on share market prices. The study also demonstrates that a positive relationship exists between ROA and the share market price.

Kumar (2015), investigated whether the book value maximizers are the highest wealth creators in the Gulf Cooperation Council Markets. In addition, the author analyzed the financial value drivers in the same group of markets. The study shows that banking, petrochemical, energy industry, and the industrial sector, are the strongest value creators. Additional finding of the study is that market valuations are higher for firms that invest more in capital expenditures, and the sales growth is a significant value driver.

Etengu and Nasieku (2015), investigated the relationship between accounting based measures and investments decisions. Several accounting based measures had been taken into consideration in the study, among these are EPS, and ROE. The study shows a strong significant relationship between these measures and the share market price. As a result, the study demonstrated that accounting information is value relevant.

Poorzamani and Otari (2015), investigated the content of MVA and cash value added in performance evaluation of Tehran Stock Exchange. The study demonstrates no information content regarding firms performance, whereas, it shows that financial and accounting information play a minor role in stimulating prices, where the large portion of change in stock prices can be attributed to other variables.

Sharif, Purohit, and Pillai (2015), examined the most important factors affecting share prices of 41 listed shareholding firms at Al Bahrain Stock Exchange along the period 2006-2010. Pooled OLS regression with robust standards errors and fixed effects and random effects model were used in testing the hypotheses of the study. The study shows that ROE, book value per share, dividends per share, dividend yield, price earnings, and firm size, each of which, has a significant relationship with stock prices.

Al Omush, (2014), carried out a study to identify the value relevance of a set of measures, including cash flows from operations, earnings before interests, tax, and depreciation, earnings before interests and tax, net income, earnings before extraordinary items, cash value added, and EVA. The study collected data from 986 UK listed firms in London Stock Exchange over the period 1990-2012.

The study showed that cash flows from operations has the highest explanatory power in evaluating the financial performance of firms. The study ranked the remaining measures based on their explanatory power as follows: earnings before interests, tax, and depreciation and amortization, earnings before interests and tax, net income, earnings before extraordinary items, cash value added, and EVA.

The economic value added was among the attention of Awan, Siddique, and Sarwar (2014), when they tested whether the effect of EVA on share market value is existed. The study had been applied on 59 listed firms at Karachi Stock Exchange. Panel data technique had used as a research model. Results of the study indicated that the stock value is affected by EVA, where the value added had been found significant at less than 10 level.

Share prices of food listed firms at Tehran Stock Exchange was among the interests of Kohansal and others (2013). The objective of the study was to examine the relationship between different financial ratios on stock prices of food listed firms at the Stock Exchange. The most important conclusion of the study is that ROE, ROA, and current ratio have a significant positive relationship with stock prices of food firms.

A case study of the Oil and Natural Gas Corporation Limited that headquartered in India, had been carried out by Sikdar (2013). The study investigated the relationship between some value based measures and accounting based measures on the share market value of the company. In more details, the study took into consideration return on capital employed, EPS, and earnings before interests, taxes, depreciation, and amortization measures, as accounting earnings based measures, and EVA, MVA, and cash value added, as value based measures. The study finds that, except EPS, all other accounting earnings based measures failed to capture the valuation of share price, while the value based measures have a strong relationship with share market price. Moreover, the study showed that a moderate correlation exists between accounting earnings based measures and value based measures.

Kabajeh, Al Nu'aimat, and Dahmash (2012), investigated the effect of some accounting earnings based measures including ROA, ROE, and Return on Investment (ROI) on share market price of Listed insurance firms at Amman Stock Exchange. The study shows that ROI and ROA have a positive relationship with stock market prices, while ROE has no significant relationship with stock market prices of listed Jordanian insurance firms.

Bhatt and Sumangala JK (2012) carried out a cross sectional study to investigate the impact of EPS on share market value of the first 50 listed firms in the

list of India's most valuable firms as per the Business Today Survey of 2010. The study shows that EPS affects the market value of shares, and it explains about 54 percent in market value of change in share prices.

