

IMPACT OF FINANCIAL PERFORMANCE INDICATORS ON STOCK RETURNS: EVIDENCE FROM INDIA

Parab Narayan

Goa University

Y. V. Reddy*

Goa University

ABSTRACT

The purpose of this paper is to examine the impact of traditional (ROA, ROE, ROIC) and modern performance measures (EVA) on stock returns and investigate if there exists any relationship between the said variables in this dynamic world. The data consists of 408 companies listed in the Nifty 500 Index for the period 2002 to 2017 and further sorted to 18 sectors in India. The data relating to EVA, ROA, ROE, ROIC was obtained from Bloomberg Terminal and stock prices for the companies were extracted from CMIE Prowess database. The study implemented Panel Data Analysis (REM and FEM Model) and Correlation Analysis to get the results. Also Summary Statistics and Panel Unit Root Tests were performed to understand the nature of the data. The results indicated a low negative relationship of EVA, ROA, ROE and ROIC with Stock Returns, with the evidence of significant relationship only in case of ROE. REM suggested that the impact of modern performance measures have been more on Stock Returns than traditional measures.

Keywords: EVA; ROA; ROE; ROIC; Panel Data Analysis; REM; FEM

1. INTRODUCTION

The world is dynamic and so also its constituents. The information dissemination in today's world have become immense faster and accurate with the technological advancement. Investors look out for various aspects to support their investment decision. Traditionally, the net profits, sales or revenue from operations, debt structure emerged as important indicators to analyze the performance of companies fundamentally. Over the time, the investors considered the performance measures like Return on Equity, Return on Asset, Return on Invested Capital and so on to make the investment decisions accordingly. With the emergence Economic Value Added as a modern performance measurement technique coined by Stern Stewart and Co. in 1990's, it was interesting to see which performance measures explain variations in stock returns efficiently. Many researchers contributed to evaluate the efficiency of traditional and modern performance measures in predicting stock market returns. The traditional measures concerned more with the earnings and profitability aspect of the company. Whereas modern measures like Economic Value Added gave importance to shareholders value creation along with profits of the company. When Economic Value Added was invented, few companies took its cognizance. Now with the growth of significant

* Corresponding Author: Registrar, Goa University & Professor, Department of Commerce (on lien), Goa University, Goa 403206, India. Tel: +919420686816 E-mail: yvreddy@unigoa.ac.in

research in the area, investors and companies are realizing the importance of reporting Economic Value Added in their Financial Statements. Although it still remains a debatable question whether Economic Value Added is a better financial measure than traditional ones or not? As such the issue will be investigated in the current study. The present study aims to examine the impact of traditional (Return on Asset, Return on Equity, Return on Invested Capital) and modern performance measures (Economic Value Added) on stock returns and investigate if there exists any relationship between the said variables. Such relationship need to be examined to assist the investors to understand which performance indicators have significant impact on stock returns in this dynamic world. The rest of the paper is organized as follows. Section 2 provides the insights about the theoretical background of Return on Asset, Return on Equity, Return on Invested Capital and Economic Value Added. Section 3 reviews the existing literature which focuses on the studies pertaining to traditional and modern performance measures and their association with stock returns. Section 4 explains data and methodology. Section 5 provides results and discussion and paper finishes with Section 6 which involves the conclusion.

2. THEORETICAL CONSIDERATIONS

2.1. Return on Assets (ROA)

One of the traditional performance indicators determining the company's profitability position to its total assets is Return on Assets (ROA). The ROA signifies the efficiency of management in generating revenues using its assets. ROA is computed by dividing the company's revenues by its total assets. ROA can be expressed as follows.

$$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$$

2.2. Return on Equity (ROE)

The company's profitability position to its shareholders equity is referred to as Return on Equity. In other words, it measures how much the company has generated profits with the money invested by shareholders. ROE can be expressed as follows.

$$ROE = \frac{\text{Net Income}}{\text{Shareholders Equity}}$$

2.3. Return on Invested Capital (ROIC)

Return on Invested Capital (ROIC) gives the understanding about how well a company is generating returns using its money. ROIC is used to analyze the efficiency of the company in earning revenues by allocation of its capital. ROIC can be expressed as follows.

$$ROIC = \frac{\text{Net Operating Profit After Taxes (NOPAT)}}{\text{Invested Capital}}$$

2.4. *Economic Value Added (EVA)*

Economic Value Added (EVA) is a technique developed by Stern Stewart and Co. as a modern performance measure of the company's financial position. EVA in simple terms means how much a company earns over and above its cost of capital. EVA focuses on shareholders wealth creation rather than exclusive profits of the company and hence it is gaining popularity. EVA can be expressed as follows.

$$EVA = \text{Net Operating Profit After Taxes} - (\text{Invested Capital} * \text{Weighted Average Cost of Capital})$$

3. LITERATURE REVIEW

Nakhaei and Hamid (2013) examined whether Economic Value Added have better explanatory power than accounting variables such as operating profit and net profit in context of Tehran Stock Exchange considering a data related to 87 listed companies for the period 2004-2008. The researchers applied correlation and regression analysis to obtain the results. The researchers noticed more relationship of operating profit and net profit with share market value than Economic Value Added. In a similar study Parvaei and Farhadi (2013) evaluated whether Economic Value Added is a better performance measure than Net Income, Residual Income and Cash Flows. Although researchers found low predictive ability of Economic Value Added, they mentioned that Economic Value Added is a better performance measure than other measures. In another study relating to Tehran Stock Exchange, Samadiyan, et. al., (2013) considered a sample of 120 listed companies for a period 2003 to 2010 and evaluated the effect of Economic Value Added, Operating Cash Flows and Accounting Profit on stock market returns. The researchers used panel data regression analysis and found that accounting profits have more explanatory power than Economic Value Added and Operating Cash Flows.

Saji (2014) stated the experiential indication in the association among Economic Value Added and Stock Return in the Indian Economy. On the basis of panel data, outstanding companies which have been recognized by NSE were selected. The tenure of the study was from 2008 to 2013. The particular research evaluated the set of assumptions that, the effect of EVA exist on Stock Return. The outcomes witnessed that EVA, with cost of Capital allots a relevant facts including experienced for forecasting yield of stock. The identification of this study gives support to EVA in financial market like India. Ghafoor, Siddique and Sarwar (2014) evaluated the impact of Economic Value Added on stock market returns considering a sample of companies listed on Karachi Stock Exchange. The researchers considered a period from 2006 to 2010 and utilized Panel Data Regression Model. The researchers also attempted to perform the analysis for different industrial groups. The researchers found the evidence of stock returns to get affected by Economic Value Added. The researchers considered only few sectors and thereby ignore other crucial sectors of the economy. Ray (2014) investigated the relationship between stock market returns and economic value added by considering a data from 2006 to 2012 of 36 listed companies in India. Along with Economic Value Added, the researcher also analyzed the performance of Return on Asset, Return on Equity, Return on Sales, CAPM Return and excess market premium. The results revealed a minor evidence of Economic Value Added contributing to the stock market performance

and value creation of shareholders. The researchers mentioned the share prices to be more sensitive to growth expectations than EVA information.

