

**GLOBAL BUSINESS AND TECHNOLOGY
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**MAPPING THE GLOBAL FUTURE: EVOLUTION
THROUGH INNOVATION AND EXCELLENCE**

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AN EMPIRICAL ANALYSIS OF SHAREHOLDER VALUE CREATION AS A PROXY FOR MEASURING CORPORATE PERFORMANCE

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ABSTRACT

Empirical research finds that Shareholder Value Creation represented by Pablo Fernandez Model (PFM) and EVATM is a better proxy of Corporate Performance than traditional accounting measures such as NOPAT, RoA, RoC and NPAT on several parameters discussed in the paper. These models reflect the value created for the shareholders by using variables that are closer to market price. The value is added only when the final price is above the cost of capital, which is the driver of all the corporate activity even in India, which is good example of Weak form of Efficiency with a hint of Semi-Strong Efficiency.

INTRODUCTION

Globalisation has brought in a paradigm shift in the management of organisations and measurement of the performance. India witnessed the highest increase of corporate form of business since 1991. The number of corporate form of business organisations in India increased 10 folds from 1991 till 2004 (Bhargava, 2005). This threw a new challenge in the form of competition for capital in a fund deficient economy like India. The Board of Directors, as agents of shareholders, had to not only add value to the wealth of shareholders but also prove their mettle convincingly to them. Hence, the issue of finding suitable measure of wealth gained significance. Traditionally, the academicians and analysts depended on the Historical Accounting measures like Net Profit after Tax (NPAT), Return on investment (RoI), Return on Equity (RoE), Operating Profit after Tax (OPAT), Return on Assets (RoA), Return on Networth (RoNW), Return on Capital (RoC), Earnings Per Share (EPS), etc. The use of the above traditional accounting tools of measuring corporate performance started getting questioned on various counts. “*They can be used for past analysis but not for future decision making*” said Rappaport in 1995. Consequently, a lot of new measures that the international business community were using started to gain acceptance in India. Economic Value Added (EVA), which is a registered trademark of Stern, Stewart & Co., was one such technique that gained recognition in the Indian Corporate world, as it was present in Annual Reports of all NIFTY (National Stock Exchange Index for Fifty companies) companies for the financial year ending 31st March, 2011.

Academic research moved on to another measure of Corporate Performance by critique of certain parameters used in EVA. Models like the Pablo Fernandez Model (PFM), with Shareholder Value calculations based on market value, were propounded in the West as they were closer to reality.

With respect to the above developments, this paper seeks to ascertain the applicability and the suitability of these models to Indian Financial Markets, which, compared to the developed nations, may at best be in growing stages of maturity.

LITERATURE REVIEW

Hawley (1886) was the one of the first to list out methods of measuring business performance. He suggested that Profit after Tax was a good method to measure corporate efficiency but can get biased due to loading of non operating incomes and expenses. He, thus, professed the concept of Net Operating Profit after Tax to be a better measure than mere Profit after Tax. Other accounting measures such as Return on Asset, Return on Net Worth,

and Return on Capital Employed, etc. were being used with reference to the concepts of profit as well as operating profit to reflect corporate performance.

The ratios and percentages were also used with these concepts like Net Profit Margin, Return on Net Worth, Return on Capital Employed, etc.

It was the economist Alfred Marshall in 1890, who first spoke about the notion of economic profit, in terms of the real profit that a company makes, when it covers, besides the various operating costs, the cost of its invested capital.

The traditional methods are criticised because they only consider cost on Debt Capital while calculating returns but do not consider cost of Share Capital - Equity & Preference- as they are a part of appropriation and are not debited to Profit & Loss Account. With corporate form of business organisation growing in number, Cost of Equity cannot be ignored (Tully, 1994).

Thus, under the traditional approach two companies that have the same ROE would be considered as equally successful, whereas under the Shareholder Value Creation (SVC) approach, the same conclusion could not be reached if these two firms had different cost of capital, in other words if their economic profit or residual income was different (Kyriazism and Anastassis, 2007).

