

# IS ECONOMIC VALUE ADDED MORE ASSOCIATED WITH STOCK PRICE THAN ACCOUNTING EARNINGS? EVIDENCE FROM PAKISTAN

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## ABSTRACT

*This study seeks to provide an answer to the ongoing debate over the superiority of economic value added (EVA) upon traditional accounting based tools of performance measurement in explaining stock price of a firm. This Study was formulated to test the relative and incremental information contents provided by EVA and accounting measures of return like ROE,ROA, OCF,earnings per share after tax (EPSAT) and debt to equity ratio (DE). A total of 28 non financial firms listed at Karachi Stock Exchange were analyzed over the period 2009-2012. In order to empirically test the hypotheses, panel data regression was applied and our findings did not support the claim of EVA proponents of its superiority over accounting based measures of performance. Rather it was found that accounting measures outperformed EVA in explaining the behavior of stock prices of firms in Pakistani market. This study is the first of its kind in the context of Pakistan.*

**Keywords:** EVA, Accounting Earnings, ROE, ROA, OCF, Information Content, Incremental Content, Relative Content

## INTRODUCTION

The concept of (economic value added) EVA was developed by Stern Stewart & Co. which was founded back in 1980's. EVA basically is that economic profit which is added for the shareholders/owners by the management(Haddad, 2012). It is also referred to as performance measurement tool and a value creation measure (Abdeen & Haight, 2011). Ever since the development of the concept of EVA in 1991, which is a trade mark of Stern Stewart & Company, it has gained much attention of the media, practitioners, researchers, shareholders and the senior management of corporations. The need for EVA was felt due to some of the limitations that existed in the traditional accounting measures of return such as earnings per share (EPS), net income (NI), return on asset (ROA), return on equity (ROE) etc. It was found that these traditional measures provide limited insight into the actual performance of the firm/management as they are largely based on historical figures(Sharma & Kumar, 2010). More over the choice of different accounting treatments also adds to substantial distortions in the conventional measures(Shil, 2009).

Furthermore, as a result of the growing realization on the part of investors, shareholder and management about the importance of maximizing shareholders' value, the need was

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felt in the financial world for discovering a more dynamic measure/tool to judge the performance of management in running the affairs of the firm. Although the debate is still on about the superiority of EVA compared with its conventional rival measures. Still it has been widely used in today's financial and economic analysis of a firm as a reliable financial metric (Biddle et al., 1997; Bacidore et al., 1997). Hence many of the previous studies have tried to tests both incremental and relative information contents of EVA, including inter alia (Obyrne, 1997; Ramana, 2005; Kim, 2006; Palliam, 2006; Sharma & Kumar, 2012; Mostafa & Dixon, 2013; Tamamy & Awad, 2014; Shah & Haldar, 2015: ). Here incremental information content refers to a situation where it tests whether one performance measure (accounting or economic) provides more information content than the other measure. Whereas relative information content means which measure has greater or superior information content than the other one (Palliam, 2006; Mohanty, 2013).

Likewise, this study seeks to provide empirical evidence on the comparative superiority of EVA over traditional accounting returns such as Operating Cash Flow (OCF), Return on Assets (ROA), Return on Equity (ROE), Debt to Equity Ratio (DE), Earnings per Share After Tax (EPSAT) particularly in Pakistani business environment. And to the best of our knowledge, this study is the first of its kind in the case of Pakistan. This comparison is done on the basis of Stock Prices (SP). The main motivation behind this study was to provide domestic perspective on the phenomenon under study and to answer the ongoing debate about the superiority of EVA over other accounting measures of performance. Another reason is that management often tends to manipulate the financial results in order to suite their interests. This is possibly due to the very nature of how accounting measures of performance are calculated and their reliance on the accounting data, which in turn depends on the accounting policies implemented by the firm, this helps the management to overstate or understate the firm's results (Brown et al., 2011). Moreover, in countries like Pakistan where inflation rates are always on the rise and poor political, law and order and economic conditions are explained as a reason that always hampers the performance of the firms. Many firms describe these and many other reasons to their shareholders in justifying the firms' results (Ayyagari et al., 2011; Ahmed, 2013). Furthermore it is argued that due to absence of strong regulatory agency and weak form of market efficiency the shareholders' interests are rather compromised (Ribstein et al., 2002; Ararat & Ugur, 2003). This condition calls for a more dynamic measure of management performance to assist shareholders to evaluate the true management performance. This measure should be independent of the many accounting distortions that may or may not be present in the firms' financial data, which led to the concept of economic value addition.

