Research article Available online www.ijsrr.org ISSN: 2279–0543

International Journal of Scientific Research and Reviews

Eva as Periodic Performance Measure for Indian Companies

Sujata Behera

Institute of Management, Nirma University, Sarkhej Gandhinagar Highway Ahmedabad, Gujarat, India, 382481
E-mail: sujatadalai2014@gmail.com, Mobile no: 9879006852

ABSTRACT:

This study investigates whether Indian companies should implement EVA as Periodic performance measure. It examinesthe explanatory ability of EVA (that is determined on accrual and cash basis) and traditional measures like free cash flow, dividend, RONW, ROCE, PBIDTM, PATM and CR, as well as compares the performance of EVA with all these traditional performance measures. For better exposition, this study considers 370 data years of 69 large cap companies and conducts relative as well as incremental analyses. The results of both analyses reveal that EVA maintains strong association with market value of equity and increases the explanatory ability beyond that is provided by rest of the periodic measures. Thus, this study suggests to implement EVA as periodic performance measure by Indian companies.

KEYWORDS: CAPM, EVA, MVE, RONE, RONW

***Corresponding author:**

SujataBehera

Institute of Management,

Nirma University, SarkhejGandhinagar Highway

Ahmedabad, Gujarat, India, 382481

E-mail: sujatadalai2014@gmail.com,

Mobile no: 9879006852

INTRODUCTION:

Performance measures, the key tools for performance measurement system, play a vital role in every organization as they are often viewed as forward looking indicators that assist management to predict a company's economic performance and many times reveal the need for possible changes in operations[1]. The choice of performance measures is one of the most critical challenges that all the organizations face[2]. Wrongly chosen performance measure may mislead managers in their decision making process and ultimately bringing the undesirable results. It is a difficult task to select the proper periodic financial performance measure. The perceived inadequacies in traditional accounting performance measures have motivated a variety of measurement innovations such as the economic value measures[2]. Traditional measures are criticized because of not including cost of capital. EVA is the best periodic performance measure[3]. EVA measures economicprofit which is very much similar to residual income, but with the only difference of considering cost of capital. EVA proponents strongly claim that it has strong association with up and down trend of stock prices. The term EVA appeared in the literature as early as 1989[4]. The statement of the article in Fortune magazine attracted the attention of researchers who explain the successful stories of EVA[4]. It is proposed to be determined by deducting weighted average cost of capital of debt equity from operating profit after taxes. EVA is unique in the market because of considering cost of capital. Cost of capital (required return) is the normal market return[5]. None of the accounting measures consider cost of capital and don't have the capability of measuring the performance of specific company with respect to market that EVA can do.EVA stands well out from the crowd as the single best measure of wealth creation on a contemporaneous basis and EVA is almost 50% better than its closest accounting based competitor in explaining changes in shareholders wealth[6]. Accounting based measures such as earnings, return on equity, dividends, dividend growth, earnings growth or even cash flow are not crucial measures of corporate performance[6].EVA value measurement tool has been well accepted by the advanced economy countries. During last two and half decades, lot of studies have been conducted to examine and compare the explanatory ability of EVA with accounting measures. Some researchers inferred that EVA outperforms traditional measures[6,7,9,10, 11,12,13,14]. Other researchers elucidated that traditional measures outperform EVA[15, 16, 17, 18, 19 20]. It is evident that the world has paid attention on the explanatory ability of EVA as performance measurement tool. However, the results of above studies are controversial and mixed.

Stakeholders are looking at the performance of companies where they have invested their hard earning money. It is true that EVA finds performance of specific company with respect to

market, where all the investors and stakeholders can be informed the position of the specific company before market. The objective of EVA is to measure the performance of company over a specific period of time that enhances the financial capability of company and increases the shareholders' wealth[20]. Even though Popularity of EVA has been growing in India and some of the leading Indian companies have adopted EVA, but controversial results of EVA discourages other companies to go for it.

