The Relationship between Economic Value Added, Accounting Profit and Cash Flow with the Market Value: Evidence from Saudi Arabia

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A R T I C L E   I N F O

A B S T R A C T

This study focuses on the impact of economic value, accounting profit, and operating cash flow on firms market value. Using 62 Saudi listed companies from different sectors and a multiple regression analysis , we test the relationship betweenthefinancial performance indicators and the firmsmarket value. Two sets of models are used: the first one iswith EVA while the second Model is without EVA,this is in order to confirm the strength of EVA among others indictors for explaining the market value. Our results show thatthe uses of EVA have areasonable contribution of explaining the market value over the traditional financial indicators. We find also thatthe Return on Equity (ROE) has the second most importantimpacton firms'market value.

INTRODUCTION

Shareholders wealth and its growth is the central goal of any business organization(Palepu*et al*., 2004;Bacidoreet *et al*.,1997), which led to huge focus on measuring firm's performance and financial outputs (Sharma and Kumar,2011). Measures are classified into internal performance measures (accounting based measures) and external performance measures (market based measures),(Zureigat,2010). The accounting earnings and cash flow are considered as traditional financial performance measures, (Zafiris and Bayldon, 1999).

Those measures are calculated based on the financial statement reportsand they are prepared based on general acceptable accounting principles (GAAP) which were being under criticism through the literature(Al Mamun, *et al*. 2012; Khaled,2012; Kim, 2006).In fact, itdoes not matter which measurement tool or indicator should be used to evaluate firm financial performance, if it reflects the real performance of the shareholders wealth, but unfortunately either accounting earning nor the cash flow are not accurately weighted and assessing the shareholder wealth(Sharma and Kumar ,2010).

In order to overcome the criticism of traditional approach, the Stern Stewart and Company was introduced in 1982 what commonly called the economic value added (EVA) and it registered as trade mark for it.Economic value added (EVA) is another indicator that we can use in order to evaluate

the financial performance measure.It should be able to accurately assessing and explaining shareholder wealth, (Reddy, 2013).

The standard equationused to calculatethe EVA is:

EVA = NOPAT - (WACC x CAPITAL INVESTED)
Where:
NOPAT: stand for net operating profit after tax but before deduct interest on debt.
WACC: stand for weighted average of cost of capital.
The EVA equation is registered as trade mark for Stern Stewart and company. In general way, we can computethe EVA by subtracting the cost of capital from net operating profit after taxes (NOPAT) for a given year(KumarandSharma ,2011;Sharma andKumar ,2010; Lefkowitz 1999; Stewart ,1991). In sum, we can say if a company's earning exceedsthe cost of capital, we can say that there is true shareholders value (Kim, 2006) .The EVA gains it is superiority over traditional approaches because it takes the cost of capital into consideration whencalculating the earning.

Many companies try to adoptthe EVA as an internal and external control measure (Sharmaand Kumar, 2010). A wave of studies have shown that EVA is widely used specially in developed countries (Sharma andKumar, 2010).In view of the above findings, we would like to examine the suitability of EVA as a financial performance measure for Saudi companies among other financial performance

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indicators. Since there does not seem to be much research done in Saudi Arabia on this topic, this study will assume significant practical importance. The performance of Saudi Listed companies will be considered for this research.

1. Literature review and hypothesis development:

In these days business are growing very speedily through all the words. The business managementcannot close their eyes for what is going around ,the initiative management has to use all tools in order to evaluate company accurately. One of important tools arefinancial performanceindicatorswhich EVA one of them (Bahri, *et al.*, 2011).

There is an argument in academic for the superiority and non superiority of using EVA as financial performance measurement. In fact, since introduced economic value added by Stern Stewart and Company in 1981, Stern Stewart's claim that EVA is a better predictor and expanding of market value of the companies (Stewart, 1991) and this affirmation was supported by Madhavi and Prasad, (2015) who point out that EVA and earnings per share are strongly associated and correlated with the firms market value more than any other financial indicators (Kumar and Sharma, 2011)and the EVA is widely used specially in developed countries(Madhavi andPrasad, 2015 ; Shilbc,2009;Lefkowitz ,1999).

Specially, in western countries,companymanagement and stock market analysis prefer to use EVA performance measurement and the EVA analysis has attracted much attention in the these countries, both as a management innovation, as well as, stock market analysis(Bhasin, 2013).

Research papers supporttheidea ofthe superiority of EVA. Studies by Shilbc, (2009) and Lefkowitz,(1999) prove that the EVA has a superiority over traditional indicators for explaining the market value of the company and it will assist the internal parties of the company's management for better performance evaluation(Bahri, *et al.*2011). Using EVA from external parties will be able them to stand on real performance of the companies by associated EVA with market value.