Hejazi , and Oskouei (2007), Investigated the cash value added as directly linked to shareholders' value creation of 85 industrial listed firms at Tehran Stock Exchange over the period 1999-2003. The study showed that both of cash value added and price/earnings ratio have explanatory power to each other.

Urbanczyk, Jaroszewicz, and Urbaniak (2005), examined both of the EVA and cash value added as increasingly common indicators used in evaluating the financial performance of business organizations. The study showed that EVA and cash value added are more efficient measures in evaluating the performance of firms. The study shows that based on tradition accounting measures of profitability, Polish firms do not generate value to shareholders, and the measures of cash flows demonstrated a high degree of risk. Therefore, the authors recommended these firms to use economic and cash value added, since they found that these two non-traditional two measure are more efficient in evaluating firm's performance, especially where firms are working in transitional economies.

Fernandez (2003), investigated the three residual income models for equity valuation. The three residual income measures were investigated by the author include the EVA, economic profit, and the cash value added. The study showed that the equity value equals the present value of economic profit discounted at the required return on equity plus the book value of equity. In addition, the study demonstrated that the firms' market value equals the present value of cash value added discounted at the weighted average cost of capital plus the book value of the firm's equity and debt.

Ozhi, (2000) investigated the effect of MVA on the share market price depending on 27 listed firms in Bombay Stock Exchange over 1997-1999. Stern Stewart Formula is used in the computations of MVA in this study, where MVA, based on this formula, is the difference between the market value of equity and book value of equity, and share market value is computed in the study by dividing MVA by number of shares outstanding. The study reveals that neither MVA, nor the MVA per share nor any single measure alone can explain the variations in share prices, but the MVA per share explains well the variations in the market prices of shares.

3. Study Hypotheses

Since no agreement among authors and practitioners regarding which is better reflected in share market price, the economic-based measures, or

the accounting based measures, the following three hypotheses had been developed, in its null form.

Ho₁: The group of accounting based measures of performance are not reflected in the share market value

of the listed manufacturing firms at Abu Dhabi Stock Exchange.

Ho₂: The group of economic-based measures of performance are not reflected in the share market value of the listed manufacturing firms at Abu Dhabi Stock Exchange.

Ho₃: The share market value of the listed manufacturing firms at Abu Dhabi Stock Exchange does not reflect both of the accounting-based or the economic-based measures of performance.

4. Research Methodology

The study is empirical in its nature, where in this type of studies, the required data is secondary. In general, the required secondary data had been collected from journals, periodicals, text books, and internet, but the data used in the analysis had been gathered from the annual reports issued by the related listed firms at ADX, where these reports includes the annual financial reports of firms.

The study population includes all listed industrial firms at ADX. It is cross sectional study that takes into consideration the data of the above mentioned group of firms, where the data used in the analysis covers the three years extended from 2014 to 2016.

The dependent variable of the study is the variation in share market value of the listed manufacturing firms at ADX. The average of beginning and ending year share prices is used as the single dependent variable.

The group of accounting-based measures of performance is the first independent variable, where this group includes EPS, ROA, and ROE, whereas the group of economic-based measures include the MVA, and the EVA. EPS is computed by deducting dividends of preference shares from the reported net income, then dividing the rest by the weighted average number of ordinary (common) shares outstanding, as follows.

$$EPS = \frac{NI - Preference\ Dividends}{No.\ of\ Ordinary\ Shares}$$

Where:

NI: refers to net income

The computations of ROE is similar to the computations of EPS with small difference in the remunerator. It is normally computed by subtracting the dividends of preference shares from the figure of net income, and the remaining is divided by average stockholders' equity. The formula that normally used in the computations of ROE is as follows:

$$ROE = \frac{NI - Preference\ Dividends}{Average\ Stockholders'\ Equity}$$

5. Analysis and Results

Regarding ROA, it is actually a relation between earnings and the total assets used to achieve that amount of earnings. It is computed as follows:

$$ROA = \frac{NI + [Interest\ Exp. \times (1 - TR)]}{Average\ Total\ Assets}$$

Where:

TR: refers to tax rate.