Baybordi, Nejad and Kargar (2015) evaluated the relationship between stock returns and Economic Value Added taking a sample of 70 companies from Tehran Stock Exchange for the period 2004 to 2010. The researchers used systematic elimination method to select such companies. The results from the study indicated a significant positive relationship between stock returns and Economic Value Added. In a similar study, Shastri (2015) analyzed the causal relationship between stock returns and Economic Value Added taking a sample of 70 companies listed on National Stock Exchange from 2008 to 2013. The results of study suggested that along with Cost of Capital, Economic Value Added provides information content which generates explanatory power in forecasting stock returns in India. The researchers also mentioned about the presence of time lag while analyzing the impact of Economic Value Added on stock market returns. Poornima, Narayan and Reddy (2015) highlighted that the origin of EVA is a modern aspect of development deliberating its significance in the business area; it enhances crucially to follow its function for the generation of shareholder's yield and fulfillment for companies. The researchers evaluated the correlation among EVA and traditional measures such as Earning Per Share, Return on Invested Capital and Return on Net Worth.

Threemanna and Gunaratne (2016) explored the power of Economic Value Added compared to traditional performance measures such as Return on Asset, Return on Equity and Earnings Per Share in predicting the stock returns. The researchers considered a time span of 2007 to 2012 taking the samples from Tobacco and Food Beverage sector from Colombo Stock Exchange. Statistical techniques such as Regression and Correlation Analysis were utilized by the researchers to reveal that Return on Equity and Earning Per Share have high predictive ability of stock market returns as compared to Economic Value Added. Also the study noticed Return on Asset to be the least performing measure in predicting the variations of stock market returns. Sauro and Tafirei (2016) examined the association between Economic Value Added and Stock Market Returns considering a sample of commercial banks from Johannesburg Stock Exchange. Also, such relationship was investigated using measures like Dividend Per Share and Return on Equity. The researchers used Ordinary Least Square method to analyze the data. The study evidenced significant impact of Economic Value Added on Stock Market Returns. Amyulianthy and Ritonga (2016) conducted a study to evaluate the effect of Earning Per Share and Economic Value Added on Stock Market Returns. The researchers analyzed a sample of 21 companies along with LQ 45 Stock Index of Indonesia Stock Exchange for a period 2013 to 2014. The study used Multiple Regressed and Panel Data Analysis to prove the results. The researchers found positive significant impact of Economic Value Added and Earnings Per Share on Stock Market Returns. Almomani (2016) investigated the ability of modern and traditional performance measures in explaining stock market returns for companies listed on Amman Stock Exchange. The traditional performance measures such as Return on Sales, Return on Assets, Operating Cash Flows and modern performance measures such as Economic Value Added, Market Value Added and Tobin's Q where considered for the study. The results revealed a significant relationship between traditional and modern performance measures with earnings management. Further, a significant inverse relationship was noticed between Return on Asset and earnings management. Similar inverse relationship was also noticed in case of Economic Value Added, Tobin's Q and earnings management. The study revealed that Economic Value Added is better indicator followed by Tobin's Q in explaining earnings management.

Reddy and Narayan (2017) opined that the foremost significance of stock return and EVA has fascinated several researchers since from the assorted former years. The existing learning is a critical effort to examine the association between EVA and Stock Return. For the purpose of study tenure of five years i.e., from 2012 to 2016 and 50 companies listed on National Stock Exchange were considered. Besides EVA, other measures were also interpreted such as Return on Asset, Return on Equity, Dividend Per Share and Earning Per Share. The researchers made use of statistical tools such as Correlation Matrix, Regression Analysis and Granger Causality Test to ascertain the outcomes. The repercussion shows the positive association of EVA with Stock Return and traditional tool of performance techniques.

It is evident from the literature that, although considerable research has been performed examining the relationship of traditional and modern performance measure, the studies were limited to few companies and very limited sectors. The present study will breach this gap and perform the analysis across 18 sectors in India consisting 408 companies for the period 2002 to 2017. The present study is unique as it considers a large pool of 408 companies and diversified 18 sectors in India which were not examined by the previous researchers.

4. DATA AND METHODOLOGY

The purpose of this paper is to examine the impact of traditional (Return on Asset, Return on Equity, Return on Invested Capital) and modern performance measures (Economic Value Added) on stock returns and investigate if there exists any relationship between the said variable in this dynamic world. As such, two objectives are aimed to be achieved in the current study. Firstly, to evaluate the relationship between select financial performance indicators and stock market returns. Secondly, to analyze the impact of select financial performance indicators on stock market returns. The data pertaining to study consists of 408 companies listed in the Nifty 500 Index for the period 2002 to 2017 and further sorted to 18 sectors in India. The data relating to Economic Value Added (EVA), Return on Asset (ROA), Return on Equity (ROE), Return on Invested Capital (ROIC) was obtained from Bloomberg Terminal and stock prices for the companies were extracted from CMIE Prowess database. The study implemented Panel Data Analysis (REM and FEM Model) and Correlation Analysis to get the results. Also Summary Statistics and Panel Unit Root Tests were performed to understand the nature of the data. The required analyses were performed using econometrics software E-views. The stock returns were computed using the formula $\ln(P_0/P_1)$. Where, P_0 is the price at the end of the period and P_1 signifies price at the beginning of the period. The study performed the analysis for all the companies combined as well as sector wise analysis. The sectors considered are Automobile, Cement and Cement Products, Chemical, Construction, Consumer Goods, Energy, Fertilizers and Pesticides, Financial Services, Healthcare Services, Industrial Manufacturing, Information Technology, Media and Entertainment, Metals, Paper, Pharma, Services, Telecom, and Textiles. Since there are 18 sectors, the study identified the best model amongst Random Effects Model and Fixed Effects Model using Hausman Test for the respective sectors. Panel Unit Root Tests were performed to see if the condition to use Johansen Cointegration Test is fulfilled along with Classical Linear Regression Model (CLRM) assumptions. Johansen Cointegration Test requires the presence of unit root at level. The study also developed necessary hypotheses to supplement the results pertaining to model selection using Hausman Test (H_0 : REM is appropriate) and while analyzing the impact of select financial performance indicators on stock market returns (H_0 : There exist no significant impact of

traditional and modern financial performance measures on stock returns). The study tests this hypothesis to assist the argument as to which financial performance indicators affect the stock returns in current stock market behavior context.

