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Comparison of Traditional and Modern Performance Instruments on Selected Companies from Pakistan

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ABSTRACT

The objective of this study is to examine the performance of listed companies in Karachi Stock Exchange by using economic value added (EVA) and market value added (MVA). To estimate performance of seven industrial sectors in Pakistan EVA is used along with operating cash flow, net operating profit after tax, net income and return on equity. Multiple regression models are applied on cross sectional data of 35 firms from seven sectors of Pakistan for year 2012 and 2013. Results and their analysis are portraying the actual picture for EVA in Pakistan indicating that ability of EVA to explain MVA is not significant.

Keywords: Stock Exchange, Economic Value Added, Cross Sectional
JEL Classification: C21

1. INTRODUCTION

Measuring performance is very crucial for an organization because this will decide the value that is to be handed over to all stakeholders by management of a business. Primary goal of business should be to maximize shareholder's value Sheela and Karthikeyan (2012) and this objective can be achieved by maximizing stock prices. Many methods are used to measure organization performance. This study aims to use traditional as well as modern performance evaluation tool such as economic value added (EVA) to measure performance of an organization. The authors like Haddad (2012) and Sharma and Kumar (2012) have conducted research on performance measurement by using traditional and new techniques. These include EVA, return on assets (ROA), return on equity (ROE), capital adequacy ratio, return on net worth, return on capital employed, operating cash flows (OCF), and net operating profit after tax (NOPAT), net income (NI), and residual income and earnings per share. Sharma and Kumar (2012) declared EVA as a third reliable measure when paired with earnings per share. Traditional performance measures have performed well in measuring the performance of a firm in past and modern era. But sometime these measures failed to predict true results due to income statement alterations by the management of a business. Such alterations will satisfy the investors who are looking for new investment as well as waiting for best return on investment. Moreover, investment decisions will be uncertain in presence of such circumstances.

EVA is modern shape of residual income. It is a concept which is reflected by the literature of a famous economist named Alfred Marshall, Young (1997). It can remove the drawback of alteration of traditional performance measures by considering the cost of equity. Cost of equity is mainly calculated by capital asset pricing model (CAPM) and dividend growth model. Patel and Patel (2012), Haddad (2012) and ArabSalehi and Mahmoodi (2011) calculated cost of equity by using CAPM. The EVA is a technique established by Stern et al. (1995). Alfred (1998) described EVA as a difference between operating profit after tax and cost of capital. Young (1997) argued that EVA can serve as a language for the management of a business in measuring and communicating performance of a firm. Davidson (2003) argues that EVA will improve the stock performance. However, EVA is also capable to improve the standard of managerial decisions. Moreover, managers will learn about the utilization

of optimal opportunities for the betterment of business future in short-run and long-run. Ronald and Arendt (2000) studied that EVA usage will clear the concepts of business managers and ultimately solve the problem of selecting performance measure from a large list of metrics like NOPAT, return on investment, ROE and earnings per share. Irala et al. (2006) states that EVA adoption in west is very much popular and from Asian context, this is getting popularity in India. In Pakistan concept of EVA is not popular.

Market value added (MVA) is another tool to estimate investments and activities of a firm. Improvement in EVA will result in improvement of MVA. Young (1997) defined market value as an aggregate of activities and investments of a firm. Sakthivel (2010) defined MVA as a difference between market capitalization and net worth. Where, the term market capitalization is obtained by multiplying number of outstanding shares with their closing share prices and net worth is obtained by adding equity capital, reserves and surplus net of revaluation reserve less accumulated losses and miscellaneous expenditure. Moreover, Young (1997) described MVA as a difference between firm's total value and total capital. Young (1997) describes that if the net present value of a project is positive then investment in such project will cause an increase in MVA, such project is termed as "value creating project." On the other hand if the net present value of a project is negative then investment in such project will cause a decrease in MVA, such project is termed as "value destroying project."

2. LITERATURE REVIEW

This section represents the empirical work carried out on EVA as performance indicator. Tortella and Brusco (2003) investigate the reaction of the market before and after the adoption of EVA in the long-run. Irala et al. (2006) investigated the importance of stock price maximization for the shareholders and other stakeholders. They are of the view that linkage of managerial compensation with EVA can enhance the ability of managers to add value in the firm's value. Sakthivel (2010) investigated the relationship between MVA termed as "value creation" and EVA. Results indicate that low EVA groups face more value destruction as compared with moderate EVA groups.

Ismail et al. (2014) demonstrated the effect of performance instruments on the companies listed in Karachi Stock Exchange (KSE) by using modern and a set of traditional measures. They concluded that ability of EVA to predict performance is not strong as compared with traditional measures. ArabSalehi and Mahmoodi (2011) investigated the superiority of EVA and traditional performance measures like ROA, ROE and earning per share. Final conclusion of the study indicates that accounting measures are defeating the EVA superiority. Patel and Patel (2012) studied the shareholders' value of Indian private sector banking by employing EVA from year 2004-05 to 2009-10. Results show that only Kotak Mahindra Bank has positive relationship with EVA and stock price. Haddad (2012) canvassed the impression of EVA on the banking sector of Jordan including 15 banks listed in Amman Stock Exchange from year 2001 to 2009. Sharma and Kumar (2012) well-tried to propose the investors the utilization of EVA along with other orthodox measures for appraising and making any scheme for future aspects. EVA can elaborate MVA better than orthodox performance measures. Sharma and Kumar (2012) found that meeting shareholders anticipation is directly regulate share prices. EVA determined positive and substantial while addressing the issue of EVA relationship with MVA.

