Journal of Commerce & Accounting Research
9 (1) 2020, 25-34
http://publishingindia.com/jcar/

Submitted: 06 June, 2019
Accepted: 16 October, 2019

ECONOMIC VALUE ADDED AND STOCK PRICE OF FIRMS IN INDIAN STOCK MARKET

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Abstract *Developing competent knowledge about the market sphere and study of market trends of a stock price in relation to its value added gives the investors insight knowledge of stock market. Traditional accounting-based performance measure does not strictly portray the true value of a firm; hence, Economic Value Added (EVA) is currently gaining prominence in valuing the firm. EVA is an important tool of financial performance measurements of firms. The present paper attempts to analyze relationship between EVA and stock return of six different sectors comprising 17 companies listed in the NSE. The paper also compares the relationship of stock return with other variables such as Earnings per Share (EPS), Return on Assets (ROA), Return on Invest Capital (RoIC) and Return on Net Worth (RoNW) of the selected firms. Using the data of 10 years, i.e., 2007-08 to 2016-2017 of 17 companies listed in NSE 50 Index, the study has adopted single and multiple correlations to find out the correlation between the selected variables. The study found weak correlation among the variables under study.*

Keywords: *Stock Price, Stock Market, NSE, NIFTY, EVA, EPS, ROA, RoIC, RoNW, Correlation*

INTRODUCTION

The aim of a firm is to maximize its wealth and it is represented by the value of firm. Maximizing value of firm is apparently becoming important and value of a firm is represented by share price of a firm. Different measurement tools have been evolved for measuring a firm performance and shareholders' value. Failures to use appropriate criteria for measuring corporate performance and shareholders' value may cause company's real value, and may affect the group of buyers and stock profits. At present, most financial analysts believe that Economic Value Added (EVA) is the most prominent indicator of true economic value of the firms and companies should focus on high turnover than company's cost of capital. The EVA was developed in the 1980s as one of the new financial performance tools. The EVA should be used to examine both internal as well as external for valuing company since it gives the true value other than profits and cash from operating activities. The EVA indicates how profitable company's projects are as a sign of management performance. However, certain critics have been made as the EVA has a profit-making aspect and it does not have a logical base. It is also argued that the EVA by itself is incomplete to resolve market value. A negative EVA would mean that the company is destroying value with its capital investments and the capital would be better spent elsewhere. According to Fernandez (2001), high value of EVA does not mean high value. Traditional performance measurement tools such as Return on Investment (ROI), Return on Invest Capital (RoIC), Return on Net Worth (RoNW), Return on Equity (ROE), Return on Assets (ROA) and Earnings Per Share (EPS) have been employed since it is more consistent in determining valuation firm's value. Therefore, the present paper is an attempt to analyze relationship between the EVA and stock return of selected firms. The paper also analyzes the relationship between stock price with other variables such as RoIC, RoNW, ROA and EPS.

According to India Brand Equity Foundation (IBEF) report 2017-2018, India ranks second in terms of telecommunication subscription globally with 1.7 Billion and steel production globally. Other sectors such as Media, Pharmaceutical, Services and Information Technology are the key sectors that attract investors from a pool of different options to invest in the stock market since these sectors attract more investors to earn a higher return.

LITERATURE REVIEW

Study conducted by Ahmad, Alam and Yameen (2019) on the impact of liquidity, profitability and solvency on the EVA and Market Value Added (MVA) of Hindustan Petroleum Corporation Limited for a period of 15 years, i.e., 2000-01 to 2014-15, found that except liquidity ratio, all the financial ratios have a positive impact on the EVA. However, the MVA

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is found to be insignificant with traditional performance measurement tools. They further suggested that company must focus on increasing gross profit ratio in order to increase the EVA.

Sathya and Ganapathy (2018) examined how the EVA measures shareholders' value in relation to firm's performance. They concluded that the EVA provides investors a tool of investment options and decisions against capital requirements. They further added that the EVA identifies not only results but also the cost of input of funds to get the consequences.

Amyalianthy and Rotonga (2016) examined the effect of the EVA and the EPS on stock return and found the EVA and the EPS have significant effect on stock return. The study covers a period from 2013 to 2014 and data were extracted from companies' annual reports and websites, and financial data published by Institute for Economic and Financial Research (ECFIN) from the Indonesian Capital Market Directory (ICMD). The study included 21 companies listed in LQ 45 Index from Indonesia Stock Exchange.

Exploring the relation between traditional performance measurement tools, such as ROE and EVA, and the stock price of selected companies listed in Jakarta Stock Exchange (JSE), Totowa (2015) conducted a study to investigate the relationship between selected variables by taking a sample of 100 companies listed in the JSE. He took data for a period of 2 years, i.e., 2010 to 2012. Data were extracted from McGregor BFA Database. The study found a positive relationship between ROE and EVA as performance measurement tools with share prices of the selected companies.