Fixed Effect Model Equation:

$$Y_{it} = \beta_i X_{it} + \alpha_i + u_{it}$$

Where,

Y_{it} represents dependent variable.

X_{it} is the independent variable.

β_i represents coefficient of independent variable.

α_i is the unknown intercept term for each entity.

u_{it} is the error term

The study frames following fixed effect model equation.

$$\text{Stock Returns}_{it} = \beta_1 \text{EVA}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{ROIC}_{it} + \alpha_i + u_{it} \quad (1)$$

Random Effect Model Equation:

$$Y_{it} = \beta_i X_{it} + \alpha_i + u_{it} + \varepsilon_{it}$$

Where,

Y_{it} represents dependent variable.

X_{it} is the independent variable.

β_i represents coefficient of independent variable.

α_i is the unknown intercept term for each entity.

u_{it} represents between entity error

ε_{it} represents within entity error

The study frames following random effect model equation.

$$\text{Stock Returns}_{it} = \beta_1 \text{EVA}_{it} + \beta_2 \text{ROA}_{it} + \beta_3 \text{ROA}_{it} + \beta_4 \text{ROIC}_{it} + \alpha_i + u_{it} + \varepsilon_{it} \quad (2)$$

The study implements Hausman Test to select appropriate model amongst FEM and REM for the various sectors. And accordingly FEM and REM have been applied to the sectors separately.

5. RESULTS AND DISCUSSION

5.1. Summary Statistics

Table 1: Results of Summary Statistics of stock returns, traditional and modern performance measures.

Sectors	Indicators	Stock Returns	EVA	ROA	ROE	ROIC
Combined Data	Mean	5.613776	-18.9889	7.402430	16.29682	-9.23220
	Standard Deviation	65.45705	1399.591	8.831113	21.06090	1399.567
	Skewness	-1.08419	-63.0160	1.259552	-1.14318	-63.0150
	Kurtosis	6.814947	4010.358	24.53346	21.96509	4010.278
Automobile	Mean	14.05865	2.775486	8.759207	22.02128	12.74872
	Standard Deviation	65.20395	9.034232	6.523944	15.08579	9.04688
	Skewness	-0.93557	1.167472	1.231322	-0.49689	1.303552
	Kurtosis	5.197365	7.956746	7.044657	11.63229	8.356512
Cement and Cement Products	Mean	14.83213	-0.84770	5.873941	7.748976	8.975534
	Standard Deviation	61.32205	7.928734	8.049391	30.36577	7.642675
	Skewness	-0.58736	1.434094	1.004507	-3.07838	1.333062
	Kurtosis	4.018912	6.892845	7.869828	15.95599	6.751561
Chemical	Mean	14.15269	3.010919	8.264303	18.98958	12.13069
	Standard Deviation	63.74119	5.31551	5.562825	10.19705	5.738924
	Skewness	-0.96869	1.13605	1.073046	0.241879	0.921267
	Kurtosis	4.576387	5.92685	5.885401	4.493944	5.342847
Construction	Mean	-0.79494	-3.14143	3.73445	9.83763	6.999615
	Standard Deviation	75.1625	6.192421	4.513758	17.14222	6.027823
	Skewness	-0.79875	0.396311	1.598085	0.017764	0.648011
	Kurtosis	4.924543	6.873992	8.283842	11.31454	7.448589
Consumer Goods	Mean	10.04556	7.35786	10.99846	24.92381	17.15874
	Standard Deviation	70.4629	18.57123	9.404705	24.02283	18.47676
	Skewness	-1.32186	3.046861	0.664438	1.108505	3.07222
	Kurtosis	7.186139	16.89918	3.976263	9.580978	16.89188
Energy	Mean	-2.61387	-0.18323	5.901823	14.00041	9.486491
	Standard Deviation	55.24577	13.36167	6.776758	18.2584	13.44379
	Skewness	-1.11996	5.074886	2.077661	0.33553	5.268164
	Kurtosis	7.307063	33.73251	10.2358	21.14826	35.43304

Sectors	Indicators	Stock Returns	EVA	ROA	ROE	ROIC
Fertilizers and Pesticides	Mean	6.895773	3.571827	9.305036	20.63011	13.10725
	Standard Deviation	65.4881	6.218999	6.017508	10.53403	6.513077
	Skewness	0.003223	0.815467	1.011022	1.543894	0.898978
	Kurtosis	8.491496	3.681453	3.981453	7.918029	3.766871
Financial Services	Mean	5.551097	-125.967	2.540424	13.78215	-116.909
	Standard Deviation	60.29123	3545.907	5.193648	14.57233	3545.826
	Skewness	-0.96989	-24.8846	3.326563	-3.74125	-24.8842
	Kurtosis	5.943055	624.8312	17.20877	37.34035	624.8145
Healthcare Services	Mean	7.587505	-3.13152	4.858919	8.855012	6.394458
	Standard Deviation	33.52642	7.289984	5.998522	8.016048	7.019376
	Skewness	-0.03531	0.936825	2.063745	0.703571	1.258664
	Kurtosis	2.342635	3.580119	7.544202	4.596023	4.374447
Industrial Manufacturing	Mean	7.907829	3.861252	7.738559	15.43941	13.93973
	Standard Deviation	66.15293	46.54746	6.527624	20.26312	46.53021
	Skewness	-1.30316	17.68005	-0.46186	-3.50562	17.76708
	Kurtosis	6.447486	324.3565	9.389846	26.575	326.4747
Information Technology	Mean	1.744026	7.612399	14.87158	21.96864	17.94108
	Standard Deviation	69.93362	13.30022	9.604847	15.52452	13.18097
	Skewness	-1.53182	2.336225	-0.07804	-1.04295	2.435707
	Kurtosis	10.37545	21.20231	4.495007	7.926005	22.23065
Media and Entertainment	Mean	-0.8066	-1.34175	7.694143	9.930688	9.218942
	Standard Deviation	56.52873	8.631165	8.824717	17.69396	8.434142
	Skewness	-1.02972	-0.19900	-0.05595	-1.89511	-0.16702
	Kurtosis	4.791659	2.655411	2.711891	8.739201	2.856685
Metal	Mean	-1.57238	0.840877	8.311631	17.45243	10.9593
	Standard Deviation	75.80508	11.00447	10.71928	32.18382	10.98271
	Skewness	-1.27788	1.39022	1.887102	-0.47780	1.539708
	Kurtosis	7.567669	5.956856	8.069823	21.3363	6.113015
Paper	Mean	0.649939	-2.16224	3.445234	8.613376	6.830028
	Standard Deviation	56.58803	4.53503	3.311531	15.83391	2.922272
	Skewness	-1.95342	-0.43312	-2.2552	-3.98781	-0.86826
	Kurtosis	8.09888	2.282297	9.411735	19.64254	5.277776