The objective of this study is to examine whether EVA should be implemented as performance measure by Indian companies. It compares the explanatory ability of EVA (determined by both accrual and cash basis)witheighttraditionalmeasures such as free cash flow, dividend, RONW, ROCE, PBIDTM, PATM and CR. It conducts relative and incremental analyses by considering every 3rd year data over the period 2002-2003 through 2016-2017 and making total of 370 data years selected from 69 large cap companies of BSE 500 companies. The relative analyses examine the explanatory ability of all the considered variables, whereas incremental analyses examine if each of the considered variables increases the explanatory ability beyond that is provided by rest of the variables to finding whether it is worth to implement EVA as performance measure. The results of this study support to implement EVA (determined on both accrual and cash basis) as performance measure as it maintains significant association with market value of equity and significantly increases the explanatory ability beyond that is provided by other measures. However, this study does not support the claim of EVA proponents that EVA outperforms all the traditional measures as dividend outperforms EVA.

The rest of the study is arranged in following manner. Section 2 is about find EVA. Section 3 explains sample and variables. Section 4 discusses methodology and all the required statistical models for examining and comparing the performance of financial performance measures. Section 5 is all about result and empirical analysis. Section 6 focuses on overall discussion and section 7 outlines conclusion.

2. DEFINING EVA:

EVA measures financial performance of specific company with respect to market by deducting cost of capital from earnings.

EVA= net operating profit after tax- weighted average cost of capital…….(1)

Weighted average cost of capital= (rate of interest of debt capital after tax*debt capital/ capital employed+ cost of equity capital*book value equity capital/ capital employed)* capital employed

Weighted average cost of capital= rate of interest of debt capital(1-tax)*debt capital+ cost of equity capital* book value of equity capital…….(2)

By replacing weighted average cost of capital of equation 1 with equation 2

EVA= net operating profit after tax- {rate of interest of debt capital (1-tax)*debt capital+ cost of equity capital* book value of equity capital)}

={net operating profit after tax- rate interest of debt of capital(1-tax)*debt capital}-cost of equity capital*book value of equity capital

= profit after tax- cost of capital*book value of equity

=rate of return*book value of equity capital- rate of required return*book value equity capital

Where, Profit after tax=rate of return* book value of equity capital and cost of equity capital is required rate of return

= (rate of return-required rate of return)*book value of equity capital

2.1. *Finding Required Rate of Return*:

This study attempts to keep both rate of return and required rate of return at the same level by finding 'r_m' on book value of equity as rate of return of specific companies are provided on book value of equity**.**

Required rate of return= $r_f + \beta*(r_m - r_f)$,

Where r_f = risk free rate of return=average annual Treasury bond rate

r_m=Annual capital growth rate of SENSEX

2.2. *Finding Rate of Return:*

Accrual Basis Rate of Return (AROR): Rate of return determined on accrual basis = Earnings after interest and tax determined in accrual basis / Average book value of equity.

Cash Basis Rate of Return (CROR): Rate of return determined on cash basis= Earnings after interest and tax determined in cash basis/ average book value of equity.

3. SAMPLES AND VARIABLES:

3. a. Sample:

In this study, the required financial statements and average market value of equities of companies are collected from ACE Equity. The large cap companies are selected on the basis of the availability of complete information. Annualized Treasury bond rate for the period of 180 days are considered from the Handbook of Statistics on Indian Economy of the Reserve Bank of India,

whereas annual earnings price ratio and annual price book value ratios are obtained from BSE Sensitive Index to find $r_{m.}$

Sample data of every third year over the period of 2003-2004 through 2016-2017 of 69 large cap companies of BSE 500 companies are collected

3. b. Variables:

In table 1, dependent variable is market value of equity(MVE), whereas independent variables are accrual EVA (AEVA), cash EVA (CEVA), free cash flow(FCF), return on capital employed(ROCE), return on net worth(RONW), profit before interest, depreciation, and tax margin(PBIDTM), profit after tax margin, and dividend.

Dependent variable:

MVE(Market Value Equity)=Annual weighted average equity capital

Independent Variables:

Accrual Basis EVA**(**AEVA): AEVA= (Rate of return on accrual basis – required rate of return)* average book value of equity.