This very study aspires to provide answers to these compelling issues at hand with special focus on the Pakistan's business environment which is the first of its kind effort particularly in the case of Pakistan to the best of our knowledge. This study is significant in both ways as it will not only provide a local perspective but will also add to the current literature on the phenomenon.

#### LITERATURE REVIEW

In one of the primary works by Stewart (1991) in his book "the quest for Value" he

proclaimed the superiority of EVA over traditional accounting based measures with respect to its association with market value of the firm or its stock return. To prove this (Stewart, 1991) took a sample of US firms and calculated both constant and changes in the correlations between EVA and MVA. Stewart (1991) concluded that by maximizing EVA and its growth would result in added premium into the firms' market value. followed by this Stern, Stewart and Chew (1994) contended that the accounting based measures such as earnings, ROE, dividends, dividend growth, earnings growth, or even cash flow are not crucial measures of corporate performance, (Stern et al. 1994) said that EVA is a kind of measure which is more closely associated with market value of company. Later on in a research study by Bacidore, Boquist, Milbourn & Thakor (1997) on the search for optimal financial performance measure they provided a comparative empirical analysis of economic value added (EVA) and refined economic value added (REVA). They argued that REVA is relative more efficient in measuring the performance of the firm as compared to EVA. REVA is defined as the NOPAT-WACC\*(adjusted book value of net capital) whereas EVA is NOPAT-WACC\*Capital employed. The primary difference between the two matrices is the REVA takes into account the market values of the firm whereas EVA takes book value. The data of 600 randomly selected firms for the study was taken from the Stern Stewart & Company's database of 100 firms for the period of 1982 to 1992. Further accounting and market data were taken from the Standard Poors' COMPUSTAT and University of Chicago's CRSP database. Regression model was developed to first test the association of these two matrices with the abnormal returns of the firms. And second lag model was developed to test the effects of past realizations of these variables on the firm's abnormal returns. (Bacidore, Boquist, Milbourn & Thakor, 1997) concluded that EVA was not able to explain the wealth/value creation of the firm for shareholders by management as efficiently as REVA was. The basic flaw in EVA was proved to be the fact that it based on the book value of economic capital as compared to the market values of economic capital by REVA. Following the approach of (Bacidore et al, 1997) in a later study conducted using UK companies data by (Bayldon, 1999) to find a more refined EVA metric that will be able to more accurately predict future firm performance, a market value EVA was proposed as opposed to the book value practice of calculating EVA. Although (Bayldon, 1999) did not conclusively prove this approach as a more reliable over its predecessor due to small sample, rather this study provided a framework to be considered for future studies. It was argued that EVA has the potential to be used a single metric of performance measure and decision making for the firms.

In another comparative study conducted to find out the superiority of EVA over traditional accounting measures of firm performance and their association with firm value and stock returns Biddle, Bowen & Wallace (1997) concluded that EVA was not proved to be outperforming the traditional measures when it comes to explaining the relative information content. In the case of incremental information content EVA was only able to marginally contribute over and above its rivals. The study used 219 firms data from 1983 to 1994 making total observations to 2271. All the data used were taken from the database of Stern Stewart & company's listing of 1000 firms on the basis of market capitalization. Variables included in the study were market adjusted returns as dependent, and independent variables were operating cash flow, earnings before extra