Sectors	Indicators	Stock Returns	EVA	ROA	ROE	ROIC
Pharma	Mean	5.726887	-11.8213	10.64269	20.30989	-2.21165
	Standard Deviation	62.00258	234.1013	14.20167	24.31267	234.0195
	Skewness	-1.17103	-17.9427	0.887431	-0.88486	-17.9483
	Kurtosis	8.214505	327.1299	36.30192	19.12409	327.2682
Services	Mean	-0.05033	-2.42839	5.742017	11.08296	7.510137
	Standard Deviation	68.17807	7.880693	5.932031	16.84743	7.394681
	Skewness	-1.08061	-1.71479	-0.12213	-1.79400	-1.64391
	Kurtosis	5.976503	11.05058	5.658707	11.45414	11.08492
Telecom	Mean	2.810705	-6.72927	2.188883	-1.05494	3.296921
	Standard Deviation	54.67454	13.29701	8.926061	39.20316	13.46707
	Skewness	-0.46666	-0.80164	0.148648	-1.58344	-0.86534
	Kurtosis	3.47849	4.598549	4.928081	11.00599	5.154176
Textiles	Mean	14.65385	0.754267	6.143025	14.9148	10.0368
	Standard Deviation	65.14243	8.145556	6.688347	15.77064	8.29617
	Skewness	-0.59003	1.587364	1.240432	0.865229	1.642292
	Kurtosis	4.526056	6.069706	4.782094	4.085739	6.121749

Source: Computed using E-views

Table 1 depicts the result of summary statistics for the variables Stock Returns, EVA, ROA, ROE and ROIC. The results are presented for all the companies together and further sector wise analyses are performed. The average combined performance in terms of Stock Returns stood at 5.61. For the traditional performance measures i.e. ROA and ROE, the average performance was found to be 7.40 and 16.29 respectively. The performance of ROIC was noticed to be negative i.e. -9.23. Also the study found the average performance of modern performance measure EVA to be negative (-18.98). The variations as explained by Standard Deviation were found to be highest in case of EVA and least for ROA.

The study also revealed the average returns of Cement and Cement Products sector to be highest followed by Textile sector. Although the combined returns were positive for all companies including Automobile sector, Chemical sector, Consumer Goods sector, Fertilizer and Pesticide sector, Financial Services sector, Healthcare Services sector, Industrial Manufacturing sector, Information Technology sector, Paper sector, Pharma sector, and Telecom Sector, the average returns were found to be negative in case of Construction sector, Energy sector, Media and Entertainment sector, Metal sector and Service sector. The average performance in terms of EVA was found to be highest for companies belonging to Information Technology sector and least in case of Financial Services sector. The traditional performance measures ROA and ROIC were noticed to be higher for companies from Information Technology sector and ROE was higher in case of Consumer Goods sector. The average performance in terms of ROA and ROE was found to be low in case of Telecom sector. ROIC performance was least in case of companies from Financial Services sector.

5.2. Panel Unit Root Test

Table 2: Results showing Panel Unit Root Test of stock returns, traditional and modern performance measures.

Sectors	Variables	Levin, Li & Chu		ADF- Fisher Chi Square		PP- Fisher Chi Square	
		Statistic	Probability	Statistic	Probability	Statistic	Probability
Combined Data	Stock Returns	-77.7828	0.0000***	5019.08	0.0000***	5400.81	0.0000***
	EVA	-32.8805	0.0000***	1812.39	0.0000***	1844.46	0.0000***
	ROA	-73.3996	0.0000***	1488.71	0.0000***	1587.36	0.0000***
	ROE	-18.7587	0.0000***	1454.12	0.0000***	1606.28	0.0000***
	ROIC	-15.9352	0.0000***	1272.24	0.0000***	1293.49	0.0000***
Alluminium	Stock Returns	-17.3057	0.0000***	275.409	0.0000***	290.812	0.0000***
	EVA	-6.66137	0.0000***	121.187	0.0000***	128.950	0.0000***
	ROA	-3.22526	0.0006***	62.6833	0.0757*	56.0299	0.1990
	ROE	-3.66863	0.0001***	65.9955	0.0433**	62.5727	0.0770*
	ROIC	-2.75455	0.0029***	49.6083	0.4089	50.9849	0.3571
Cement and Cement Products	Stock Returns	-13.1528	0.0000***	153.738	0.0000***	169.259	0.0000***
	EVA	-3.75394	0.0001***	49.5127	0.0016***	49.5036	0.0016***
	ROA	-8.19204	0.0000***	66.2198	0.0000***	61.3131	0.0000***
	ROE	-8.55032	0.0000***	60.7957	0.0000***	52.1784	0.0000***
	ROIC	-6.57496	0.0000***	58.0460	0.0001***	44.1684	0.0073***
Chemicals	Stock Returns	-10.5876	0.0000***	114.283	0.0000***	117.480	0.0000***
	EVA	-20.9105	0.0000***	58.1302	0.0001***	57.2423	0.0002***
	ROA	0.71921	0.7640	19.6170	0.7183	21.7124	0.5964
	ROE	-0.62661	0.2655	24.6252	0.4263	27.7762	0.2696
Construction	Stock Returns	-28.4563	0.0000***	502.800	0.0000***	528.480	0.0000***
	EVA	-4.98617	0.0000***	137.294	0.0000***	141.597	0.0000***
	ROA	-17.6704	0.0000***	232.133	0.0000***	240.042	0.0000***
	ROE	-6.09955	0.0000***	149.073	0.0000***	227.122	0.0000***
Consumer Goods	Stock Returns	-9.77140	0.0000***	139.873	0.0000***	141.589	0.0000***
	EVA	-25.8306	0.0000***	616.919	0.0000***	659.155	0.0000***
	EVA	7.16409	0.0000***	227.952	0.0000***	217.822	0.0000***
	ROA	4.26952	0.0000***	134.567	0.0235**	135.773	0.0198**
	ROE	5.90215	0.0000***	181.053	0.0000***	186.515	0.0000***
	ROIC	3.17908	0.0007***	116.514	0.1892	117.930	0.1656