EVATM - Economic Value Added

The conventional measures also concentrated on the short term objective of Profit Maximisation. This hindered the growth of the company as the decisions were all aimed at the short term goal. Stern and Stewart modified the concept of Residual Profit as professed by Alfred Marshall and propagated a new measure of corporate efficiency namely Economic Value Added (EVA) in 1991. They annually publish EVA of 1000 US based companies. EVA is defined as an excess of Operating Profit after Tax over Cost of Capital.

EVATM or Economic Value Added is excess of Net Operating Profit after Taxes over the Cost of Capital. In equation form:

$$EVA = NOPAT - (WACC \times CE) \quad (1)$$

Where NOPAT is Net Profit after Tax, WACC is Weighted Average Cost of Capital and CE is Capital Employed. WACC is calculated as cost of Debt and Share Capital with respect to Total Debt, Total Preference Capital and Market Value of Equity Capital. The costs are weighted as per the proportion in the Capital Structure.

$$WACC = \frac{K_d(1-T)D}{V} + \frac{K_eE}{V} + \frac{K_pP}{V} \quad (2)$$

Where,

1. WACC = Weighted Average Cost of Capital;
2. K_d = Cost of Debt (Coupon Rate);
3. T = Corporate Tax Rate;
4. V = Total Debt + Total Preference Share Capital + Market Value of Equity Capital (D+MVE+P);
5. D = Total Debt Capital;
6. K_e = Cost of Equity calculated using CAPM model;
7. E = Market Value of Equity Capital;
8. K_p = Cost of Preference Capital (Coupon Dividend)
9. P = Preference Capital

Cost of Equity (K_e) is calculated using Capital Asset Pricing Model (CAPM) given below:

$$K_e = r_f + \beta(r_m - r_f) \quad (3)$$

Where,

1. K_e = Cost of Equity;
2. r_f = Risk Free Rate of Return (using Interest Rate on 90 days T-Bills);
3. β = Beta Coefficient;
4. r_m = Market Return (Using NIFTY as benchmark index)

Stern & Stewart recommend 165 manipulations while calculating NOPAT & Capital Employed. Not all adopters of EVA method use all the manipulations. The adoptions are from 5 to 35 in regular course of working (Weaver, 2001). In this paper, operating profits before Interest & Deferred Tax but after Income Tax & Fringe Benefit Tax (FBT) is used as NOPAT.

Arguments for EVA

Tham and Pareza (2004) supported the use of EVA by questioning that while choosing a project, if the managers concentrated on the Cash Flows as discounted by the cost of capital, then why the same managers ignored the cost of capital while measuring corporate performance. Chong et al (2008) found that EVA could be used to manage portfolios, as the EVA-based stock portfolios were found to be similar to the S&P 500 Index, yet produced positive alphas across subsamples, an indication that EVA contained information beneficial to increasing shareholder wealth, even in bear markets. On closer examination of the EVA-based stock portfolios, it was suggested that in times of market upswings, one should construct a portfolio based on lower EVA-ranked stocks, while switching to higher EVA-ranked stocks during market downturns.

Many studies such as Tsuji (2006), Stern and Stewart (1994), Biddle, Bowen, and Wallace (1997), Farslo, Degler, Degner (2000) have investigated EVA's correlation with excess returns, back-testing it against the underlying companies' actual wealth creation, as evidenced by subsequent stock price increases, or comparing it to market value added (MVA).

Arguments against EVA

One major critic of the EVA is its methodology. Horngren, et al (1997) caution that more than 160 adjustments were expected to calculate EVA, which made the process cumbersome and tedious. The researchers such as Kramer and Pushner (1997) concluded that market value added was not predicted in a significant way by EVA. Latin American scientist Pablo Fernandez (2002), criticised EVA on the basis that it is a method based on the historical accounting and thus, cannot be used as a measure of value creation and corporate performance.