3. DATA SOURCES AND METHODOLOGY

3.1. Data Sources

The data of 35 listed companies from seven industrial sectors of KSE is used for results calculations. The annual data for a period of 2012-2013 was used. The source of data was annual reports available from KSE Library.

3.2. Methodology

In this study both simple regression and multiple regression models are used for analysis. Simple regression model is used to evaluate the ability of each independent variable to explain variation in MVA. Cross sectional data collected for each year are evaluated separately to estimate significant role by using multiple regression model:

$$Y_{it} = \beta_0 + \beta_i X_{it} + e_{it}$$

Where, "Y_{it}" is the MVA (stock return), "i" is the name of company, "t" is the time subscript, "β" is the intercept, "e_{it}" is the error term and "X_{it}" are the independent variables like EVA, OCFs, NOPAT, NI and ROE. Simple regression models are used to evaluate the ability of each independent variable to explain variation in MVA.

$$Y = \beta_0 + \beta_1 X + e$$

4. ANALYSIS AND INTERPRETATION OF DATA

Results for year 2012 and 2013 are represented by Tables 1-3. Relationship between EVA and MVA is insignificant having P value (=0.856) and (=0.595) for year 2012 and 2013, respectively. However, relationship for traditional instruments of ROE and OCF is significant having P value (=0.017) and (=0.064) for year 2012, respectively. Results also indicate that the relationship for ROE, OCF and NOPAT is significant having P value (=0.001), (=0.004) and (=0.046) for year 2013, respectively.

The goodness of the fit of model is supported for traditional variables data which is represented by F-statistics (=5.255 and =7.984) for P values of (=0.002) and (=0.000) for year 2012 and 2013, respectively. However, goodness of the fit of model for modern instrument is insignificant having F-statistics (=0.033 and =0.289) for P values of (=0.856) and (=0.595) for year 2012 and 2013, respectively.

Correlation results of Table 3 show that correlation between EVA and MVA is not encouraging which suggests that ability

Table 1: Coefficients

Model	2012			2013		
	B	T	Significant	B	T	Significant
Modern						
(Constant)	10324169.477	1.451	0.156	18806384.208	1.641	0.110
EVA	833543.424	0.183	0.856	−6675450.632	−0.537	0.595
Traditional						
(Constant)	−6958077.692	−0.996	0.327	−15478829.489	−1.413	0.168
NI	3.285	0.410	0.685	−17.636	−1.555	0.130
NOPAT	−15.104	−1.659	0.108	−18.281	−2.082	0.046
OCF	11.638	1.922	0.064	30.417	3.118	0.004
ROE	2646835.803	2.520	0.017	5633516.958	3.526	0.001

For t-statistics and P values of each estimated parameter are shown in Table 1. EVA: Economic value added, NOPAT: Net operating profit after tax, OCF: Operating cash flows, ROE: Return on equity, NI: Net income

Table 2: Model summary

Model	2012		2013	
	F	Significant	F	Significant
Modern	0.033	0.856	0.289	0.595
Traditional	5.255	0.002	7.984	0.000

For analysis of variance figures are shown in Table 2

Table 3: Correlation coefficient and R^2

Correlation coefficient			R^2		
Particulars	2012 MVA	2013 MVA	Particulars	2012	2013
			Overall variables	0.494	0.52
MVA	1	1	Traditional variables	0.412	0.516
EVA	0.032	−0.093	EVA	0.001	0.009
NI	0.452	0.391	NI	0.201	0.153
NOPAT	0.402	0.348	NOPAT	0.162	0.121
OCF	0.471	0.450	OCF	0.222	0.203
ROE	0.507	0.537	ROE	0.257	0.288

For correlation coefficient and R^2 of each estimated parameter are shown in Table 3. MVA: Market value added, EVA: Economic value added, NOPAT: Net operating profit after tax, OCF: Operating cash flows, ROE: Return on equity, NI: Net income

of EVA alone cannot be trusted due to better correlation results among traditional performance measures such as ROE and OCF for year 2012 and 2013. Moreover, Ability to explain variation in MVA is high when a combination of modern and traditional performance measures is used instead of using EVA alone.

5. CONCLUSION AND RECOMMENDATIONS

EVA is used in this study to estimate performance of industrial sectors in Pakistan along with traditional performance measures. Results and their analysis are portraying the actual picture for EVA in Pakistan by comparing EVA with MVA for year 2012 and 2013. Results of Pearson correlation between EVA and MVA is low as compared with traditional measures. Moreover, findings indicate that ability of EVA individually to explain MVA is insignificant. The companies operating in Pakistan are still depending on traditional performance measures. But EVA can play a vital role when combined with other variables. Results are aligned with Sharma and Kumar (2012), Salehi and Mahmoodi (2011), Irala et al. (2006) and Ismail et al. (2014).

In firm performance evaluation financial metrics are normally used, but on the other hand there are some factors called non-financial metrics are to be kept in consideration too. These may include expertise of management, technological factor, advancement of human resource management, behavioral finance and quality of products. These factors also play a vital role in effecting the shareholders' value. These variables are difficult to calculate but in further research should be taken as prime consideration with reference to Pakistan.

EVA role is to help managers not to be a substitute to efficient management. Managers' activities must be aligned with EVA by introducing incentive plan so that managers start working for them.

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