Cash Basis EVA(CEVA): CEVA= (rate of return on cash basis – required rate of return)* average book value of equity

Free Cash Flow (FCF): FCF= Earnings before interest and tax- taxes +depreciation & amortization- capital expenditure- change in working capital

Return on Capital Employed (ROCE): ROCE=Profit before interest and tax/ capital employed

Return on Net Worth (RONW): RONW= Profit after interest and tax/ average net worth

Profit before Interest, Depreciation, and Tax Margin (PBIDTM): PBIDTM=Profit before interest, depreciation and tax/ net revenue

Profit after Tax Margin (PATM): PATM =Profit after tax/ net revenue

Dividend: Dividend provided to equity holders.

Market Value of Equity (MVE):Annual weighted average market value of equity.

4. METHODOLOGY:

This study examines whether cash basis / accrual EVA outperforms traditional measures in Indian system by conducting relative and incremental analyses.

Relative information content comparisons are appropriate when making mutual exclusive choices among performance measures, whereas incremental information content comparisons assess whether one measure provides more information beyond that provided by other measures. To

examine the relative information content and incremental information content, this study develops statistical models.

The objective of conducting relative information content analysis is to find whether cash basis/accrual basis EVA explains market value of equity better than that of traditional measures, whereas incremental information content analysis cross checks by finding whether cash basis/ accrual basis EVA increases the information content beyond that is provided by traditionalmeasures in explaining market value of equity.

This study examines the following aspects to find if performance EVA is better than traditional measures

1. Whether relative information content of accrual/ cash basis EVA is better than that ofall the traditional measures. It is examined by conducting relative information content analysis.
2. Whether EVA, either determined by accrual/cash basis, increases the information content beyond that is provided by accounting measures.It is examined by conducting incremental information content analysis.
3. Whether FCF increases the information content beyond that is provided by RONW, ROCE, PBIDTM, PATM, CEVA, AEVA, Dividend and CR. It is examined by conducting incremental information content analysis
4. Whether dividend increases the information content beyond that is provided by RONW, ROCE, PBIDTM, PATM, CR, CEVA, AEVA and FCF. It is examined by conducting incremental information content analysis
5. RONW, ROCE, PBIDTM, PATM, CR add the information content beyond that is provided by CEVA, AEVA, FCF and dividend. It is examined by conducting incremental information content analysis

The 1st one is to find if relative information content of EVA is better than that of accounting measures. 2nd one is to find if EVA increases explanatory ability beyond that is provided by accounting measures.3rdone is to find whether free cash flow increases the explanatory ability beyond that is provided by all other periodic measures that include(RONW, ROCE, PBIDTM, PATM, CR, CEVA, AEVA, and dividend). 4thone is to find whether dividend increases the explanatory ability beyond that is provided by EVA and other accounting measures. Similarly, the 5th one is to verify if traditional measures such as RONW, ROCE, PBIDTM, PATM and CR together increases the explanatory ability beyond that is provided by EVA, FCF, and dividend.

4.1. The Model Specification for Examining Relative Information Content:

The following three models examine the relative information content of EVA, earnings and required earnings by conducting ordinary least square regression analysis. Here 'i' stands for companies of large cap and mid cap, while't' stands for the time period which is Of 2002-2003 through 2016-2017. To conduct relative information content analysis, this study mostly compares the coefficient of determination of statistical model-1 and answers hypothesis 1.The pooled cross sectional data are used in each model. Statistical model 2 is without accrual EVA.

$MVE_{it} = m_0 + m_1 * AEVA + m_2 * CEVA + e_{it}$……. (Model-1)

$MVE_{it} = n_0 + n_1 * RONW + n_2 * ROCE_1 + n_3 * FCF + n_4 * Dividend + n_5 * PBIDTM + n_6 * PATM + n_7 * CR + e_{it}$…… (Model-2)

$MVE_{it} = p_0 + p_1 * FCF + e_{it}$……. (Model-3)

$MVE_{it} = q_0 + q_1 * Dividend + e_{it}$…….. (Model-4)

$MVE_{it} = r_0 + r_1 * RONW + r_2 * ROCE_1 + r_3 * PBIDTM + r_4 * PATM + r_5 * CR + e_{it}$…… (Model-5)

4.2. Model Specification for Examining Incremental Information Content:

Model 6 includesall the independent variables. Model 7 ishaving all the independent variables except EVA. Model 8 includes all the variables without dividend. Model 9 is without FCF. Model 10 is without RONW, RONE, PBIDTM, PATM, and CR. Objective 2 2 is examined by comparing explanatory ability of model 6 with that of model 7. Objective 3 is examined by comparing explanatory ability of model 8 with that of model 6, and objective 4 is examined by comparing explanatory ability of model 9 with that of model 6. Objective5 is examined by comparing explanatory ability of model 10 with that of model 6.