Using trend percentages and correlation, Aravind and Ramaya (2015) in their study found that various speculative activities influence share price of a company. By examining 30 companies listed in BSE-SENSEX for a period of 6 years, i.e., 2008-2013, the study found that the EVA does not have explanatory power on share price of selected company.

Maitah, Saleem, Malec, Boubaker and Gouda (2015) examined relationship between the EVA and stock price and analyzed the usefulness of the EVA in creating investment options to get higher return. They observed that the EVA provides clarification for the stock revenue. Their study concluded that the higher EVA does not cause the higher revenue as compared to the market.

The study of Khan, Shah and Rehman (2013) found a positive correlation between Net Income (NI) and Operating Cash Flows (OCF) except that the EVA is negatively correlated with NI. The study also found a negative correlation between the EVA and Stock return, which indicates that the EVA is not a cause to the stock return since the investor's viewpoint and dependence is focused more on the provisions of dividends to the shareholders. The study tries to exhibit the relationship between the stock return and the EVA compared to NI and OCF of the Pakistani Stock market. The study was conducted on selected 60 firms out of 634 listed companies in the KSE -100 Index for the period of 7 years from 2004 to 2010. The study concluded that the contribution of operating cash flows is higher as compared to the EVA and NI.

Analyzing and the MVA in South African Banking sector, Fouche (2012) conducted a study by taking a list of banks listed in Johannesburg Stock Exchange (JSE). Data were obtained from the McGregor database. The study covers a period of 10 years from 2001 to 2010, to determine which value based management measure correlates best with the value creation in selected sample banks. The study found that the growth in the EVA is depicted as the best indicator for value creation.

Mamun and Mansor (2012) observed that though the EVA has gained consideration in many developed countries, the developing economies are still lacking behind in using for measuring firm performance evaluation. To identify the superiority of the EVA over the conventional measures in performance evaluation tools and to compare with conventional methods, Mamun and Mansor (2012) concluded that EVA became popular and has gained important attention since the EVA gives the most valid and true picture of the company compared to other performance measures. The study evaluated the applicability of the EVA in Malaysia and claimed that the EVA is a far better performance measurement tool in shareholders' value than conventional tools. The study suggested that companies should try to implement it thereby helping the company more progressive in Malaysian business.

Sharma and Kumar (2012) conducted studies examining whether the EVA can be used for measuring performance and provide its superiority compared to traditional performance measure in India. The study employed secondary data obtained from *Prowess* and *Capitaline Plus* Database period from 2000 to 2009, whose economic profit figures are available in BT-SS Survey. They observed that while analyzing the performance of companies and making investment decisions, investors shift their attention from traditional measures to modern measures, i.e., the EVA. The study revealed that the EVA should be employed along with traditional measures for firm valuation and to make investment strategy. The study found a positive relationship between the EVA and the MVA of selected companies and, therefore, investors should try to use the EVA as a tool for analyzing speculation alternatives.

Negative results have been found by many studies including Pataky's (2012), who found that the EVA did not yield higher

returns for an investor. The study further indicated that there is no strong evidence which shows that the EVA yields better results compared to traditional performance metrics. By using top 50 firms and lowest 50 firms from S&P 500 Index for a period of 10 years from 2002 to 2011, the study concluded that the EVA is a complex performance metric with different components. Traditional performance metrics, on the other hand, are simple to extract the value of a firm.

The EVA is employed by many companies to maximize the revenue earned by a company. There were many studies which have been conducted in finance which support the EVA should be taught to find the true economic value of a firm (Mustafa, 2010). By analyzing 50 different journals and publications on the EVA from 1999 to 2013, Mustafa (2010) concluded that the EVA methods provide an analyst with a strategy to figure out the true value of the firm.

To investigate and find empirical support of the relationship between the EVA and stock price in Pakistani firms, Akbar, Khan and Ali (2010) conducted a study using samples consisting of 16 companies of fuels and energy sector traded in Karachi Stock Exchange (KSE). Data for period of 2001-2008 were used for the study. The study observed that the stock return and stock price are positively related to the EVA. However, the study fails to find statistically significant relationship between stock returns and changes in the EVA.

There are number of studies which examined the most compatible tool and techniques which will be employed to find out content of EVA in shareholders value maximization. To find out the information content of the EVA performance indicator in the light of creating shareholder's value within the banking industry, Withera (2008) examined both comparative and incremental information content focusing on the Kenyan banking industry. Quarterly data covering 5 years from 2002 to 2006 of seven banks listed in Nairobi Stock Exchange (NSE) were used for the analysis. The study found that the superiority of the EVA is not verified in terms of relative information content. The study further observed that there is very little evidence to support the EVA's superiority as an indicator of shareholder's value.