Sectors	Variables	Levin, Li & Chu		ADF- Fisher Chi Square		PP- Fisher Chi Square	
		Statistic	Probability	Statistic	Probability	Statistic	Probability
Energy	Stock Returns	22.3271	0.0000***	346.609	0.0000***	369.970	0.0000***
	EVA	5.89487	0.0000***	131.632	0.0000***	153.997	0.0000***
	ROA	6.05304	0.0000***	103.056	0.0001***	107.944	0.0000***
	ROE	4.89323	0.0000***	78.8574	0.0153**	78.4262	0.0166**
	ROIC	2.41718	0.0078***	70.0089	0.0704*	81.2949	0.0096***
	Stock Returns	-20.5505	0.0000***	153.735	0.0000***	155.663	0.0000***
Fertilizers & Pesticides	EVA	-2.16625	0.0151**	31.8938	0.0444**	31.1449	0.0533*
	ROA	-1.61579	0.0531*	24.1497	0.2359	28.8395	0.0910*
	ROE	-2.69497	0.0035***	27.4479	0.1231	30.2720	0.0656*
	ROIC	0.95833	0.8311	24.0868	0.2386	25.0686	0.1988
	Stock Returns	-29.4057	0.0000***	775.653	0.0000***	845.023	0.0000***
Financial Services	EVA	-6.91228	0.0000***	281.913	0.0000***	315.357	0.0000***
	ROA	-6.57469	0.0000***	227.588	0.0000***	247.190	0.0000***
	ROE	-7.16340	0.0000***	229.816	0.0000***	246.155	0.0000***
	ROIC	-4.89428	0.0000***	229.637	0.0000***	226.580	0.0000***
	Stock Returns	-5.31946	0.0000***	26.9582	0.0000***	30.1655	0.0000***
Healthcare Services	EVA	-0.87910	0.1897	6.97494	0.1372	6.35698	0.1740
	ROA	-0.92254	0.1781	8.47990	0.0755*	8.40117	0.0779*
	ROE	-1.57626	0.0575*	9.87001	0.0427**	9.04659	0.0599*
	ROIC	-1.56491	0.0588*	10.1025	0.0387**	9.98013	0.0408**
	Stock Returns	-22.8351	0.0000***	431.401	0.0000***	463.305	0.0000***
Industrial Manufacturing	EVA	-8.17706	0.0000***	162.180	0.0000***	171.972	0.0000***
	ROA	-1.79785	0.0361**	92.5395	0.0256**	95.6535	0.0154**
	ROE	-3.18179	0.0007***	93.9145	0.0204**	99.3157	0.0079***
	ROIC	-0.34295	0.3658	82.3276	0.1136	86.2088	0.0673*
	Stock Returns	-20.3784	0.0000***	336.632	0.0000***	360.297	0.0000***
Information Technology	EVA	-7.90322	0.0000***	117.893	0.0000***	110.367	0.0000***
	ROA	-4.69842	0.0000***	80.8183	0.0038***	79.8502	0.0046***
	ROE	-5.61460	0.0000***	83.3622	0.0021***	90.5002	0.0004***
	ROIC	-5.12443	0.0000***	81.9268	0.0029***	82.4348	0.0026***
	Stock Returns	-14.3441	0.0000***	164.314	0.0000***	175.342	0.0000***
Media and Entertainment	EVA	-4.79095	0.0000***	46.6056	0.0151***	42.8821	0.0357**
	ROA	-0.31043	0.3781	28.3682	0.4451	38.6518	0.0867*
	ROE	-0.32628	0.3721	32.6439	0.2491	48.5240	0.0094***
	ROIC	-0.87278	0.1914	24.7073	0.6437	34.2908	0.1915
	Stock Returns	-14.3441	0.0000***	164.314	0.0000***	175.342	0.0000***

Sectors	Variables	Levin, Li & Chu		ADF- Fisher Chi Square		PP- Fisher Chi Square	
		Statistic	Probability	Statistic	Probability	Statistic	Probability
Metals	Stock Returns	-15.2918	0.0000***	185.791	0.0000***	209.855	0.0000***
	EVA	-3.44681	0.0003***	65.4749	0.0009***	70.0427	0.0003***
	ROA	-4.63617	0.0000***	85.7918	0.0000***	95.8641	0.0000***
	ROE	-5.20861	0.0000***	108.402	0.0000***	116.005	0.0000***
	ROIC	-4.17667	0.0000***	87.4646	0.0000***	85.8222	0.0000***
	Stock Returns	-7.37866	0.0000***	38.5542	0.0000***	39.3230	0.0000***
Paper	EVA	-0.51585	0.3030	8.65216	0.0704*	8.50936	0.0746*
	ROA	-0.55009	0.2911	2.48485	0.6474	2.69666	0.6098
	ROE	-0.18171	0.4279	1.58166	0.8121	1.67370	0.7955
	ROIC	-0.94118	0.1733	4.44402	0.3492	4.22840	0.3760
	Stock Returns	-19.9238	0.0000***	394.022	0.0000***	436.891	0.0000***
	EVA	-9.70737	0.0000***	195.776	0.0000***	209.027	0.0000***
Pharma	ROA	-86.7305	0.0000***	123.215	0.0000***	141.150	0.0000***
	ROE	-9.14240	0.0000***	125.643	0.0000***	147.356	0.0000***
	ROIC	-4.87829	0.0000***	117.782	0.0000***	123.126	0.0000***
	Stock Returns	-18.2125	0.0000***	275.223	0.0000***	300.498	0.0000***
	EVA	-5.03099	0.0000***	86.3730	0.0001***	89.8567	0.0000***
	ROA	-4.72363	0.0000***	89.7048	0.0000***	104.609	0.0000***
Services	ROE	-3.86681	0.0001***	72.2036	0.0026***	73.9079	0.0017***
	ROIC	-3.34235	0.0004***	68.9099	0.0055***	65.9942	0.0105**
	Stock Returns	-8.77546	0.0000***	92.6726	0.0000***	92.8483	0.0000***
	EVA	-3.48576	0.0002***	38.6832	0.0073***	40.3795	0.0045***
	ROA	4.86965	1.0000	57.9212	0.0000***	71.7733	0.0000***
	ROE	-5.00596	0.0000***	60.1060	0.0000***	60.9657	0.0000***
Telecom	ROIC	-4.38373	0.0000***	47.5959	0.0005***	51.0581	0.0002***
	Stock Returns	11.7211	0.0000***	134.362	0.0000***	156.446	0.0000***
	EVA	1.40986	0.9207	44.2682	0.0261**	39.4529	0.0739***
	ROA	-0.52564	0.2996	49.3736	0.0076***	49.9595	0.0065***
	ROE	-3.67967	0.0001***	48.7291	0.0089***	47.9631	0.0108**
	ROIC	-1.73023	0.0418**	30.9862	0.3177	30.2830	0.3498

Source: Computed using E-views

Note: ***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level.