$MVE_{it} = a_0 + a_1 * AEVA + a_2 * CEVA + a_3 * RONW + a_4 * ROCE_1 + a_4 * FCF + a_5 * Dividend + a_6 * PBIDTM + a_7 * PATM + a_8 * CR + e_{it}$ ……..(Model-6)

$MVE_{it} = e_0 + e_1 * RONW + e_2 * ROCE_1 + e_3 * FCF + e_5 * PBIDTM + e_6 * PATM + e_7 * CR + e_8 * FCF + e_{it}$……. (Model-7)

$MVE_{it} = f_0 + f_1 * RONW + f_2 * ROCE_1 + f_3 * PBIDTM + f_4 * PATM + f_5 * CR + f_6 * AEVA + f_7 * CEVA + f_8 * Dividend + e_{it}$ ……(Model-8)

$MVE_{it} = g_0 + g_1 * AEVA + g_2 * CEVA + g_3 * Dividend + g_4 * RONW + g_5 * ROCE_1 + g_6 * PBIDTM + g_7 * PATM + g_8 * CR + e_{it}$ …….. (Model-9)

$MVE_{it} = h_0 + h_1 * AEVA + h_2 * CEVA + h_3 * Dividend + h_4 * FCF + e_{it}$ …….(Model-10)

5. EMPIRICAL ANALYSISAND RESULT DISCUSSION:

5.1 *Describing the Results of Descriptive Statistics:*

Table 1 represents the summary of descriptive statistics of market value of equity as dependent variable and nine independent variables. It is evident from the below table that except accrual EVA(normally, used by most of prior researchers) all the performance measures have positive mean value. It is observed that after market value of equity, free cash flow and dividend that are maintain higher mean value compared to other performance measures. Mean value of cash EVA is positive, whereas mean value of accrual EVA is negative. It denotes that most of the companies considered in this study are not able to make enough return to cover the cost of their capital on accrual basis,whereasthe companies can make enough return to cover cost of capital on cash basis. Negative minimum value of accrual EVA and cash EVA denotes in long run companies don't able to make more return than their cost of capital.

Table: 1 Description of Statistics of EVA and Traditional Measures

	Observation	Mean	Standard Deviation	Min	Max
Accrual EVA	370	-139.80	2557.84	-23108.88	12197.97
Cash EVA	370	599.84	2691.81	-13153.67	14365.78
FCF	370	1634.80	5971.21	-33945.34	36986.79
CR	370	2.85	3.07	0.30	26.08
ROCE	370	27.06	25.53	-31.53	235.36
RONW	370	24.94	22.20	-37.23	195.42
PBIDTM	370	25.34	18.91	0.27	99.93
PATM	370	17.46	81.10	-96.59	1559.44
Dividend	370	704.023	1359.97	0.00	11646.16
MVE	370	42194.49	59550.85	167.79	340274.29

Note. 1 FCF stands for free cash flow, ROCE is for return on capital employed, RONW is for return on net worth, PBIDTM is for profit before interest, depreciation, tax margin, PATM denotes profit after tax margin, MVE is for market value of equity.

5.2. Describing the Results of Pair wise Correlation of the Variables:

Table 2 explains about the pair-wise correlations between dependent-independent and independent- independent variables. We observe that ROCE, RONW and PATM are the independent variables negatively correlated with market value of equity.Most of the independent variables maintain positive correlation with other independent variables except current ratio. The sequence followed by independent variables are Dividend (0. 713)> FCF(0.43)> CEVA(0.428). Thus, it clarifies that EVA does not outperform all the traditional periodic performance measures. It rejects the claim of EVA advocates that EVA outperform all the accounting measures in explaining up and down trend of market value of equity.