OBJECTIVES OF THE STUDY

The objectives of the study include:

- To rank the selected companies based on average (mean) performance of the EVA.
- To examine relationship between the EVA and stock return on sectoral basis.
- To examine relationship between EPS, ROA, RoIC, RoNW and stock return of the firms

HYPOTHESES

The following hypotheses have been framed to find out relationship between EVA and stock return and to compare with EPS, ROA, RoIC and RoNW.

- *Ho* = There is no significant relationship between the EVA and stock return.
- *H1* = There is a significant relationship between the EVA and stock return.
- *Ho* = There is no significant relationship between EPS, ROA, RoIC, RoNW and stock return.
- *H1* = There is a significant relationship between EPS, ROA, RoIC, RoNW and stock return.

DATA AND METHODOLOGY

The study employed secondary data. The daily closing prices of the Nifty 50 Index comprising six sectors have been used for the study. Six sectors include five companies from Information Technology, one company from media sector, four companies from metals sector, four companies from pharmaceutical sector, one company from services sector and two companies from telecom sector comprising 17 companies for a period of 10 years, i.e., from 2007-08 to 2016-17. The daily closing price of the companies was downloaded from the NSE websites. Other required data have been extracted from Bloomberg and company's annual reports. Firstly, ranking was done based on mean value of the EVA and all the selected 17 companies are ranked on the basis of mean value of the EVA. For the purpose of analysis, statistical methods of correlation have been employed. Correlation matrix is used to illustrate the relationship between Stock return, EVA, EPS, ROA, RoIC and RoNW.

MODEL AND VARIABLES

At first, daily average return of the selected stock price is calculated by using the (1)

$$Ri = \left(P_t - P_{t-1} / P_{t-1}\right) * 100 \quad \ldots\ldots\ldots\ldots\ldots (1)$$

Where, P_t = price of an assets at date t

P_{t-1} = price of an assets at date t -1

The beta of the stock return was calculated using the following model (2)

$$Ri = \alpha_i + R_m \beta i + 5_i \quad \ldots\ldots\ldots\ldots\ldots (2)$$

Where, Ri = Return of the stock;

R_m = Return of the Nifty 50; β = beta of the stock;

α = intercept

EPS, ROA, RoIC and RoNW were obtained from the company's annual reports. The EVA value has been obtained by applying (3).

The EVA is an independent variable which represents the company profits after distributing company cost of capital.

$$EVA = NOPAT - Invest\,Capital * WACC \quad \ldots\ldots\ldots (3)$$

Where, NOPAT = Net Operating Profit after Tax

NOPAT = Profit after Taxes * (1-t)

$$Invest\,Capital = Total\,Assets - Non\,Interest\,bearing\,Current\,Liabilities$$

$$WACC = Cost\,of\,debt + Cost\,of\,equity$$

And, $WACC = \frac{D}{v} * Rd \frac{E}{v} * Re\,(1 - Tc)$

Where,

D/v = % of debt, = Cost of debt, $1 - Tc$ = corporate tax rate, E/v = % of Equity, = Cost of equity

Cost of Equity: The CAPM Model was employed for finding cost of equity of a particular firm and under CAPM Model; Cost of Equity is represented by:

$$E(Ri) = Rf + \beta i * \left[E(Rm) - Rf\right]$$

Where,

$E(Ri)$ = Expected return; Rf = Risk free rate of return; βi = Beta of assets; $R(Rm)$ = Expected market return.

Cost of debt: It is the interest payment on its borrowing. It is represented as:

$$Kd = total\,cost\,of\,debt * (1 - t)$$

Where,

Kd = cost of debt, Rf = *RBI* 91 *T Bills*, t = corporate tax rate.

Earnings per Share (EPS): It is the proportion of a company's profit allocated to each outstanding share of common stock. It is represented as:

$$Earning\,per\,share = \frac{Net\,Income - Preferred\,Dividends}{Wighted\,Average\,Shares\,Outstanding}$$

Return on Assets (ROA): Return on Assets is an indicator of how profitable a company relatively to its total assets.

$$Return\,on\,Assets = \frac{Net\,Income}{Total\,Assets}$$

Return on Invest Capital (RoIC): Return on Invest Capital is a profitability measure that aims to measure percentage return that investors in company are earning from their invest capital.

$$Return\,on\,Invest\,Capital\,(RoIC) = \frac{Net\,Opertating\,Profit\,after\,Tax\,(NOPAT)}{Invest\,Capital\,(IC)}$$