In order to examine the superiority of the EVA among the traditional performance measurement approach our first hypothesis H_1, aimsto examine the effect of the inclusion of EVA along with other traditional financial indicators. In other terms, it is oriented to answer the next question: willthe use of EVA increase the impact on explanation of the market value of Saudi listed companies or not?

H_1: Economic value added is one of the important indicators that explain market value of Saudi listed companies.

From the above stated hypothesis (**H_1**), the following model was developed in order to test the

importanceof EVA amongother traditional indicators (accounting earnings and cash flow)

$MVA_{it} = \alpha + \beta1EVA_{it} + \beta2CEPS_{it} + \beta3 ROE_{it} + \beta4EPS_{it} + \beta5CROE_{it} + e_{it}$Model (1)

As so many empirical and applied researches support Stern Stewart's claim regarding EVA there are so many other research rejected this claim. Maitah *et al.* (2014) the researchers rejected the assertion that EVA is best for evaluation the returned compared with traditional accounting measurement, and also Soumaya (2013); Bahri, *et al.* (2011), rejected the superiority of EVA.

Sloof and Praag (2015), they have been gone beyond that rejecting ,they were point out that using EVA might distortions performance financial measures , they found out that EVA one of the financial performance measures that distortions the financial measurement indicators , which we can say that this research found was more than rejecting EVA. This saying of distortion performance financial measure, lead to see in which extend this is right and how strength the traditional indicators will be without EVA, the following hypothesis was stated

H_2: The traditional financial indicators are important indicators that explaining market value of Saudi listed companies.

We propose a second model in order to test our second hypothesis H_2. This one will answer the next question: to which extend traditional indicators are important for the explanation of market valuewithout EVA.

$MVA_{it} = \alpha + \beta1CEPS_{it} + \beta2 ROE_{it} + \beta3EPS_{it} + \beta4CROE_{it} + e_{it}$Model (2)

Where

α = is a constant.

MVA = is the Market Value Added

EVA = is the Economic Value Added

CEPS= is the Cash Earnings per Share

ROE=is the Return on Equity

EPS= represents the Earnings per Share

CROE = is Cash Return on Equity

e = represents the error terms of regression

The third hypothesis H_3, following $H_1$and H_2examinesto which extended that model content EVA and not different from each other for explaining of market value, by comparing R^2in both H_1 and $H_2$and find $\Delta R^2$to stand on the important of for expanding and prediction the market value.

Till now, there is no Consensus that EVA has a superiority over traditional .This research will be done to distinguish these parameters from each other, and to judge if it is accurate to considered EVA as an important financial factors or not, and also to distinguish ifthe fact that we use theEVAwith other indicators can give value added which provide more explanation to the market value of Saudi listed companies.

H_3: There are differences between economic value added and traditional financial indicators for explaining market value of Saudi listed companies.

Methodology:

This study can be classified as an empirical studybecause itmainly uses secondary data, which areobtained from published database of Saudi securities exchange during the study period from 2009to 2014, as well as the reviews articles, books and cases.

2.   Sampling and data collection:

The study population consists of 129 Saudi listed companies. Our sample consists of 62 Saudi listed companies. These listed companies are operatingin different sectors of activities : Petrochemical Industries, Cement, Retail, Energy and utilities, Agriculture and food industries, Telecommunication and information technology, multi-Investment, Industrial Investment, Building and construction, Real estate development, Transport, Media and publishing and Hotel Tourism, which covered the whole sectors in listed Saudi companies. Only banking and insurance companies (financial institutions) were excluded, because of their specific nature. This study uses alsosecondary data, which were obtained from the published in database of Saudi securities exchange during the study period from 2009to 2014.

3.   Variables definition:

This study examines the relation between economic value added and traditional earnings with the market value.
The dependent value is MVA (market Value Added)
MVA =Market Value of the Company -Capital Invested
Market value of the company = (numberofweighted average outstanding shares* market price per share)
Capital invested = (number ofweighted average outstanding shares * issue price per share)
Market value added = ((market value - book value)* number of weighted average outstanding shares)
MVA can be calculated as a ratio by dividing the market value to book value in order to convert absolute value to the relative measure. Ifthe ratio of market value to book value above one, thismeans thatthereis appositive MVA and if itbelow one,so the MVA will be negative (Shil, 2009;Zafiris and Bayldon,1999).
EVA (economic value added), is the suggested financial measurement which is different from the traditional financial measure., This measure takes traditional measurement as a base and introduce some modifications to it, by taking the cost of capital into consideration. The cost of capital represents the cost of equity and debt, which can be calculated by using capital assets pricing model (CAPM). , Finally, itapply weighted average cost of capital (WACC). So that EVA=Net operating profits after tax(Zakat) less the cost of capital(Zeng, 2010).