Table 2: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
MVE	1									
AEVA	0.02	1								
CEVA	0.43**	0.77**	1							
FCF	0.43**	0.3**	0.51**	1						
CR	0.01	-0.11*	-.19**	0.08	1					
ROCE	-0.03	0.43	0.32	0.06	-0.13	1				
RONW	-0.08	0.43**	0.31**	0.05	-.15**	.93**	1			
PBIDTM	0.12*	0.19**	0.18**	0.07	-0.07	0.05	0.10*	1		
PATM	-0.01	0.29**	0.26**	0.12*	0.00	.45**	0.43**	0.17**	1	
Dividend	0.71**	0.15**	0.55**	0.52	-0.05	0.04	0.00	0.14**	0.01	1

Note:2 MVE: market value of equity, AEVA: EVA is determined on accrual basis, CEVA: EVA is determined on cash basis, FCF: free cash flow, CR: current ratio, ROCE: Return on capital employed, RONW: return on net worth, PBIDTM: profit before interest, depreciation, tax margin, PATM: profit after tax margin, DVDN: dividend. The cut-off point of significance is 5%. In the above table, '*' denotes the correlation is significant at 5% level, '**'denotes the correlation is significant at 1% level.

5.3. Describing the Results of Relative Information Content Analyses:

Table 3 reports the explanatory ability of 9 independent variables. It reports coordinate coefficient, adjusted coordinate coefficient, F-statistics, p- value. It is observed that dividend explains 52.4%, EVA explains 42.7%, FCF explains 21.5%, and other accounting measures explain only 3.1% variance of market value of equity. Accrual EVA is negatively associated with market value of equity, whereas cash EVA is positively associated with market value of equity. F-statistics denotes that all the independent variables except current ratio maintain significant association with market value of equity at the level less than 0.01 as it is highest (398.31) between dividend and market value of equity, 138.46 between EVA and market value of equity, 100.135 between FCF and market value of equity. The empirical results of relative study fails to support the hypothesis H1A that explanatory ability of EVA is superior to all the traditional measures. The explanatory ability dividend is the highest among all the variables. The summary result of table 4 is dividend (52.4%)> EVA (42.7%)>FCF (21.5%)>Other Accounting Measures (3.1%) which is consistent with the result of table 2.

Table 3. Relative Study Conducted on EVA and Traditional Measures

	Model 1	Model 2	Model 3	Model 4
F-statistics	138.46	398.31	100.135	3.34
p-value	0.00	0.00	0.00	0.006
R^2	43%	52.5%	21.8%	4.5%
Adjust. R^2	42.7%	52.4%	21.5%	3.15

	EVA-Model 1		Traditional Measures: Model4				
	AEVA	CEVA	CR	ROCE	RONW	PBIDTM	PATM
Coefficient	-18.36	23.01	2.43	962.41	-1273.25	453.56	-16.84
t- Value	-12.61	16.63	0.071	2.87	-3.324	2.7	-0.391
p-Value	2.518	2.518	0.943	0.004	0.001	0.007	0.696
VIF Value	0.000	0.000	1.037	7.7615	7.615	1.058	1.312

Note:3 EVA that includes AEVA and CEVA.AEVA denotes EVA determined on accrual basis and CEVA denotes EVA on cash basis. CR stands for current ratio, ROCEstandsforreturn on capital employed, RONW stands for return on net worth, PBIDTM stands for profit before interest, depreciation, and tax margin and PATM stands for profit after tax margin. VIF factors of model 1 and model 4 signal the absence of multicollinearity.

5.4. Describing the Results of Incremental Information Content Analyses:

Table 4 indicates that accrual EVA, cash EVA, Free Cash Flow and dividend maintain significant association with market value of equity at the level less than 1%, whereas current ratio(CR), PBIDTM, PATM do not have significant association with market value of equity. All the independent variables (AEVA,CEVA,FCF,CR,ROCE,RONW,PBIDTM, PATM and Dividend)explain overall 58.2% variance of market value of equity. F value indicates that association of independent variables is significant at the level less than 1%. Variance of Inflation Factors (VIF) indicatethe absence of multicollinearity among the variables.