ordinary items, residual income and economic value added. For the propose of reducing heteroscedasticity all the independet variables were deflated by the market value of equity. (Biddle, Bowen & Wallace, 1997) used components of EVA to test the incremental value of this matix. For this they used accrual and interest expense variables. The relative information content were measured by R2 the results stated that there was no reason to believe the claim of Stern Stewart & Company that EVA is more superior in explaining relative information contents. The same was the case for incremental information content for these firms under study. Following the prvious study (Biddle, Bowen & Wallace, 1998) further investigated some other aspects of economic value added matix in order to judge its value and supriority over its rival matices. This study focused on EVA as the internal evaluation measure of a firm. It was argued by Stern Stewart & Company that those firms who adopted EVA as internal performance measurment tool and bundled their management incentives along the EVA has gained better results as compared to those firms which are using the traditonal management incentive tools. To test this proposition a sample of two groups were taken which consisted of forty firms from 1994 which had adopted residual income like incentive plans for their management. A pre and post adoption group was created and the impact was measured on four different levels. It was assumed to be tested that firms adopting residual income based incentive will tend to have higher asset dispostion and lower new investment, also overall share repurchase and dividend payout will increase in these firms, further it was tested that total assets turnover will increase in these firms and finally residual income for these adopting firm will increase as compared to those who have not adopted this measure. Ordinary least squares regression method was empolyed to test these four hypothesis'. The results indicated that firms adopting residual based incentive programs have been able to increase their dividend payout and stock repurchase, improvement in total asset turnover, increased dispotsiotion of assets and an increase in the residual income of the firm. But interestingly (Biddle, Bowen & Wallace, 1998) noted that the market had not reacted significantly towadrs these developpments of the firms. overall this study proved the claim of EVA proponents that it helps firms to achieve higher management performance as compared to those who apply traditional performance measurmeant tools. (Rogerson, 1997) studyied the problem that managers of the firm are entrusted the responsibility of making investment decisions for the firm. Since managers' wages are planned on the performance measured by accounting earnings they tend to manupalate these decisions for their own incentives. He concluded that by applying EVA or residual income based performance measures a firm can easily resolve this problem. The paper used a principal-agent model of the relationship among shareholders and managers. Another interesting debate on the effectiveness of EVA over other performance measures of the firms is that how do we actually measure this superiority of one metric over others. This fundamental questions was raised by Gravey & Milbourn (2000) and they reported that the very basic assumption that the traditional accounting measures explicitly explains all the attributes of the firms' stock price or return is flawed. After relaxing this assumption the researchers presented a formal empirical structure to test this phenomenon in order to come up with a more explanatory performance measure for the firm. Following this study (Austin, 2005) tried to study to set benchmark for formulating strategies of the

firms' operating in a monopolistic position in economy, adopting EVA as the tool for formulating policies for such firms.. Using the case of New Zealand Airways Corporation Limited (ACNZ) which has a monopolistic position, (Austin, 2005) calculated the ACNZ's earnings from time of its inception and after formulating its policies based on the results using EVA metric it proved that EVA can be effectively used to control monopoly profits for the benefits of the firm and its stakeholders. It further helps in guiding the regulators on how to prepare policies in the interest of general public and industry. EVA metric was successfully able to provide suitable benchmark for pricing and other policies of the monopoly firms. To further prove the case of accounting based measures in a study on the share prices and accounting variables Gallizo & Salvador (2006) applied hierarchical Bayesian analysis to estimate the relevance of accounting matrices in explaining the stock prices and evolution. The data for the study were taken from Worldscope database accounting information about cash flow per share and book value per share of NYSE listed companies were taken for the period of 1992 to 2000. The results validated the previous studies and showed that stock prices are determined on the basis of company life cycle theory. Large firms stocks were affected by the book value of the firm while young or smaller firms' stocks were affected by their cash flows. Palliam (2006) studied the details about information contents of economic value added and its association with the firm value and stock returns. He took into account one hundred and eight firms which were selected at random. Out of these thirty three firms were non users of EVA while seventy five firms were the users of EVA. the firm were using EVA for the last five years. Variables included in the study were stockholders' equity, revenue, market value, profits, assets, earnings per share, percentage cost reduction over time and total return to investor. Data from January 1998 to December 2002 were collected using Edgar database and Lexis-nexis database. Using ordinary least square methods (Palliam, 2006) arrived the conclusion which was similar to that of many previous studies that EVA was not proved to be superior to traditional accounting measures in explaining the relative information content. Further he went on to even say that EVA was unreliable or even questionable and invalid in its claim of being a superior matrix of performance measurement.

Another study conducted to compare inflation adjusted EVA with nominal EVA and other accounting returns it was reported by Erasmus (2008) that there was no significant proof of the superiority of EVA real over EVA nominal and other traditional accounting returns. He (Erasmus, 2008) further highlighted that over EVA was not able to outperform the other accounting returns in explaining stock returns of the firms. The study took into sample industrial shares listed on Johannesburg Securities Exchange for the period spanning 1991 to 2005. The data was gathered using McGregor database. This study employed both relative and incremental information content model to study the phenomenon. In a study conducted by Mittal, Sinha & Singh (2008) to find out the linkage between corporate social responsibility (CSR) and economic value added (EVA), they have concluded that there is very little evidence that companies who are having and reporting their code of ethics for CSR could generate more EVA than those companies who do not have code of ethics or they report it in their annual statements. The data sample for the study consisted of 50 firm taken from S&P CNX Nifty for the years