Under the EVA the companies generated wealth for shareholders only in the case where the net operating profit after tax can positively covered cost of capital and obtained residual value of EVA. According to this issue that not all the companies show profit but in real they might not. Shil (2009) As Peter Druker affirm that," until a business returns a profit that greater than its cost of capital it operate a lose .never mind it pays taxes as if it had a genuine profit. The enterprise still returns less to the economy than it devours in resources…. until then it does not create wealth." This study apply,in the Saudi region on public listed companies, the main capital structure sources are driven from ordinary equity, Retained earnings and long-term debt which borrowed from financial institution, the preferred equity and bonds are not be allowed to be issued in Saudi listed companies because they are against the faith of Islam, which is followed by the kingdom of Saudi Arabia, even though the loan borrowed by the company should not content interest and must fulfill the rules and regulations of Islam faith.

Operating Cash flow, isone of the mostimportant indicators thatcan be used to evaluatethe performance of the company's with the market value as well asoperatingcash flow can be used to evaluate the liquidity of the company (Khaled, 2012; Lee, 1985), hence cash flow can be used to measure company performance and liquidity, these should be positivelyassociated with market value (Charitou& Vafeas,1998). In this study, two cash indicators areapplied (operating Cash per Share and Cash Return on Equity), both indicators are depend on cash basis(Tao andXiao, 2008).

Operating Cash per Shareis computed by dividing thecash flow from operations on weighted average number of outstanding shares.

Cash Return on Equity, this variable is obtained by dividing the cash flow from operations on the total amount of shareholdersequity. These variables are widely used as financial performance measures of the companies to examine traditional measurement and EVA with the market value.

Earnings is an accounting measurements which can be calculated in different ways, the most popular and widely used methods arereturns on equity and earnings per share, these two important financial performance indicators measurement can be defined as follows: Return on Equity, is calculated by dividing the total operating profit after taxes and interest on total amount of shareholder equity. This indicator shows the effectiveness of management for using the shareholder equity,

Earnings per Share, is calculated by dividing the total operating profit after taxes and interest on weighted average number of outstanding shares.

4.   Results:
4.1 Multicollinearity:

In order to test the two models stated above, we should use multipleregressions, because each model consists of more than one independent variable;

model one included five variables, and model two included four variables. Before we run the multiple regression, it is important to be sure that there are no collinearity between independent variables. If the correlation between independent variables above (0.95), the variable should be excluded from the model. Since there are no variables having correlation more than (0.95) as it shows in table (1), we accept all variables in the models (Sweiti and Attayah 2013; Kumar and Sharma, 2011).

Table 1: Correlation matrix for independent variables.

Independent variables	EVA	CEPS	EPS	ROE	CROE
EVA	1				
CEPS	0.356661	1			
EPS	0.699165	0.657739	1		
ROE	0.574685	0.367665	0.692897	1	
CROE	0.003568	0.07515	0.06326	0.007906	1
Correlation is significant at the *0.05 level					

4.2 Test of hypotheses:

The result analysis of table (2) which is related to the first hypothesis states that "Economic value added is one of the important indicators that explains market value of Saudi listed companies", shows that EVA has a reasonable impact on the market value of the companies. The t-value calculated in this model for the (EVA) is equal to 5.588, which is positively and statistically significant value at the significance level ($\alpha = 0.05$). The value of R^2 is 0.461, which means that the model has a reasonable ability to explain the market value. The value of (f) calculated was 9.567 which is considered significance. Other independent variables (CEPS, EPS, ROE and CROE) are not significant and there statistically significant value at the significance level ($\alpha = 0.05$) is above 0.05 which means that we should accept the null hypotheses of these variables (CEPS, EPS, ROE and CROE) and reject the alternative hypothesis (H_1 supported).

Table 2:

Independent variables	Beta	T	p-value
EVA	0.799	5.588	0.000*
CEPS	0.016	0.121	0.904
EPS	0.071	0.525	0.601
ROE	0.209	1.406	0.165
CROE	0.042	0.427	0.671
R Square	0.461		
f-test	9.567		

The result analysis of table (3) related to the second hypothesis which claims that," The traditional financial indicators are important indicators that explaining market value of Saudi listed companies". In this hypothesis, the study examines the model without taking EVA into consideration. The analysis result shows that (ROE) has an impact explanation to the market value of the companies. The t calculated value in this model for the (ROE) is equal to 3.044, which is positively and statistically significant value at the significance level ($\alpha = 0.05$). The value of R^2 is 0.160, which means that the model has an ability to explain the market value but this ability is so low.