The regression model that represents the assumed effect of accounting based measures of performance on the share market value of listed manufacturing firms at ADX is as follows.

$$ABM = a + bEPS + cROA + DROE + E \dots\dots\dots(1)$$

Where:

A, b: constants where a represent the fixed effect and b refers to the variable effect

ABM: Accounting based measures.

EPS: Earnings per share.

ROA: Return on total assets

ROE: Return on shareholders' equity

The computations of EVA is simple. It can be done by multiplying the cost of capital by the total capital invested in the firm, where the cost of capital is simply equals dividends paid for stockholders plus cost of borrowed funds. It is computed as follows:

$$EVA = Net\ Income - (Cost\ of\ Capital \times Total\ Capital)$$

The computations of MVA and EVA concentrate on the value created to shareholders. The MVA is computed using on the following equation.

$$MVA = MVE - BVE$$

Where:

MVE: the market value of equity

BE: the book value of equity

The following regression model is used to enable testing the assumed effect of economic based measures on the share market price of listed manufacturing firms at ADX.

$$EBM = a + bMVA + cEVA + E \dots\dots\dots(2)$$

Where:

EBM: the economic based measures of performance.

MVA: the market value added of firms.

EVA: the economic value added of firms.

The total assumed effect of both of accounting and economic based measures on the share market value of listed manufacturing firms at ADX is represented through the following model of multiple regression.

$$SMV = a + bABM + cEBM + E \dots\dots\dots(3)$$

Where, SMV: The share market value

The related data of the included firms in the sample is shown in table (1). The table shows that the highest share market value is 2.78 dirhams, and attributed to firm No.7, whereas the least one equals 0.87, and due to firm (8). Considering EPS, few firms achieved high EPS, whereas the majority of firms have low or minus EPS. The highest EPS equals 77.3 percent, where the least one is -0.007. ROA is too much low for all firms. The highest value of ROA is

0.041, whereas, -0.067 is the least value of ROA. Similar to ROE, the value of ROA is low for all included firms in the study. The highest value of ROE is 0.04, while the least ROE equals -0.04. In addition, 8 among 12 firms have a positive MVA, whereas 4 have a negative MVA. With regard to EVA, only 5 firms have a positive EVA added, and 7 have a negative value of EVA.

Table (1): Historical Required Data of firms

Firm	Ave. Share Price	EPS	ROA	ROE	MVA	EVA
(1)	2.60	0.083	0.047	0.01	323287800	-431666.6667
(2)	1.04	-0.007	-0.007	-0.01	67083333.33	-37949333.33
(3)	0.81	-0.070	-0.067	-0.04	-58000000	-28075612
(4)	1.50	0.113	0.063	0.023	56503333.33	9285509.667
(5)	1.19	0.173	0.043	0.02	-53091358	23246573.33
(6)	1.11	0.073	0.050	0.04	86215166.1	-58300773.67
(7)	2.78	0.203	0.093	0.053	-1.04443E+12	-1.16625E+11
(8)	0.87	0.020	0.015	0.015	-74070150	-17174852
(9)	3.13	0.000	0.073	0.02	2.41108E+12	95017666.67
(10)	1.14	0.057	0.037	0.02	217257740	-33731854693
(11)	1.44	0.000	0.040	0.027	6.27976E+11	25300000
(12) UCC	1.30	0.773	0.041	0.037	652698750	501914000

Table (2) shows some descriptive statistics that are related to the variables of the study. Considering the table, the mean of EPS is 0.118 with 0.22 standard deviation. When the maximum value is considered, one firm has 0.77 EPS, which is actually considered an outlier, since the next lower one is 1.73. It can be said that the mean of EPS is acceptable, despite the high standard deviation, but excluding the outlier value, the standard deviation will decline. Moreover, the table shows that the mean of ROA is 3.6%, with 0.44 standard deviation. This value of ROA is considered too much low, despite that few firms achieved an acceptable ROA. This means that the profitability of manufacturing industry is considered low, based on the relation between earnings and the invested capital in the firms of this industry. As a result, adopting different policies is required to increase the profitability of firms, because large

amounts of capital are invested in the firms attributed to the manufacturing industry. Considering ROE, it has a mean of 0.018 with 0.024 standard deviation. The mean of ROE is also low, despite that its standard deviation is low. The maximum value of ROE is also low, where it equals 0.05. All of this data indicates low profitability of the invested capital by stockholders.