2001 to 2005. Statistical tools applied were correlation and regression to find any linkage between the variables under study. The did not prove any significant linkage conclusively about the EVA metric and CSR activities or reporting of the firms. Shil (2009) descibes in detail the technical aspects of calculating economic value added (EVA) . He explains that the concepts of profit maximization and wealth maximization have become age old and are being considered as somewhat absolate or irrelevant in the context of modern financial needs. (Shil, 2009) further explains that EVA is the most authentic and reliable among all other measures of performance of management. He discusses that the difficulty in calculating EVA arise from the fact that EVA uses accounting data to arrive at economic profit. As the quality and accuracy of these traditional accountitng data vary from firm to firm and economy to economy it becomes very lengthy process and requires qualified and experience persons to deal with it. According to (Shil, 2009) a business that looks to be profitable from accounting point of view might turn out to be unprofitable from economic point of view. For shareholders to know about the performance of management and the actual return that they are getting by investing in a partuclar firm, it is necessary to employ EVA as their standard of measure. As per (Shil, 2009) value maximization is the need of today's financial world, any firm who operates must have an economic justification of its existance. A firm must generate revenue or profit in excess of its cost of capital in order to be called a successful organization. A study conducted by Rompho (2009) to use EVA as capital budgeting tool in a university in order to allocate resources in a better way. (Rompho, 2009) concluded that EVA can be applied in a university to first allocate resources to non-profit ventures of the university in efficient way, and secondly to evaluate the and guide the university management to allocate resources to its for profit ventures in a more profitable manner. Also the study investigated the acceptance of EVA by stakeholders such as staff and students as a measure of resource allocation. (Rompho, 2009) tested this hypothesis using Thammasat University as sample. It was concluded that EVA can help the management of a university to efficiently guide the resource allocation, specially in a environment where unicersities are increasingly becoming autnomous. The stakeholder results also showd a positive acceptance of this measure. In their study on the portfolio strategies Leong, Pagani & Zaima (2009) used economic value added, price to earnings ratio and book to market ratio as three different metrices to select and evaluate a portolfio of of firms from the period of 1995 to 2004. All the data used in the study were taken from the database of Stern Stewart & Company, COMPUSTAT and center for research in security prices (CRSP). The comparisons between the three profolios were statistically tested by T test and Wilcoxon non-parametric test was applied to examine the mean difference between the three profolios. The reults showed that earnings to price portfolio in line with previous studies proved that the lowest EP and the highest EP stocks proved to be the highest generators of cumulative returns. Book to market portflio provided the highest retusn when the BM ratio was lowest means highest deviation between book and market values. And finally economic value added porfolio tend to equal or surpass the returns of EP. However (Leong, Pagani & Zaima, 2009) concluded that there was no significant difference between the portfolios based on either of the three metrices.

Florou and Chalevas (2010) in their attempt to understand the association between

accounting figures and stock returns in Greece found that accounting figures pertaining to disclosures about a firm's operating performance, its growth opportunities and ability to generate profits from sales does actually have affects on its stock returns. They suggest that investors and shareholders actually take into account these informations while valuing firm's stock. For the study they used the official stock returns data available at the datastream. A period of 2004 to 2006 was taken under study with a firm sample size 287 having a total of 861 yearly observations. (Florou & Chalevas, 2010) did proved that different traditional accounting measures are actually very significant in explaining the stock return and its association with them. Following (Florou & Chalevas, 2010) a study conducted by Kumar and Sharma (2011) tried to compare the effects of EVA and accounting earnings on the market value of the firm. This study included 97 firms taken from the Bombay Stock Exchange on the basis of their market capitalization, also the period covered by the study spans from 2000 to 2008 in total they used 873 yearly observations. In this study (Sharma and Kumar, 2011) used pooled ordinary least square regression method to test relative and incremental information content of EVA with traditional accounting measures of net operating profit after tax, operating cash flow, earnings per share return on net worth in explaining their association with the firms' market value. After empirically testing the variables they did not found evidence to support that EVA is superior performance measure than traditional accounting measures in explaining market value of the firm. The results for the relative information content showed that NOPAT and OCF clearly outperformed EVA in their superiority towards explaining market value. However the incremental information content tests showed a slightly better performance of EVA as compared to other accounting measures in explaining market value of the firm. (Sharma and Kumar, 2011) further emphasized the need to include more factors that might have singnificant impact on the market value of the firm in the future studies such as employees, community satisfaction, customers and product quality etc. In a more recent study Bahri, St-Pierre & Sakka (2011) reported in a study under taken to evaluate EVA as a useful tool to measure the performance of small and medium enterprise (SME), that EVA can be a good tool to measure SMEs' performance provided its is applied along with certain business practices. The study used a sample of 108 Canadian SME manufacturing firms data taken from PDG database. The key business practices identified by (Bahri, St-Pierre & Sakka, 2011) were sales management practices, manufacturing and equipment management practices and working capital management practices. They had concluded that while the results of some practices were visible on EVA within a year, others took more than a year to show their impact on firms performance measured by EVA.