Model 7of table 5 which has all the variables except cash and accrual EVAs, and it indicates that all the accounting measures together explain 54.1% variance of market value of equity. F-value indicates that variables of model 7together maintain significant relation at the level less than 1%. Durbin Watson ratio indicate the mild presence of autocorrelation among the variables. The results of model 6 and model 7 indicate that cash and accrual EVA increase 4.1% the explanatory ability beyond that is provided by rest of the independent variables which is significant.

Model 9 of table 6 which has all the variables except FCF indicates that all the independent variables together explain 56.8% variance of market value of equity. F-value indicates that variables of model 9 together maintain significance at the level less than 1%. Durbin Watson ratio indicate the mild presence of autocorrelation among the variables. The results of model 6 and model 9 indicate that FCF increases the explanatory ability by 1.4% (marginal) beyond that is provided by rest of the independent variables.

Model 8 of table 7which has all the variables except dividend indicates that all the independent variables together of the model explains 49.1% variance of market value of equity. F-

value indicates that variables of model 8 together maintain significant relation at the level less than 1%. Durbin Watson ratio indicate the mild presence of autocorrelation among the variables. The results of model 6 and model 8 indicate that dividend increases 9.1% the explanatory ability beyond that is provided by rest of the independent variables.

Model 10 of table 8 which has all the variables except CR, ROCE, RONW, PBIDTM, PATM indicate that the independent variables together explain 56.1% variance of market value of equity. F-value indicates that variables of model 10together is significant at the level less than 1%. Durbin Watson ratio indicate the mild presence of autocorrelation among the variables. The results of model 6 and model 10 indicate that cash EVA adds the explanatory ability 2.1% beyond that is provided by rest of the independent variables.

Table 4:Incremental Information Analysis Conducted on EVA and Traditional Measures

R^2=0.593 or 59.3%, adjstd. R^2=0.582 or 58.2%, F value=56.92, P=0.000				
	B	**t**	**p**	**VIF**
AEVA	-9.48	-5.99	0.000	3.78
CEVA	9.56	5.336	0.000	5.47
FCF	1.17	2.757	0.006	1.594
CR	1259.3	1.804	0.072	1.132
ROCE	512.74	2.289	0.023	8.039
RONW	-626.117	-2.460	0.014	7.796
PBIDTM	193.755	1.719	0.087	1.108
PATM	-23.95	-0.827	0.409	1.376
Dividend	20.30	8.942	0.000	2.363

Table 5: Incremental Analysis Conducted on Traditional Measures

R^2=0.550 or 55%, adjstd. R^2=0.541 or 54.1%, F value=61.85, P=0.000				
	B	**t**	**p**	**VIF**
FCF	1.318	3.144	0.002	1.415
CR	527.14	0.745	0.457	1.058
ROCE	397.94	1.706	0.089	7.933
RONW	-648.94	-2.436	0.015	7.779
PBIDTM	109.836	0.94	0.348	1.084
PATM	-8.028	-0.268	0.789	1.335
Dividend	28.023	15.1	0.000	1.438

Table 6: Incremental Analysis Conducted on EVA and Traditional Measures except Dividend

R^2=0.502 or 50.2%, adjstd. R^2=0.491 or 49.1%, F value=45.482, P=0.000				
	B	**t**	**p**	**VIF**
AEVA	19.97	-11.513	0.000	2.94
CEVA	19.96	13.06	0.000	3.463
FCF	2.09	4.651	0.000	1.476
CR	1623.28	2.124	0.034	1.128
ROCE	799.21	3.32	0.001	7.722
RONW	-900.88	-3.284	0.001	7.579
PBIDTM	357.188	2.93	0.004	1.086
PATM	-66.107	-2.101	0.036	1.331

Table 7: Incremental Analysis Conducted on EVA and Traditional Measuresexcept FCF