Return on Net worth (RoNW): Return on Net Worth explains the efficiency of the shareholder's capital to generate profit.

$$Return\,on\,Net\,Worth = \frac{Net\,Income}{Equity\,Shareholders\,Fund}$$

ANALYSIS, RESULTS AND INTERPRETATIONS

Table 1: Mean Rating Performance of EVA, EPS, ROA, RoIC and RoNW of I.T Sector

	Stock return	EVA	EPS	ROA	RoIC	RoNW
Mean	0.03	10918.40	98.29	23.38	1.56	15.61
Standard Error	0.03	1404.81	11.60	1.74	0.20	1.43
Standard Deviation	0.20	9933.50	82.03	12.34	1.43	10.09
Kurtosis	2.89	0.95	4.05	6.24	2.31	1.27
Skewness	0.28	1.31	1.69	2.25	1.64	0.91

Source: Statistical software output

Table 1 shows descriptive statistics of selected variables of IT sector viz. stock return, EVA, EPS, ROA, RoIC and RoNW. The mean of stock return, EVA, EPS, ROA, RoIC and RoNW stand at 0.03, 10918.0, 98.29, 23.38, 1.56 and 15.61, respectively. In Table 1, it can be seen that the EVA shows the highest standard deviation with a value of 10918.40 whereas stock return shows the least standard deviation with a value of 0.20.

Table 2: Correlation Between Stock Return, EVA, EPS, ROA, RoIC and RoNW of I.T Sector

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Stock Return	1					
EVA	0.01	1				
EPS	0.13	-0.46	1			
ROA	-0.03	-0.34	0.33	1		
RoIC	-0.06	-0.09	-0.20	0.16	1	
RoNW	0.12	0.00	0.38	0.27	-0.18	1

Source: Statistical software output

Table 2 represents the correlation results between stock return, EVA, EPS, ROA, RoIC and RoNW of IT Sector. As can be seen from Table 2, the correlation results reveal that there exists very weak correlation between stock return and the EVA as the correlation coefficient is 0.01. This means that change in the EVA will not reflect a major change in stock return. There is a weak correlation between stock return and EPS as the correlation coefficient is 0.13. Similarly, there is also a weak correlation between stock return and ROA, RoIC and RoNW as the correlation coefficients are -0.03, -0.06 and 0.12, respectively.

Regarding the relationship between the EVA and the EPS, the correlation is found to be negative and the correlation coefficient is -0.46, which indicates a negative moderate correlation between the variables. Similar results are found between the EVA and ROA with negative correlation coefficient of -0.34. However, the study found a weak correlation between the EVA and RoIC with coefficient of -0.09. The correlation between the EVA and RoNW is 0.00, which indicates that there is no association between the EVA and RoNW. As regards the relationship between EPS and ROA, the study found a moderate correlation with coefficient of 0.33. The results also found moderate correlation between EPS and RoIC (-0.20) and moderate correlation between EPS and RoNW (0.38). The results also found moderate correlations between ROA and RoIC (0.16) and between ROA and RoNW (0.27). Therefore, any change in EPS, ROA, RoIC and RoNW will not reflect a similar change in the EVA.

Table 3: Mean Rating Performance of EVA, EPS, ROA, RoIC and RoNW of Media Company

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Mean	0.85	2462.80	7.02	0.15	1.46	6.83
Standard Error	0.35	290.50	0.48	0.01	0.31	0.81
Standard Deviation	1.10	918.64	1.51	0.03	0.99	2.56
Kurtosis	-1.54	-0.66	3.85	-0.51	1.62	0.06
Skewness	0.60	-0.94	1.57	0.41	1.31	0.80

Source: Statistical software output

Table 3 shows descriptive statistics of selected variables of media companies, viz. stock return, EVA, EPS, ROA, RoIC and RoNW. The mean values of stock return, EVA, EPS, ROA, RoIC and RoNW stand at 0.85, 2462.80, 7.02, 0.15, 1.46 and 6.83, respectively. In Table 3, it can be seen that the EVA shows the highest standard deviation with a value of 918.64, whereas ROA shows the least standard deviation with a value of 0.03.

Table 4: Karl Pearson's Correlation Between Stock Return, EVA, EPS, ROA, RoIC and RoNW of Media Company

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Stock Return	1					
EVA	0.55	1				
EPS	0.65	0.27	1			
ROA	-0.34	0.48	-0.24	1		
RoIC	-0.44	-0.33	-0.21	0.22	1	
RoNW	0.07	0.20	0.31	0.09	0.52	1

Source: Statistical software output

Table 4 represents the correlation results between stock return, EVA, EPS, ROA, RoIC and RoNW of media companies. As can be seen from Table 4, the correlation results reveal that there exists moderate correlation between stock return and the EVA and the correlation coefficient is 0.55. This means that change in the EVA will reflect more than one half change in stock return. There is a moderate correlation between stock return and EPS and the correlation coefficient is found to be 0.65. The study also found moderate correlation between stock return and ROA (-0.34) and moderate correlation between stock return and RoIC (-0.44). However, there is a weak correlation between stock return and RoNW with coefficient of 0.07. The study also found a moderate correlation between stock return with ROA (-0.34) and stock return with RoIC (-0.44).