## DATA AND VARIABLES

### *Sample Selection*

All the data for this study was gathered from secondary published sources. Major source used is State Bank of Pakistan's report on financial statements analysis of companies (non-financial) listed at Karachi stock exchange. The data for yearend stock prices was taken from Karachi Stock Market Data Portal.

Non probabilistic based convenience sampling technique was applied in the study due

to the lack of evidence or non availability of data. The firms are selected on the basis of their market capitalization. The sample consisted of the non financial firms listed at Karachi Stock Exchange; financial firms were excluded due to the nature of their accounting data.

Initially a total of 30 firms were selected on the basis of highest market capitalization in the final sample. However two firms were later on removed due to non availability of data. The data pertaining to our variables were taken for the period from 2009 to 2012. The final sample contained a total of 112 annual observations.

### Variables Definition

Table 3.2.1 Explained variable

Names	Definition	Symbols Used
Stock Price	Year end closing stock price	SP

Table 3.2.2 Explanatory variables

Names	Definition	Symbols Used
Return on Equity	Net profit before tax as percentage of average shareholder's equity	ROE
Return on Assets	Net profit before tax as percentage of average Assets	ROA
Debt Equity Ratio	Ratio of liabilities to equity	DE
Earnings Per Share After Tax	Net profit after tax divided by No. of shares outstanding	EPSAT
Operating Cash Flow	As reported in the annual statements	OCF
Economic Value Added	Net profit after tax minus (cost of capital x Total Capital)	EVA

### HYPOTHESES OF THE STUDY

**H1:** The relative information content of EVA is superior to conventional accounting measures (OCF, ROA, ROE, DE and EPSAT) in explaining stock prices

**H2:** The incremental information content of EVA is higher than conventional accounting measures (OCF, ROA, ROE, DE and EPSAT) in explaining stock prices

### MODEL SPECIFICATION

To test the relative information content of EVA and other accounting measures, we follow (Ismail, 2006) and (Kumar & Sharma, 2011):

$$SP_{it} = \beta_0 + \beta_1 EVA_{it} + \varepsilon_{it} \quad (1)$$

$$SP_{it} = \beta_0 + \beta_1 ROA_{it} + \varepsilon_{it} \quad (2)$$

$$SP_{it} = \beta_0 + \beta_1 ROE_{it} + \varepsilon_{it} \quad (3)$$

$$SP_{it} = \beta_0 + \beta_1 DE_{it} + \varepsilon_{it} \quad (4)$$

$$SP_{it} = \beta_0 + \beta_1 EPSAT_{it} + \varepsilon_{it} \quad (5)$$

$$SP_{it} = \beta_0 + \beta_1 OCF_{it} + \varepsilon_{it} \quad (6)$$



Where the subscript of it represents the firm time period.

To test the incremental information contents, following models were developed which again is in line with (Ismail, 2006) and (Kumar & Sharma, 2011).

$$SP_{it} = \beta_0 + \beta_1 EVA_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} + \beta_4 DE_{it} + \beta_5 EPSAT_{it} + \beta_6 OCF_{it} + \epsilon_{it} \quad (7)$$

$$SP_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 DE_{it} + \beta_4 EPSAT_{it} + \beta_5 OCF_{it} + \epsilon_{it} \quad (8)$$

### EMPIRICAL RESULTS

First we hereby test the relative information content of EVA. Where individual regression analysis is run on all the explanatory variables to test which one of the variables provides more information about stock price relatively. In order to normalize the data, all the variables are in natural log form. The results are reported in table 5.1 below which indicate that all the explanatory variables are significantly explaining the variations in stock prices at 0.05 level of significance, except for EVA and DE. The adjusted R2 for EVA is negative which is stated to be zero. And the adjusted R2 for DE is 2.17 percent which is again very low. A reason for this could be that as the leverage of the firm increases it becomes unable to explain the stock variation as the higher leverage is not a positive sign for the firm. As for EVA it shows that the economic value added is not considered in valuing stock price by the Pakistani market which could be due to the fact that our investors do not consider it to be an important factor for valuing the firm.