R^2=0.577 or 57.7%, adjstd. R^2=0.568 or 56.8%, F value=61.53, P=0.000				
	B	**t**	**p**	**VIF**
AEVA	-10.347	-11.513	0.000	2.94
CEVA	11.675	13.06	0.000	3.463
Dividend	20.755	9.455	0.000	1.476
CR	1571.796	2.267	0.024	1.093
ROCE	482.184	2.156	0.032	7.843
RONW	-614.209	-2.414	0.016	7.676
PBIDTM	194.789	1.715	0.087	1.11
PATM	-21.323	-0.727	0.468	1.36

Table 8: Incremental Analysis Conducted on EVA, Dividend and FCF with MVE

R^2=0.577 or 57.7%, adjstd. R^2=0.565 or 56.5%, F value=120.89, P=0.000				
	B	**t**	**p**	**VIF**
AEVA	-9.858	-6.558	0.000	3.537
CEVA	9.634	5.598	0.000	5.134
Dividend	20.744	9.329	0.000	2.188
FCF	1.176	2.791	0.006	1.514

Note:4 all the variables of model 6, model 7, model 8, model 9, and model 10 of table 4 are significant at less than 1% level. VIF factors of variables of each of the models indicate the absence of multicollinearity and heteroscedasticity among the variables.

7. OVERALL DISCUSSION:

EVA has gained its popularity in India. Companies like Infosys Technologies, BPL, HUL, NIIT, TCS, Godrej consumers product limited, Ranbaxy Laboratories Ltd. and Samtel India Limited report EVA in the financial statement. One major reason for EVA's sudden popularity is that it appears to have an impressive army of corporate sponsors including such giants as AT&T and Coca-Cola, and executives of these companies have expressed their satisfaction. EVA proponents strongly claim that EVA influences up and down trend of stock price. There are large number of studies conducted on EVA to evaluate whether EVA or accounting measures maintain stronger association with market value of equity. The results of all the prior studies are mixed and controversial. The growing popularity and the confusing results of prior studies are the rationales of conducting this study.Further, in-conclusive results of prior studies are the reason for which EVA has been adopted by some Indian companies EVA not by all.With the objective finding whether it is worth for Indian companies to implement EVA as performance measure, this study examined and the results reported thatdividend explains 52.4% variance of market value of equity which is the highest among all the periodic performance measures and incremental analysis reconfirms that dividend increases the explanatory ability by 9.1%(highest) beyond that is provided by all the other periodic performance measures. Further, relative analysis reveals that EVA explains 42.7% variance of market value of equity which is next to dividend and incremental analysis reconfirms the result of relative analysis and reports that EVA increases the explanatory ability by 4.1% that is provided by traditional

measures in explaining market value of equity. Free cash flow explains 21.5% variance of market value of equity and incremental analysis indicates that free cash flow (FCF) increases the explanatory by 1.4% (which is marginal) beyond that is provided by EVA and other traditional measures. Thus, explanatory ability of dividend is the highest, while explanatory ability of EVA is higher than the rest of the traditional measures. Even though dividend maintains highest relation, it cannot measure financial performance of company with respect to market that EVA can do. EVA number itself indicates the performance of specific company with respect market over a specific period of time.

Further, the result of this study reports that explanatory ability of EVA is higher than that of free cash flow (FCF). Table 2 indicates that EVA determined under accrual basis is poorly associated with market value of equity and EVA determined under cash basis is 42.8% correlated with market value of equity and explains 18.32% variance of market value of equity. From table 3, it is indicated that combination of both accrual and cash EVA explain 42.7% variance of market value of equity. This study indicates that EVA determined under cash and accrual basis maintains stronger association with market value of equity and also increases explanatory ability significantly beyond that is provided by all the accounting measures including dividend.

8. CONCLUSION:

This study attempts to findwhether it will be beneficial for Indian companies to implement EVA as performance measure. It examines efficiency of EVA (determined on accrual and cash basis) and traditional measures like dividend, free cash flow(FCF), current ratio(CR), return on equity capital(ROE), return on net worth (RONW), profit before interest, depreciation and tax margin(PBIDTM), and profit after tax margin (PATM). The relative analysis reveals that EVA maintains strong association with market value of equity compared to all the traditional measures except dividend, whereas incremental analysis reports that EVA increases the explanatory ability beyond that is provided by all the traditional measures including dividend. Thus, the empirical results of this study suggest to implement EVAas performance measure determined on both accrual and cash basis by Indian companies even though the results of this study don't support the claim of EVA proponents that EVA is absolute measure.EVA can help the organization to better survive in the highly competitive environment as it indicates the financial performance of specific company with respect to market and maintains strong association with market value of equity.