Regarding the relationship between the EVA and EPS, the result shows a correlation coefficient of 0.27, which indicates a moderate correlation between the variables. Similar results are found between the correlation between the EVA and ROA (0.48). The study also found a moderate correlation between the EVA and RoNW with coefficient of 0.20. There is a negative moderate correlation between EVA and RoIC with coefficient of -0.33. As regards the relationship between EPS and ROA, the study found moderate correlation and coefficient is -0.24. The study also found a moderate correlation between EPS and RoIC with coefficient of -0.24 and the correlation coefficient is again found to be moderate between EPS and RoNW (0.31). The study further found weak correlations between ROA and RoNW (0.09). Therefore, any change in EPS, ROA, RoIC and RoNW will not reflect a similar change in the EVA.

Table 5: Mean Rating Performance of EVA, EPS, ROA, RoIC and RoNW of Metal Sector

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Mean	0.01	-346.62	26.73	15.04	3.63	6.84
Standard Error	0.03	1277.58	4.09	4.47	1.11	1.31
Standard Deviation	0.16	6760.29	21.62	23.66	5.87	6.93
Kurtosis	2.35	0.08	-0.06	2.65	1.64	6.99
Skewness	1.29	1.11	0.98	2.01	1.73	2.63

Source: Statistical software output

Table 5 shows descriptive statistics of selected variables of metal companies, viz. stock return, EVA, EPS, ROA, RoIC and RoNW. The mean values of stock return, EVA, EPS, ROA, RoIC and RoNW stand at 00.01, -346.62, 26.73, 15.04, 3.63 and 6.84, respectively. In Table 5, it can be seen that the EVA shows highest standard deviation with a value of 6760.29, whereas stock return shows least standard deviation with a value of 0.16.

Table 6: Karl Pearson's Correlation Between Stock Return, EVA, EPS, ROA, RoIC and RoNW of Metal Company

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Stock Return	1					
EVA	-0.10	1				
EPS	-0.16	0.02	1			
ROA	-0.01	0.91	-0.01	1		
RoIC	0.04	0.60	-0.04	0.44	1	
RoNW	0.21	-0.28	0.02	-0.28	-0.31	1

Source: Statistical software output

Table 6 represents the correlation results between stock return, EVA, EPS, ROA, RoIC and RoNW of metal companies. As can be seen from Table 6, the correlation results reveal that there exists negative correlation between stock return and the EVA as the correlation coefficient is -0.10. This means that change in the EVA will not reflect a major change in stock return. There is also a negative weak correlation between stock return and EPS as the correlation coefficient is -0.16. Similarly, there is a weak correlation between stock return and ROA, RoIC, RoNW as the correlation coefficients are -0.01, -0.04 and 0.21, respectively.

Regarding the relationship between the EVA and EPS, the results show very weak correlation and the correlation coefficient is only 0.02. Similar results are found between the EVA and RoNW with correlation coefficient of -0.28. However, the result shows a positive correlation between the EVA and ROA and RoIC with correlation coefficients of 0.91 and 0.60. As regards to the relationship between EPS and ROA, EPS and RoIC and EPS and RoNW, the correlation coefficients are found to be only -0.01, -0.04 and 0.02 which indicate a weak correlation. The results found moderate correlations between ROA with RoIC and RoNW. Therefore, any change in EPS, ROA, RoIC and RoNW will not reflect a similar change in the EVA.

Table 7: Mean Rating Performance of EVA, EPS, ROA, RoIC and RoNW of Pharmaceutical Sector

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Mean	0.07	2694.25	34.56	12.28	2.10	11.09
Standard Error	0.02	995.49	4.45	0.82	0.43	0.99
Standard Deviation	0.14	6296.02	28.14	5.20	2.70	6.24
Kurtosis	-0.22	12.59	0.42	0.22	3.04	0.55
Skewness	0.11	-2.27	1.02	0.13	1.90	0.96

Source: Statistical software output

Table 7 shows descriptive statistics of selected variables of pharmaceutical companies, viz. stock return, EVA, EPS, ROA, RoIC and RoNW. The mean values of stock return, EVA, EPS, ROA, RoIC and RoNW stand at 0.07, 2964.25, 34.56, 12.28, 2.10 and 11.09, respectively. In Table 7, it can be seen that EVA shows the highest standard deviation with a value of 6760.29 whereas stock return shows the least standard deviation with a value of 0.14.