Apart from these two explanatory variables we can see that earnings per share (EPSAT) has the highest adjusted R2 followed by ROE, ROA and OCF that is 62.17, 23.56, 13.87 and 4.39 percent respectively. These results refute the claims of EVA proponents of its superiority upon traditional accounting measure for explaining the stock price in the case of Pakistan. Therefore our H1 is rejected as EVA fails to prove its superiority to provide more relative information content than accounting measure or rather any ability to explain the stock prices of the firms in Pakistan.

In order to test the hypothesis about the incremental information content of EVA and its superiority over accounting based measures, we run two regression models as explained earlier in equation (7) and (8). The results reported in table 5.2; Model 1 has all the explanatory variables included while model 2 does not include the EVA. An important outcome is that two of the accounting measure ROA and DE has negative beta coefficients in model 1; whereas OCF, ROA and DE have negative beta coefficients in model 2.

All explanatory variables are statistically significant at 0.05 level in model 1. Whereas except OCF the remaining explanatory variables are significant at 0.05 level in model 2. The decision criteria here was the adjusted R2 of the two models which explains that the overall change is measured with 2.95 percent increase. Although it is on the lower side but still it proves the explanatory power of the EVA and hence we fail to reject our H2; that EVA does have incremental information content over other accounting based measures. These results are in line with (Kumar & Sharma, 2011).

Table 5.1 Outputs' summary of model (1) to (6)

	EVA	OCF	ROA	ROE	DE	EPSAT
Coefficients	-0.0270	0.1799	0.5054	0.6654	-0.2265	0.8921
t-statistics	-0.3248	2.2479	4.2086	5.8231	-1.8598	13.4455
P-Value	0.7459	0.0266	0.0001	0.0000	0.0656	0.0000
F	0.1055	5.0530	17.7126	33.9089	3.4588	180.7802
R <sup>2</sup> (Percent)	0.10%	4.39%	13.87%	23.56%	3.05%	62.17%
Adjusted R <sup>2</sup> (Percent)	-0.81%	3.52%	13.09%	22.87%	2.17%	61.83%

Table 5.2 Outputs' summary of model (7) to (8)

Independent Variables	Model 1		Model 2	
	Coefficients	t-statistics	Coefficients	t-statistics
EVA	-0.1934	-3.5327	-	-
OCF	0.1189	2.0353	-0.0041	-0.0829
ROA	-0.6692	-4.6660	-0.7118	-4.7312
ROE	0.4790	2.9488	0.5654	3.3442
DE	-0.2626	-3.7321	-0.2744	-3.7093
EPSAT	0.9828	12.3603	0.9623	11.5272
R <sup>2</sup> (Percent)	74.21%		71.15%	
Adjusted R <sup>2</sup> (Percent)	72.74%		69.79%	
F-value	50.3616		52.2764	
$\Delta R^2$	2.95%		-	

### CONCLUSION

This study was conducted to test the claims of the proponents of EVA's superiority over accounting based measures as a better performance measurement tool. The phenomenon was studied in particular setting of Pakistani business environment and to the best of our knowledge this study is the first of its kind in the case of Pakistan. As the debate for EVA's superiority continues our objective was to add and document the empirical evidence from Pakistan to the existing literature. Although EVA has been in use now for quite some time in the developed world as a measure of performance of the management, but developing markets have yet to realize the importance and implications of the use of this metric. Knowing the controversies surrounding the EVA metric, this study empirically tested the superiority of EVA over other accounting measures of performance. The results found in the study are very much in line with the existing literature.

This study concludes that EVA does not prove to be a superior measure of performance as compared to other accounting based measures. Rather in the test of relative information content, it was found that EVA does not have any explanatory power in predicting the stock price of Pakistani firms. In fact ESPAT, ROE, ROA and OCF outperformed EVA to explain the behavior of stock prices in Pakistani market. As for the

incremental information content EVA although provided a small and marginal explanatory power but still it was so lower that it can be concluded that EVA is also not been able to explain the incremental information content of stock prices and traditional accounting measures.

#### **POLICY IMPLICATIONS AND FUTURE RESEARCH**

This study has important policy implications not only for Pakistani market but for overall business researchers and practitioners. It provides a framework for future studies especially in the developing countries like Pakistan. This study provides guidelines for the practitioners and researchers about how the stock prices are reacting relative to accounting based measures and economic value added.

It is suggested that in future research a more elaborate EVA model should be developed that is further decomposable into important constituting parts so that their individual effects can be captured. Also the model should include more explanatory variables with relatively larger sample to capture the unexplained variation in the model.

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