The value of (f) calculated was 2.713 which can be considered as significance. Other independent variables (CEPS, EPS and CROE) are not significant and there are statistically significant at the value of the significance level ($\alpha = 0.05$), is above 0.05 which means that we accepted the null hypotheses of these variables (CEPS, EPS and CROE) and rejected the alternative hypotheses.

Table 3:

Independent variables	Beta	T	p-value
CEPS	0.111	0.704	0.485
EPS	0.078	0.476	0.636
ROE	0.389	3.044	0.004
CROE	0.066	0.539	0.592
R Square	0.160		
f-test	2.713		

From table (4), study shows the presented comparison between model (1) and model (2) . Related to the third hypothesis which supposes that, "There is a difference between economic value added and traditional financial indicators for explaining market value of Saudi listed companies".

Based on the previous two models, in first and second hypotheses which first one included EVA with traditional measure, the second model excluded EVA and remaining traditional measurement only. The study find that the model included EVA has more strength explanation than the second model

which excluded EVA. The result shows that Δr^2 is equal 0.301 which support using EVA as a one of themost important indicators for explaining the market value, rejected the null hypothesis stated (H_3) and accepted the alternative

According to both models stated, thus, we can conclude that using EVA will has a strong contribution of explaining the market value of the Saudi listed companies and therefore we accepted the first model which included EVA. The study corroborates so many researches studies such that of (Kumar and Sharma,2011) .

Table 4: Comparison of Model 1 and Model 2.

Comparison of Model 1 and Model 2						
	Model 1			Model 2		
Independent variables	Beta	t	p-value	Beta	t	p-value
EVA	0.799	5.588	0.000	-	-	-
CEPS	0.016	0.121	0.904	0.111	0.704	0.485
EPS	0.071	0.525	0.601	0.078	0.476	0.636
ROE	0.209	1.406	0.165	0.389	3.044	0.004
CROE	0.042	0.427	0.671	0.066	0.539	0.592
R square	0.461			0.160		
f-test	9.567			2.713		
Δr^2	0.301					

Conclusion:

The important aspect of this study is to introduce EVA as a financial performance indicator, which has high level of accuracy for explaining the market value of 62 listed Saudi companiesalong with other accounting traditional indicators.

Our results show that, the EVA is the best measure of performance followed by ROE. Therefore, our results corroborate that of Stern Stewart's who conclude on the superiority of the EVA over traditional measures. It is also support the research conducted by (Madhavi and Prasad, 2015; Kumar and Sharma, 2011;Shilbc, 2009; Lefkowitz ,1999).

In recent days, the shareholders and managerstry to have suitable evaluating tools, in order to have a clear picture of the financial position of the companies. Good financial performance indicators will assist them in competition with other companies, by way of giving them the right indicators which can influence the financial performance of the companies among others. As study shows EVA along with other financial indicators, especially return on equity much better explains the market value of the companies.

Moreover, the EVA in this study was applied in all types of listed companies in Saudi Arabia, except for financial institutions, which means that EVA can be adopted for all variety of businesses.

Researchers report their doubts about the importance of EVA in explaining Market Value. This study has been able to reinforce the confidence in EVA in this regard. However, it is recommended to increase the sample size, in order to have a clear conclusion regarding the superiority of EVA among other financial indicators.

This study should encourage more research to be conducted in all sectors of Saudi companies. Moreover, even though the model (1) is somewhat better in expressing the relationship between EVA and market value, its r square is low (0.46), which means that there could besome more independent variables that might be affect the market value such as, variables related to customers satisfaction, employees, products quality, R&D etc. These factors which have non-financial nature might have an effect on market value.

7. Research limitations and further studies:

The main limitation of this study is that only listed companies have been taken into account, and unlisted companies and partnerships firms have been ignored. The sample might not be representative of all listed companies. In order to use EVA as a financial performance measure, it is important to be understood by the workers and managers inall different levels which may sometimes bea hard task. Thestudy focuses alsoon taking all listed companies in one category. It might be better to classifytheminto differentsectors. Only financial performance indicators are considered in this study. Theremight be nonfinancial indicators such as customers'satisfaction, employees, products quality, R&D, which mayaffect market value.

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