Based on the consideration of MVA, the mean of MVA equals 166,320,323,718, with 795,815,525,744 standard deviation. Therefore, good MVA is achieved by firms, but with high standard deviation, since the standard deviation is too much far to the right from the mean. With regard to the EVA, it equals 1,248,700,194, with 3,403,128,744 standard deviation. This mean is high, but also the standard deviation is high. In general, good EVA is achieved by these firms, despite that 7 firms have a negative EVA.

Table (2): Descriptive Statistics of the measures

Measure	Minimum	Maximum	Mean	Std. Deviation
EPS	-0.07	0.77	0.1182	0.22
ROA	-0.07	0.09	0.036	0.41
ROE	-0.04	0.05	0.018	0.024
MVA	-10,443,000,000	241,108,000,000	166,320,323,718	795,815,525,187
EVA	-116,625,000,000	501,914,000	1,248,700,194	3,403,128,744

Table (3) shows the Pearson correlation coefficients among the measures and variables. As mentioned above, accounting measures include EPS, ROA, and ROE, whereas the economic based measures include MVA, and EVA. Considering the table, the correlation coefficient between the group of

accounting based measures and the group of economic based measures equals -0.093. Individual coefficients among each of accounting based measures and the group of economic based measures equals, and between each individual economic based measure and the accounting based measures are also shown in the

table. In general, it is apparent that a weak and a negative external correlation exists between each individual measure in one group with individual measures of the other group, and with the other group as a whole. Internal correlation coefficients among

Table (3): Coefficients of Correlation

	MVA	ROA	ROE	EVA	EPS	Accounting Measures	Economic Measures
MVA	1	-0.06	-0.024	0.477	-0.147	-0.094	0.999
ROA		1	0.989	0.002	0.985	0.994	-0.058
ROE			1	-0.024	0.982	.993	-0.024
EVA				1	-.051	-0.032	0.511
EPS					1	0.996	-0.146
Acc. Measures						1	-0.093
Eco. Measures							1

5.1 Testing the Hypothesis

Based on the literature review and the related prior researches, three hypotheses had been developed to achieve the objectives of the study. Multiple regression had been used to test the hypotheses of the study. All hypotheses had been tested based on 0.95 level of confidence (0.05 coefficient of significance), where the decision rule to accept or reject the null hypothesis is based on f-value and the coefficient of significance.

The first hypothesis had been developed to test whether the share market value reflects the accounting based measures of performance. Three common accounting based measures are used to measure the first hypothesis including, EPS, ROA, and ROE. The first hypothesis is again presented below, in its null form, as follows.

Ho₁: The group of accounting based measures of performance are not reflected in the share market value of the listed manufacturing firms at Abu Dhabi Stock Exchange.

Table (4) shows the results of data analysis that is related to the first hypothesis. The table shows that the coefficient of correlation between the market share value in one hand, and accounting based measures, that includes EPS, ROA, and ROE, in the

measures in one group is positive and high, where this is the nature, because of similarity in computations. The coefficients of correlations appearing in table (3) support the reliability of the study and the measures used to measure each hypotheses.

other hand, equals 0.678, which means that there is a strong correlation between the entire accounting based measures of performance and the share market value. The table also shows that the coefficient of determination (r^2) equals 0.46, which indicates that these three accounting based measures determine about 46 percent of the change taking place in the share market value of listed manufacturing firms at ADX. Moreover, the table reveals that f-value is 8.787 and the coefficient of significance is zero, or a much closed value to zero. Regarding t-values of accounting based measures that used in the study are shown also in table (4), where this table shows that t-values for ROE, ROA, and EPS are 3.744, -2.721, and -0.82 respectively.