The study performed Panel Unit Root Test to check the stationarity of data. For this purpose, study made use of three statistics namely, Levin, Li & Chu; ADF-Fisher Chi Square and PP-Fisher Chi Square. The results are highlighted in Table 2. The study found no existence of unit root in case of combined data of all companies for the selected variables. Also, similar results were noticed in

case of the sectors. Hence the data was found to be stationary. The tests of stationarity were performed to see if the condition to use Johansen Cointegration Test is fulfilled along with Classical Linear Regression Model (CLRM) assumptions. Johansen Cointegration Test requires the data to be non stationary at level. However, the results indicate the data to be stationary and hence the study cannot use Johansen Cointegration Test, but it fulfills the CLRM assumption that the data should be stationary. The study will make use of appropriate model amongst REM and FEM and interpret the results accordingly.

5.3. Correlation Analysis

Table 3: Results showing relationship of Stock Returns with traditional and modern performance measures.

Sectors	EVA		ROA		ROE		ROIC	
	r	p-value	r	p-value	r	p-value	r	p-value
Combined Data	-0.0207	0.1856	-0.0246	0.115	-0.027	0.0808*	-0.0206	0.186
Automobile	-0.0070	0.914	-0.0816	0.213	-0.121	0.063*	0.0300	0.647
Cement and Cement Products	-0.1566	0.067*	-0.2023	0.01**	-0.174	0.041**	-0.1981	0.020**
Chemical	0.0080	0.9319	-0.0078	0.933	0.0112	0.905	0.0458	0.626
Construction	-0.0536	0.3353	-0.1100	0.04**	-0.096	0.0812*	-0.0484	0.384
Consumer Goods	0.0100	0.815	-0.0225	0.600	-0.040	0.3493	0.0145	0.734
Energy	0.0082	0.8956	-0.0227	0.716	-0.051	0.4106	-0.0018	0.975
Fertilizers and Pesticides	0.0896	0.3776	0.0081	0.936	0.0734	0.4699	0.0494	0.626
Financial Services	-0.0556	0.1616	0.0399	0.315	0.0448	0.2594	-0.0556	0.161
Healthcare Services	0.2444	0.2288	0.0319	0.876	0.0880	0.6688	0.2425	0.232
Industrial Manufacturing	-0.0020	0.9689	-0.0932	0.082*	-0.079	0.1391	-0.0052	0.922
Information Technology	0.0163	0.7829	-0.0219	0.711	-0.043	0.4595	0.0440	0.458
Media and Entertainment	0.0697	0.4436	0.1123	0.216	0.0940	0.3009	0.1091	0.229
Metals	-0.1298	0.1171	-0.1699	0.03**	-0.098	0.2371	-0.1185	0.152
Paper	0.0123	0.9494	0.0333	0.863	0.0378	0.8455	0.0922	0.634
Pharma	-0.0503	0.3554	-0.0342	0.529	-0.000	0.9854	-0.0490	0.367
Services	-0.0394	0.5643	-0.0272	0.690	-0.107	0.1153	-0.0000	0.999
Telecom	0.1772	0.087*	0.1270	0.222	0.0990	0.342	0.1621	0.118
Textiles	0.0533	0.5432	0.0217	0.804	0.0608	0.4886	0.0838	0.339

Source: Computed using E-views

Notes: ***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level and r represents coefficient of correlation.

Table 3 reveals the relationship between traditional and modern performance measures with Stock Returns. The results indicate a low negative relationship of EVA, ROA, ROE and ROIC with Stock Returns, with the evidence of significant relationship only in case of ROE. In case of sectors, study noticed mixed results of negative and positive relationship of performance measures with Stock Returns. However, relation of Stock Returns was found to be significant only in case of Cement and Cement Product sector (low negative) and Telecom sector (low positive). The relationship between ROA and stock returns was significant in case of Cement and Cement Product sector (low

negative), Construction sector (low negative) and Industrial Manufacturing sector (low negative). Also low negative significant relationship is evident between ROE and Stock Returns in case of Cement and Cement Product sector and Construction sector and a significant low negative relation between ROIC and Stock Returns in case of Cement and Cement Products sector. The results clearly indicate the existence of low negative significant relationship of traditional and modern performance measures with Stock Returns in case of Cement and Cement Product sector.

5.4. Selection of Appropriate Model using Hausman Test

Table 4: Results of Hausman Test for model selection.

Sectors	Chi Square Statistic	Probability	Appropriate Model
Combined Data	60.724723	0.0000***	FEM
Automobile	5.131375	0.2741	REM
Cement and Cement Products	2.392457	0.664	REM
Chemical	1.72391	0.7864	REM
Construction	15.440562	0.0039***	FEM
Consumer Goods	5.110397	0.2762	REM
Energy	1.547033	0.8183	REM
Fertilizers and Pesticides	2.110711	0.7154	REM
Financial Services	2.119918	0.7137	REM
Industrial Manufacturing	17.775165	0.0014***	FEM
Information Technology	2.583579	0.6297	REM
Media and Entertainment	4.069055	0.3967	REM
Metals	1.900578	0.754	REM
Pharma	1.371704	0.8491	REM
Services	14.064948	0.0071***	FEM
Telecom	3.338335	0.5029	REM
Textiles	11.019651	0.0263**	FEM

Source: Computed using E-views

Notes: ***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level. In case of Healthcare services and Paper sector, REM model was found to be inappropriate due to limited number of companies the sectors. However FEM model was found to be appropriate and the results are displayed in Table 5.