Table 8: Karl Pearson's Correlation Between Stock Return, EVA, EPS, ROA, RoIC and RoNW of Pharmaceutical Vompany

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Stock Return	1					
EVA	0.12	1				
EPS	0.15	0.24	1			
ROA	0.05	0.64	0.14	1		
RoIC	0.09	0.09	-0.06	0.18	1	
RoNW	0.04	0.50	0.64	0.23	0.08	1

Source: Statistical software output

Table 8 represents the correlation results between stock return, EVA, EPS, ROA, RoIC and RoNW of pharmaceutical companies. As can be seen from Table 8, the correlation results reveal that there exists a weak correlation between stock return and the EVA as the correlation coefficient is 0.12. This means that change in the EVA will not reflect a major change in stock return. There is also a weak correlation

between stock return and EPS as the correlation coefficient is 0.15. Similarly, there is also a very weak correlation between stock return and ROA, RoIC, RoNW as the correlation coefficients are 0.05, 0.09 and 0.04, respectively.

Regarding the relationship between the EVA and EPS, the results show moderate correlation and the correlation coefficient is 0.24. Similar results are found between the EVA and ROA, EVA and RoIC, EVA and RoNW with correlation coefficients of 0.64, 0.09 and 0.50, respectively. As regards to the relationship between EPS and ROA, EPS and RoIC and EPS and RoNW, the correlation coefficients are again found to be only 0.14, -0.06 and 0.64, which indicate a moderate correlation. The results found weak correlations between ROA with RoIC and RoNW. Therefore, any change in EPS, ROA, RoIC and RoNW will not reflect a major change in the EVA.

Table 9: Mean Performance of EVA, EPS, ROA, RoIC and RoNW of Services Sector

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Mean	-0.01	-721.97	8.98	8.80	0.81	3.79
Standard Error	0.08	2908.17	1.25	0.66	0.14	0.77
Standard Deviation	0.25	9196.43	3.96	2.10	0.44	2.42
Kurtosis	-0.27	4.40	-1.20	2.91	-1.41	-1.15
Skewness	-0.33	1.52	0.20	-1.12	0.07	0.27

Source: Statistical software output

Table 9 shows descriptive statistics of selected variables of services companies, viz. stock return, EVA, EPS, ROA, RoIC and RoNW. The mean values of stock return, EVA, EPS, ROA, RoIC and RoNW stand at -0.01, -721.97, 8.98, 8.80, 0.81 and 3.79, respectively. In Table 9, it can be seen that the EVA shows the highest standard deviation with a value of 9196.43 whereas stock return shows the least standard deviation with a value of 0.25.

Table 10: Correlation Between Stock Return, EVA, EPS, ROA, RoIC and RoNW of Services Companies

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Stock Return	1					
EVA	-0.22	1				
EPS	0.17	-0.21	1			
ROA	0.24	0.53	0.00	1		
RoIC	0.02	0.34	-0.30	0.73	1	
RoNW	0.44	0.14	0.77	0.32	-0.21	1

Source: Statistical software output

Table 10 represents the correlation results between stock return, EVA, EPS, ROA, RoIC and RoNW of services companies. As can be seen from Table 10, the correlation results reveal that there exists a negative and weak correlation between stock return and the EVA as the correlation coefficient is -0.22. This means that change in the EVA will not reflect a major change in stock return. There is a weak correlation between stock return and EPS as the correlation coefficient is 0.17. Similarly, there is also a weak correlation between stock return and ROA, RoIC as the correlation coefficients are 0.24, 0.02, respectively, except RoNW, which has a moderate correlation with stock return of 0.44.

Regarding the relationship between EVA and EPS, the results show negative correlation and the correlation coefficient is -0.21. The results found moderate correlation between the EVA and ROA, EVA and RoIC, EVA and RoNW with correlation coefficients of 0.53, 0.34 and 0.14. As regards the relationship between EPS and ROA, EPS and RoIC, the correlation coefficients are found to be only 0.00 and -0.30, which indicate a weak correlation. However, the results found correlation between EPS and RoNW and the correlation coefficient is 0.77. The results found no correlations between ROA with RoIC and RoNW. Therefore, any change in EPS, ROA, RoIC and RoNW will not reflect a similar change in the EVA.