In the process of examining performance of EVA and comparing its performance with traditional measures, this study adds to the existing literature of EVA. While suggesting to use

accrual and cash EVA at the same time, this study opens new avenue for academicians and researchers to conduct further study.

REFERENCE:

1. Otley D. Performance Management: A Framework for Management Control Systems Research. Mgt Acct Res.1999;10(4): 363-382
2. Ittner CD, Larcker FD. Innovation in Performance Measurement: Trends and Research Implications. Jour. of Mgt. Acct Res. 1998; 10(2): 205-238**.**
3. StewartGB. The Quest for Value: A Guide for Senior Managers. First Ed. New York: Harper Business; 1991.
4. Chen S, Dodd JL. Economic value added (EVA™): An empirical examination of a new corporate performance measure. Jour. of Mangrl. Issues.1997; 318–333
5. Miller M, Modigliani F.Dividend Policy, Growth and the Valuation of Shares. Jour. of Bus. 1961; 34(4): 411-433.
6. StewartGB. EVA: Fact and Fantasy. Jour. of Appld. Corp. Fin. 1994; 7(2): 71-84.
7. O' Byrne SF. EVA and Market Value. Jour. of Appld Corp. Fin. 1996; 9(1): 116-126.
8. Biddle GC, Bowen RM, Wallace JS. Does EVA Beat Earnings? Evidence on Association with Stock Returns and Firm Values. Jour. of Acct and Eco. 1997; 24(3): 301-336.
9. BanerjeeA. Economic Value Added (EVA): A Better Performance Measure. The MgtAcctnt. 1997; 886-888.
10. Worthington AC, WestT. Australian Evidence Concerning the Information Content of Economic Value-Added. Australian Jour. of Mgt. 2004; 29(2): 201-224.
11. Ahmed H. Impact of Firms Earnings and Economic Value Added on the Market Share Value: An Empirical Study on the Islamic Banks in Bangladesh. Global Jour. of Mgt and Bus. Res. 2015; 15(2).
12. Almomani MA. The Ability of Traditional and Modern Performance Indicators in Interpreting the Phenomenon of Earnings Management: Evidence Manufacturing Firms in Amman Stock Exchange. Asian Jour. of Fin. and Acctg.2016;8(1): 77-99.
13. Gounder GC, Venkateshwarlu M. Shareholder Value Creation: An Empirical Analysis of Indian Banking Sector. Acctg and Fin. Research. 2017; 6(1).
14. Gupta VK, Sikarwar E. Value Creation of EVA and Traditional Accounting Measures. Indian Evidence. Int Jour. of Prod.andPerf. Mgt. 2016; 65(4): 436-459.13.
15. Altaf N. Economic Value Added OR Earnings: What Explains Market Value in Indian Firms? Future Bus. Journal 2016; 2:152-166,

16. Anne MA,Roger PB, Samuel CW. Economic Value Added Adjustments: Much to Do about Nothing. A Paper prestd at the Midwest Fin. Assoc. Meetings.March, 2004; 18-20.
17. Easton PD, Harris TS, OhlsonJ. Aggregate Accounting Earnings Can Explain Most Security Returns: The Case of Long Return Intervals. Jour. of Acctg and Eco.1992;15(2/3):119-142.
18. Kramer JK,Pushner G. An Empirical Analysis of Economic Value Added as a Proxy for Market Value Added.Finl.Pract.and Edu.1997;7(1):41-49.
19. Kumar S, SharmaA. Association of EVA and Accounting Earnings with Market Value: Evidence from India. Asia Pacific Jour. of Bus. Admin.2011; 3:83-96.
20. Madan B,Shaikh MJ. Economic Value Added and Shareholders' Wealth Creation: The Portrait of a Developing Asian Country. Int. Jour.of Mangrl.&Fincl.Acctg. 2013; 5(2):107-137.