Because the computed f-value is greater than the tabulated one, which equals 3.27, and because the computed coefficient of significance is less than the predetermined one, which equals 0.05, the null hypothesis is rejected, where instead, the alternative one is accepted. This result means that accounting based measures affect the share market value of listed firms at ADX. It also demonstrates that ROE is the most accounting based measure affecting the share market price, followed by ROA, while EPS is the least measure affecting the share market prices.

Table (4): Ho₃ Test Results of Analysis

Hypothesis & Measure	r	R ²	Adjusted R ²	Deg. Of Freedom	f-value	t-value	Coe. of Significance
Ho ₁	0.678	0.46	0.407	34	8.787		0.000
EPS				34		-4.356	0.000
ROA				34		-.249	0.805
ROE				34		3.898	0.000

Based on the above mentioned results, the actual regression model that represents the effect of accounting based measures of performance on the ABS = (2.716E+11) – (7.007E+12) – (1.059E+12) + 1.3949E+12 + 8.882E+11. (4)

share market value of listed manufacturing firms at ADX is as follows.

5.2

Testing the Second Hypothesis

The second hypothesis had been developed to enable testing the assumed effect of economic based measures on the share market value of listed manufacturing firms at ADX. The two economic based measures of performance that used to perform this are MVA and EVA. The hypothesis is again presented, in its null form, as follows.

Ho₂: The group of economic-based measures of performance are not reflected in the share market value of the listed manufacturing firms at Abu Dhabi Stock Exchange.

Table (5) shows that the coefficient of correlation between the entire economic based measures, that includes MVA and EVA, in one hand, and the share market value in the other hand, equals 0.988, where this high value of correlation indicates the existence of a strong correlation. The coefficient of

determination equals 0.976, which indicate that this group of measures explains a high degree of the change in share market value of listed manufacturing firms at ADX. Too much high f-value, the test shows, where f-value equals 642,091, and the coefficient of significance equals zero. The table also shows that t-value of MVA and EVA equal 35.091, and -12.39 respectively.

Because the computed f-value is higher than the predetermined one, which equals 2.87, and because the computed coefficient of significance is less than the predetermined one, which equals 0.05, the null hypothesis is rejected, where instead, its alternative one is accepted. This result means that the share market price of listed manufacturing firms at ADX strongly reflects the changes in economic based measure.

Table (5): Ho₂ Test Results of Analysis

Hypothesis & Measure	r	R ²	Adjusted R ²	Deg. Of Freedom	f-value	t-value	Coe. of Significance
Ho ₂	0.988	0.976	0.974	34	642.091		0.000
MVA				34		35.461	0.000
EVA				34		-12.39	0.805

$$EVE = -6493298527 + 0.983 -7.767 + 3.996E+23..... (5)$$

Based on the results of analysis, the actual regression model that represents the entire effect of both of MVA and EVA is presented as follows.

5.3 Testing the Third Hypothesis

The third hypothesis had been developed to enable testing the effect of both accounting based measures (EPS, ROA, and ROE) and the economic based measures (MVA and EVA) on the share market price of the listed manufacturing firms at ADX. The second hypothesis is again presented as follows.

Ho₃: The share market value of the listed manufacturing firms at Abu Dhabi Stock Exchange does not reflect both of the accounting-based or the economic-based measures of performance.

Table (6) shows a 0.988 coefficient of correlation and a 0.976 coefficient of determination. This means that there is a strong positive correlation between all measures of performance and the share market price of the listed manufacturing firms at ADX. The coefficient of determination equals 0.976, where this indicates that all measures of performance that the study takes into consideration, determine about 0.976 of the changes taking place in the share market value.

The individual t-values of the 5th measures is, 0.048, -0.0655, -0.607, 25.003, and -10.879 of EPS, ROA, ROE, MVA, and EVA, respectively, when these 5 measures are tested together in their effect on the share market price using the multiple regression.