Table 11: Mean Rating Performance of EVA, EPS, ROA, RoIC and RoNW of Telecom Companies

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Mean	0.02	-15677.69	14.62	6.82	3.14	2.48
Standard Error	0.03	7951.25	2.64	0.99	1.16	0.60
Standard Deviation	0.11	26371.32	8.75	3.28	3.83	2.00
Kurtosis	2.40	5.31	0.71	-0.20	5.79	0.06
Skewness	1.28	-2.09	0.84	0.65	2.29	1.00

Source: Statistical software output

Table 11 shows descriptive statistics of selected variables of telecom companies, viz. stock return, EVA, EPS, ROA, RoIC and RoNW. The mean of stock return, EVA, EPS, ROA, RoIC and RoNW stand at 0.02, -15677.69, 14.62, 6.82, 3.14 and 2.48, respectively. In Table 11, it can be seen that the EVA shows the highest standard deviation with a value of 26371.32 whereas stock return shows the least standard deviation with a value of 0.11.

Table 12: Karl Pearson's Correlation Between Stock Return, EVA, EPS, ROA, RoIC, RoNW of Telecom Companies

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Stock Return	1					
EVA	0.31	1				
EPS	0.63	-0.19	1			
ROA	0.49	0.45	0.36	1		
RoIC	0.03	-0.23	0.06	-0.09	1	
RoNW	0.52	-0.30	0.96	0.12	0.20	1

Source: Statistical software output

Table 12 represents the correlation results between stock return, EVA, EPS, ROA, RoIC and RoNW of telecom companies. As can be seen from Table 12, the correlation results reveal that there exists a weak correlation between stock return and the EVA as the correlation coefficient is 0.31. This means that change in the EVA will not reflect a major change in stock return. There is a moderate correlation between stock return and EPS, ROA and RoNW as the correlation coefficients are 0.63, 0.49 and 0.52, respectively. However, there is a weak correlation between stock return and RoIC as the correlation coefficient is 0.03.

Regarding the relationship between the EVA and EPS, the results show a negative correlation and the correlation coefficient is -0.19. The results also found a negative correlation between the EVA and RoIC and EVA with RoNW with a correlation coefficient of -0.23 and -0.30, respectively. However, moderate correlation between the EVA and ROA and the coefficient is 0.45. As regards to the relationship between EPS and ROA, EPS and RoIC and EPS and RoNW, the correlation coefficients are found to be 0.36, 0.06 and 0.96, respectively, which indicate a moderate correlation. The results found no correlations between ROA with RoIC and RoNW. Therefore, any change in EPS, ROA, RoIC and RoNW will not reflect a similar change in the EVA in case of telecom companies also.

Table 13: Mean Ranking Performance of EVA of the Selected Companies

Company	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Mean	Rank	S.D.
HCL	513.19	417.43	584.60	715.41	2417.40	2667.02	4961.21	5199.02	3498.67	5640.80	2661.48	8	2084.8
Infosys	8146.30	4526.50	5645.00	6254.33	5301.81	5723.00	5994.16	7203.68	9916.02	7337.15	6604.80	5	1579.3
TCS	4652.51	4546.33	6400.06	7955.48	7947.72	10545.09	14553.92	14698.42	17828.91	18739.05	10786.75	2	5315.3
Tech Mahindra	3136.71	8281.28	4064.11	3625.86	302.85	1461.32	15560.62	9370.83	15982.55	11687.78	7347.39	4	5700.5
Wipro	20324.6	16120.2	30619.9	27716.8	15686.21	23579.2	36761.43	38428.7	32683.51	29995.21	27191.57	1	8048.9
Zeel	973	943.03	3016.09	3230.32	1763.66	2818.07	2429.08	3168.04	2887.53	3399.17	2462.80	9	918.64
Coal India	4589.36	4931.25	6231	7606.93	4684.82	5837.12	13014.61	11519.3	14803.32	12953.41	8617.11	3	4007.6
Hindalco	-654.89	1087.12	-1148.1	-1291.7	-2880.16	1769.04	-5464.07	-6168.9	-6704.55	-6003.65	-2745.98	14	3153.9
Tata Steel	-315.28	-455.69	-465.12	-476.52	-2320.83	-4544.18	-4084.92	-4508.3	-8965.93	-7093.83	-3323.06	16	3056.5
Vedanta	-2648.1	-2451.12	-2451.1	-841.76	-2407.71	-1970.59	-4835.37	-4423.2	-4241.47	-2666.31	-2893.67	15	1235.1
Cipla	521.98	513.27	514.51	545.96	565.67	740.66	502.72	106.58	383.85	-134.16	426.10	12	254.09
DrReddy	487.61	801.88	3193.96	2823.22	702.08	2860.03	7434.94	3278.52	-712.99	332.85	2120.21	10	2343.3
Lupin	2620.81	2315.81	2566.65	2839.67	2218.88	6170.86	10385.12	13692.15	4041.44	3675.82	5052.72	6	3940.6
Sunpharma	6646.88	8434.75	4294.16	8285.19	9559.49	-2345.12	16511.11	478.61	6848.61	-26934.1	3177.96	7	11754
Adaniports	-2801.6	-13234.2	-2932.6	21725.1	-10123	271.28	273.06	-36.11	62.31	-423.99	-721.97	13	9196.4
Infratel	-2651.3	-3521.58	-3897.3	-4600	-7958.12	-20431.98	-34102.03	9509.43	-10169.06	-85705.12	-16352.70	17	27007
Bhartiairtel	4589.36	8591.25	1124.25	8796.36	7654.25	-10878.12	-12344.65	-6161.51	2654.18	7862.30	1188.77	11	8134.4