The purpose of the study is to identify the best model amongst Fixed Effects Model (FEM) and Random Effects Model (REM) and interpret the results accordingly for all combined companies and further sector wise analysis. Hence Hausman Test is implemented to select the appropriate model for the study. The results as highlighted in Table 4 reveals that for all companies combined, the null hypotheses gets rejected at 1% level of significance and therefore FEM model will be considered to be appropriate for such analysis. The study also noticed FEM model to be appropriate for Construction sector, Industrial Manufacturing sector, Services sector, and Textiles sector. The REM was found to be appropriate for Automobile sector, Cement and Cement Products sector, Chemical sector, Consumer Goods sector, Energy sector, Fertilizer and Pesticides sector, Financial Services sector, Information Technology sector, Media and Entertainment Sector, Metals sector, Pharma sector, and Telecom sector. The study performs the analysis across 18 sectors. Hence the model is different for every sector. The FEM, REM or OLS cannot be applied to all the sectors

uniformly. Therefore appropriate model is identified and separate analysis using FEM and REM are done for the respective sectors as shown in Table 5 and Table 6.

5.5. Fixed Effects Model (FEM)

Table 5: Results of Fixed Effects Model

Sectors	Variable	Coefficient	Prob.	Existence of Significant Impact
Combined Data	EVA	-2.1726	0.0005***	Yes
	ROA	-0.85968	0.0014***	Yes
	ROE	-0.17064	0.0735*	Yes
	ROIC	2.171525	0.0005***	Yes
Construction	EVA	-1.21154	0.6116	No
	ROA	-5.16873	0.0357**	Yes
	ROE	-0.05378	0.9218	No
	ROIC	1.601609	0.5094	No
Healthcare Services	EVA	-0.58512	0.8924	No
	ROA	-4.77643	0.6221	No
	ROE	0.419397	0.9157	No
	ROIC	7.212399	0.1691	No
Industrial Manufacturing	EVA	2.92533	0.1748	No
	ROA	-2.2603	0.0771*	Yes
	ROE	-0.26256	0.5131	No
	ROIC	-2.84883	0.1874	No
Paper	EVA	-6.51045	0.3427	No
	ROA	2.681209	0.8539	No
	ROE	-1.13737	0.6617	No
	ROIC	10.03834	0.3037	No
Services	EVA	-5.40191	0.053*	Yes
	ROA	0.181388	0.9265	No
	ROE	-1.66037	0.0168**	Yes
	ROIC	5.901181	0.053*	Yes
Textiles	EVA	-5.90435	0.0833*	Yes
	ROA	-11.9435	0.0024***	Yes
	ROE	2.437595	0.0604*	Yes
	ROIC	8.262997	0.0279**	Yes

Source: Computed using E-views

Note: ***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level.

Table 5 exhibits the results of FEM. The results indicate a significant impact of EVA, ROA, ROE and ROIC on Stock Returns in case of all companies. However, the sectoral evidence of such impact is minimal. The study noticed a significant negative impact of EVA on Stock Returns in case of Service sector and Textile sector. The impact of ROA on Stock Returns was evident in case of Construction Sector, Industrial Manufacturing sector and Textiles sector and such impact was found to be negative. The results also indicated a significant negative impact of ROE on Stock Returns in case of Service sector and a positive impact in case of Textile sector. The impact of

ROIC on Stock Returns was found in case of Services sector and Textile sector and such impact was found to be significantly positive.

5.6. *Random Effects Model (REM)*

Table 6: Results of Random Effects Model.

Sectors	Variable	Coefficient	Prob.	Existence of Significant Impact
Automobile	EVA	-6.34345	0.0075***	Yes
	ROA	-2.14614	0.0651*	Yes
	ROE	-0.70915	0.1149	No
	ROIC	8.441051	0.0007***	Yes
Cement and Cement Products	EVA	3.685939	0.1508	No
	ROA	-0.2947	0.8642	No
	ROE	-0.16509	0.5017	No
	ROIC	-4.80754	0.1074	No
Chemical	EVA	-3.29096	0.3334	No
	ROA	-3.09592	0.2906	No
	ROE	0.447827	0.6547	No
	ROIC	5.488187	0.1357	No
Consumer Goods	EVA	-1.12641	0.4873	No
	ROA	-0.07052	0.9131	No
	ROE	-0.41068	0.1376	No
	ROIC	1.64292	0.3119	No
Energy	EVA	2.960781	0.1598	No
	ROA	0.412661	0.7269	No
	ROE	-0.49682	0.1999	No
	ROIC	-2.58531	0.2212	No
Fertilizer and Pesticides	EVA	4.941912	0.2022	No
	ROA	-3.10791	0.2602	No
	ROE	0.725139	0.4483	No
	ROIC	-2.17787	0.5872	No
Financial Services	EVA	0.604381	0.6205	No
	ROA	0.342609	0.5474	No
	ROE	0.110094	0.588	No
	ROIC	-0.60534	0.62	No
Information Technology	EVA	-9.70402	0.0002***	Yes
	ROA	0.327665	0.7799	No
	ROE	-0.79508	0.2786	No
	ROIC	10.45583	0.0001***	Yes
Media and Entertainment	EVA	-9.96388	0.0093***	Yes
	ROA	0.757088	0.6684	No
	ROE	-0.11666	0.8568	No
	ROIC	10.27645	0.0138**	Yes

Sectors	Variable	Coefficient	Prob.	Existence of Significant Impact
Metals	EVA	-4.19894	0.1921	No
	ROA	-2.60482	0.0602*	Yes
	ROE	0.02237	0.9286	No
	ROIC	5.516528	0.1346	No
Pharma	EVA	-6.39306	0.0012***	Yes
	ROA	-0.68605	0.1856	No
	ROE	0.420882	0.1428	No
	ROIC	6.387501	0.0012***	Yes
Telecom	EVA	3.731019	0.2494	No
	ROA	0.388731	0.7357	No
	ROE	-0.05869	0.7674	No
	ROIC	-3.09995	0.3558	No

Source: Computed using E-views

Note: ***Significant at 1% Level, **Significant at 5% Level, *Significant at 10% Level.

The results of REM are indicated in Table 6. The results revealed a significant impact of EVA on Stock Returns in case of Automobile sector, Information Technology Sector, Media and Entertainment Sector and Pharma Sector. And such impact was found to be negative for these sectors. As the negative EVA reported by companies belonging to these sectors, the negative impact is justified. The study also noticed a significant negative impact of ROA on Stock Returns in case of Automobile sector and Metals sector. ROIC was noticed to be impacting Stock Returns in case of Automobile Sector, Information Technology sector, Media and Entertainment sector and Pharma sector. And such impact was found to be significantly positive. However no significant impact of ROE on Stock Returns was evident for the selected sectors using REM. Also REM suggests that the impact of modern performance measures have been more on Stock Returns than traditional measures for these sectors.