Considering the table, it shows a 237.757 computed f-value and zero coefficient of significance. When the computed f-value is compared with its corresponding tabulated one, that equals 2.787, the computed one is found higher than the tabulated, and when the computed coefficient of significance is compared with the predetermined one, that equals 0.05, the computed one is found less than the computed. Because the computed f-value is higher than the tabulated one, and because the computed coefficient of significance is less than the predetermined one, the null hypothesis is rejected, whereas its alternative one is accepted. This result means that the grouped effect of the different measures of performance is significant.

Table (6): Ho₃ Test Results of Analysis

Hypothesis & Measure	r	R ²	Adjusted R ²	Deg. Of Freedom	f-value	t-value	Coe. of Sig.
Ho ₂	0.988	0.976	0.972	34	237.757		0.000
EPS				34		0.048	0.962
ROA				34		-0.0655	0.511

ROE				34		-0.607	0.549
MVA				34		25.003	0.000
EVA				34		-10.879	0.000

Table (7) presents the results of multiple regression when only two variables are taken into consideration, the accounting based measures and the economic based measures, and not 5 individual measures are used. The table shows that the coefficient of correlation (r) equals 0.913 and the coefficient of determination equals 0.834. The value of correlation coefficient indicated the existence of strong correlation among the two separated groups of measures (accounting and economic based measures) in one hand, and the share market price, where this means a strong correlation between both variables in one hand, and the share market price in the other hand. The value of the coefficient of correlation also indicates that these two groups of independent variables determine about 83 percent of the variation in share market value of the listed manufacturing firms at ADX.

Moreover, table (7) shows that the computed f -value equals 80.319 and the computed coefficient of significance equals zero, or a too much close value to zero. When the computed f -value is compared with its corresponding tabulated one, it is apparent that the computed one is greater. In addition, when the computed coefficient of significance is compared with its corresponding predetermined one, which equals 0.05, it is clear that the computed one is less. Since the computed f -value is higher than the tabulated, and the computed coefficient of significance is less than the predetermined, the null hypothesis is rejected, whereas its alternative one is accepted. This result means that there is a significant effect of the collected accounting based measured and economic based measures of performance on the share market price of listed manufacturing firms at ADX.

Table (7): H_0_3 Test Results of Analysis using 2 Groups of Independent Variables

Hypothesis & Measure	r	R^2	Adjusted R^2	Deg. Of Freedom	f -value	t -value	Coe. of Sig.
H_{0_2}	0.913	0.834	0.824	34	80.319		0.000
ABM				34		0.018	0.986
EBM				34		12.620	0.000

5.4 Additional Analysis.

More analysis had been done to get more details regarding the effect of some accounting and economic based measures. In more details, the simple linear regression method had been used to test the independent individual effect of each measures on

share market value. Table (8) summarizes the results of using simple linear regression method. When this table is considered carefully, only the MVA has a positive strong effect on the share market value of listed manufacturing firms at ADX. While other measures have no significant influence.

Table (8): Results of Simple Linear Regression

Measure	r	R^2	Adjusted R^2	Deg. Of Freedom	t -value	Coe. of Sig.
EPS	0.135	0.018	-0.011	34	-0.784	0.439
ROA	0.06	0.004	-0.027	34	-0.347	0.731
ROE	0.008	0.000	-0.030	34	-0.043	0.966
MVA	0.927	0.859	0.855	34	14.180	000
EVA	0.142	0.020	-0.009	34	0.826	0.415

6. Conclusions and Findings

As a result of data collection and analysis, the study led to several conclusions. The study found that the share market value reflects both of accounting and economic based measures of performance, but it stronger reflects the economic based measures of performance, than the accounting based measures. It finds that both types of performance measures have a significant effect on the share market value of listed firms at ADX. It shows that the effect of economic based measures have a stronger effect on share market value than the accounting based measures.

In addition to the above mentioned conclusions, using the simple linear regression method, the study reveals that MVA and EVA, each of which has a significant effect on the share market value, but EPS, ROA, and ROE have no significant effect. In brief, the results of Simple regression reveals that each economic based measures have a significant individual effect, whereas each accounting based measures have no significant individual effect on the share market price. The findings of the study resemble the findings of different prior related researches.

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