Source: Authors calculations

Table 13 shows the mean ranking of the EVA of all the selected 17 companies. As can be seen from Table 13, Wipro ranks 1st with a mean of 27191.57 followed by TCS with a mean of 10786.75. Coal India and Tech Mahindra come on 3rd place and 4th place, respectively, with a mean value of 8617.11 and 7347.39, respectively. Tata Steel and Infratel rank 16th and 17th with a mean value of -3323.06 and -16352.70, respectively. Table 13 also shows the standard deviation of selected companies. As can be seen from Table 13, Cipla has least variations from the average mean or the expected value and Adaniports has the most variations from the average mean.

Table 14: Mean Rating Performance of EVA, EPS, ROA, RoIC and RoNW of all Companies

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Mean	0.09	3281.46	49.44	16.07	2.15	10.40
Standard Error	0.03	1015.87	5.06	1.14	0.27	0.70
Standard Deviation	0.38	12400.30	61.76	13.90	3.27	8.60
Kurtosis	23.82	18.33	10.48	7.53	10.50	2.59
Skewness	4.37	-2.23	2.75	2.48	3.10	1.47

Source: Statistical software output

Table 14 shows descriptive statistics of all the selected variables, viz. stock return, EVA, EPS, ROA, RoIC and RoNW. The mean of stock return, EVA, EPS, ROA, RoIC and RoNW stand at 0.09, 3281.46, 49.44, 16.07, 2.15 and 10.40, respectively. In Table 14, it can be seen that the EVA shows the highest standard deviation with a value of 12400.30 whereas stock return shows the least standard deviation with a value of 0.38.

Table 15: Karl Pearson's Correlation Between Stock Return, EVA, EPS, ROA, RoIC, RoNW of all the selected Companies

	Stock Return	EVA	EPS	ROA	RoIC	RoNW
Stock Return	1					
EVA	0.01	1				
EPS	-0.06	0.12	1			
ROA	-0.03	0.33	0.35	1		
RoIC	-0.05	-0.02	-0.11	0.24	1	
RoNW	0.00	0.29	0.54	0.22	-0.16	1

Source: Statistical software output

Table 15 represents the correlation results between stock return, EVA, EPS, ROA, RoIC and RoNW of all the selected companies. As can be seen from Table 15, the correlation results reveal that there exists a very weak correlation between stock return and the EVA as the correlation coefficient is 0.01. This means that change in the EVA will not reflect a major change in stock return. There is a weak correlation between stock return and EPS as the correlation coefficient is -0.06. The study also found weak correlation between stock return with ROA (-0.05). The correlation between stock return with RoNW is found to be 0.00, which indicates no relationship between stock return and RoNW.

Regarding the relationship between the EVA and EPS, the results show a weak correlation as the correlation coefficient is 0.12. The results also found a moderate correlation between the EVA and ROA, EVA and RoNW with correlation coefficients of 0.33 and 0.29, respectively. As regards to the relationship between EPS and ROA, and EPS and RoNW, the correlation coefficients are found to be 0.35 and 0.54, respectively, which indicate a moderate correlation. The results also found moderate correlations between ROA with RoIC and RoNW. Therefore, it can be concluded that any change in EPS, ROA, RoIC and RoNW will not reflect a similar change in the EVA.

CONCLUSION

The price of a stock in the stock market is temporary and stock price is determined by number of factors. The study attempts to examine the association of stock returns with the EVA and traditional measures of performance such as EPS, ROA, RoIC and RoNW. The paper has found a very weak correlation among the variables under study. However, the relationship between stock return and ROA is found to be higher compared to the relationship between stock return and EVA, EPS, RoIC and EPS. Therefore, EVA, EPS, ROA, RoIC and RoNW do not have an impact on stock return of a company. This study is made only for a limited time period, selecting a few companies only and hence further research can be done thereby covering a larger period and more companies to reveal a better conclusion.

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