6. CONCLUSION

The current study was undertaken to examine the impact of traditional (Return on Asset, Return on Equity, Return on Invested Capital) and modern performance measures (Economic Value Added) on stock returns and investigate if there exists any relationship between the said variables in this dynamic world. The data pertaining to study consisted of 408 companies listed in the Nifty 500 Index for the period 2002 to 2017 and further sorted to 18 sectors in India. The data relating to Economic Value Added (EVA), Return on Asset (ROA), Return on Equity (ROE), Return on Invested Capital (ROIC) was obtained from Bloomberg Terminal and stock prices for the companies were extracted from CMIE Prowess database. The study implemented Panel Data Analysis (REM and FEM Model), Correlation Analysis and Granger Causality Test to get the results. Also Summary Statistics and Panel Unit Toot Tests were performed to understand the nature of the data.

The results revealed the average returns of Cement and Cement Products sector to be highest followed by Textile sector. The average performance in terms of EVA was found to be highest for companies belonging to Information Technology sector and least in case of Financial Services

sector. The traditional performance measures ROA and ROIC were noticed to be higher for companies from Information Technology sector and ROE was higher in case of Consumer Goods sector. The study found no existence of unit root in case of combined data of all companies for the selected variables. Also, similar results were noticed in case of the sectors. The results indicated a low negative relationship of EVA, ROA, ROE and ROIC with Stock Returns, with the evidence of significant relationship only in case of ROE. In case of sectors, study noticed mixed results of negative and positive relationship of performance measures with Stock Returns. The study witnessed the existence of low negative significant relationship of traditional and modern performance measures with Stock Returns in case of Cement and Cement Product sector. The study also noticed a significant negative impact of EVA on Stock Returns in case of Service sector and Textile sector. The impact of ROIC on Stock Returns was found in case of Services sector and Textile sector and such impact was significantly positive. The results revealed a significant impact of EVA on Stock Returns in case of Automobile sector, Information Technology Sector, Media and Entertainment Sector and Pharma Sector. REM suggested that the impact of modern performance measures have been more on Stock Returns than traditional measures for these sectors.

The present study attempted to perform the analysis considering all the 500 companies listed on Nifty 500 Index, however it could not do so because of non availability of data for some of the companies. Hence 408 companies were selected for the study. The current research will help the companies to understand the role of traditional and modern performance measures. The learning outcome from the study is to witness the dynamic relationship of traditional and modern performance measures across various sectors. The will assist the investors in performing fundamental analysis and thereby see which performance measure (traditional or modern) has impact on particular sector and frame investment and trading strategies. This is the only study which considers a large pool of 408 companies and performs the analysis across 18 sectors in India and hence can assist regulators and company authorities to understand the significance of these performance measures and make all companies to mandatorily disclose these measures in their financial statements.

REFERENCES

- Almomani, M. A. (2016). The Ability of Traditional and Modern Performance Indicators in Interpreting the Phenomenon of Earnings Management: Evidence Manufacturing Firms in Amman Stock Exchange. *Asian Journal of Finance & Accounting*, 8(1), 77–99. doi: 10.5296/ajfa.v8i1.8943.
- Amyulianthy, R. and Ritonga, E. K. (2016). The Effect Of Economic Value Added And Earning Per Share To Stocks Return (Panel Data Approachment). *Management and Administrative Sciences Review*, 5(2), 8–15.
- Baybord, A., Nejad, K. and Kargar, E. (2015). Evaluating the Relationship between Economic Value-Added and Stock Return in Companies Listed at Tehran Stock Exchange. *Management and Administrative Science Review*, 4(1), 215–221. Available at: <http://www.absronline.org/journals/index.php/masr/article/view/414>.
- Ghafoor, A. A., Siddique, K. and Sarwar, G. (2014). The Effect Of Economic Value Added On Stock Return : Evidence From Selected Companies Of Karachi Stock Exchange. *Research Journal of Finance and Accounting*, 5(23), 140–153. Available at: <http://garj.org/full->

articles/the-effect-of-economic-value-added-on-stock-return-evidence-from-selected-companies-of-karachi-stock-exchange.pdf?view=download.

- Samadiyan, B., Pooryeganeh, N., Ebrahimi, H., and Ghanbari, Y. (2013). Relative And Differential Information Content Of Economic Value Added, Earnings, Operating Cash Flow And Stock Return. *International Journal of Asian Social Science*, 3(1), 29–37.
- Nakhaei, H. and Hamid, N. (2013). The Relationship between Economic Value Added, Return on Assets, and Return on Equity with Market Value Added in Tehran Stock Exchange (TSE). *Proceedings of Global Business and Finance Research Conference*, 16(11), 1–9. doi: 10.5829/idosi.mejsr.2013.16.11.12053.
- Parvaei, A. and Farhadi, S. (2013). The Ability of Explaining and Predicting of Economic Value Added (EVA) versus Net Income (NI), Residual Income (RI) & Free Cash Flow (FCF) in Tehran Stock Exchange (TSE). *International Journal of Economics and Finance*, 5(2), 67–77. doi: 10.5539/ijef.v5n2p67.
- Poornima, B. G., Narayan, P. and Reddy, Y. V (2015). Economic Value-Added as an Emerging Tool of Performance Measurement. *The IUP Journal of Accounting Research and Audit Practices*, XIV(3), 38–49.
- Ray, K. K. (2014). EVA as a Financial Metric : the relationship between EVA and Stock Market Performance. *European Journal of Business and Management*, 6(11), 105–115.
- Reddy, Y. V and Narayan, P. (2017). The Impact of EVA and Traditional Accounting Performance Measures on Stock Returns : Evidence from India. *The IUP Journal of Accounting Research and Audit Practices*, XVI(1), 25–36.
- Saji, T. G. (2014). EVA and Stock Returns in Emerging Markets : The Indian Evidence. *The IUP Journal of Accounting Research and Audit Practices*, XIII(4), 25–36.
- Sauro, M. and Tafirei, M. (2016). EVA and Stock Returns: Are They Correlated. *Financial Assets and Investing*, 7(2), 34–51. doi: 10.5817/FAI2016-2-3.
- Shastri, F. C. *et al.* (2015). EVA and Stock returns in Emerging Markets: The Indian Evidence. *International Journal of Current Research*, 7(5), 15860–15864.
- Threemanna, T. H. M. S. and Gunaratne, Y. M. C. (2016). Performance measures and stock return: Evidence from Beverage Food and Tobacco sector of Sri Lanka. *International Journal of Research in Management Issue*, 1(6), 15–17.