Merit of Market Value Added

Market Value Added (MVA) is calculated as Market Value of Equity Shares minus the Book Value of the Equity Shares (Kramer, 1997). Various authors like Kramer, Kyriazis and Anastassis (2007), Bacidore (1997), Ignacio Vélez-Pareja (2003), Weissenrieder (2004) have noted that the corporate performance and expected corporate performance must get reflected in the company's share price. Hence, they have used MVA as a measure to reflect the corporate performance. MVA is also considered to be a good measure following the Efficient Market Hypotheses (EMH) which states that all the available information is already reflected in the market price. The stakeholders, therefore, need a measure of corporate performance that would get reflected in the Market Value of the company. The concept of Shareholder Value Creation was first introduced in United State of America. This has resulted in a stronger US economy and better business environment (Tsuji, 2006). The background of this clearer focus on the maximization of corporate value as a central goal of management in USA is (i) activation of buying and selling of management rights such as by M&A, (ii) popularization of stocks for individual investors, and (iii) avoiding bankruptcy in pension plans(Tsuji, 2006). The creation of shareholder value leads not only to the more effective management of those corporations, but also to increases in labour productivity, job opportunities, and real per capita GDP (Copeland et al.2000).

MVA is thus, market-generated number calculated by subtracting the capital invested in a firm (C) from the sum (V) of the total market value of the firm's equity and the book value of its debt. It is calculated as:

$$MVA_t = V_t - C_t \quad (4)$$

PFM

Pablo Fernandez formulated a model in 2001, namely the Pablo Fernandez Model (PFM) where he calculates the Shareholder Value as excess of Shareholder Return (based on the market returns) over the cost of Equity. His model is as follows:

$$SVC = (r_{sh} - k_e) \times MV_t \quad (5)$$

Where

1. Shareholder Return

$$r_{sh} = SVA \div MV_{t-1} \quad (6)$$

- o Shareholder Value Added

$$SVA = \Delta MV + \sum_{t-1}^t DIV + \sum_{t-1}^t P - \sum_{t-1}^t OC - \sum_{t-1}^t Conv \quad (7)$$

Where,

1. $\Delta MV = MV_t - MV_{t-1}$ (8)
 - Where MV_t = Current Market Value &;
 - MV_{t-1} = Market Value 1 year back;
2. DIV = Dividends paid during the year. Also stock dividend;
3. P = Other payments to shareholders during the year like discount on par values, share buybacks
4. OC = Outlays for capital increases like issue of new shares, GDRs, etc.
5. Conv = Conversion of convertible debentures, creditors, etc to share capital
2. K_e = Cost of Equity as calculated by CAPM model given in eq. (3) above;
3. MV_t = Current Equity Market Value as explained in eq. (8) above.

RESEARCH QUESTION

Shareholder Value Creation, as measured by EVA (Stern and Stewart, 1991) and PFM (Pablo Fernandez 2001) have proved to have significant relationship with Market Value Added in developed countries like US and Europe. It has been proved by Vaidyanathan and Kumargali (2005) and Khan and Ikram (2004) that Indian Markets are different from the US and European markets in terms of Market Efficiency. Indian Markets namely NSE and BSE are good examples of Weak form of Efficiency with a little hint of Semi-Strong Efficiency. But in either case, the Indian Markets do not reflect all the publicly available information (Khan and Ikram, 2004). Hence, this research focuses on the question whether Shareholder Value Creation, as a representative of corporate performance measured by EVA and PFM, are appropriate reflections of market value added (MVA) in markets like India.

We shall, therefore, test the following null hypotheses:

H₀₁ = Shareholder Value Creation as measured by EVA does not significantly predict market value added in comparison to traditional accounting measures.

H₀₂ = Shareholder Value Creation as measured by PFM does not significantly predict market value added in comparison to traditional accounting measures.

RESEARCH METHODOLOGY

Sample

This study considers 50 NIFTY companies as on 31st March, 2009 for a period of 10 years from 1st April, 2000 to 31st March, 2010.

Data Source

The data is collected from NSE website, Reserve bank of India website, Securities Exchange Board of India website and Capitaline database. Traditional accounting measures are taken from Capitaline database and SVC measures such as EVA and PFM are computed using the above mentioned formulae.

Data Analysis

Factor Analysis and *Multiple Regression* are the statistical techniques used to analyse the data.

Independent Variables

The following traditional accounting and SVC measures are used as independent variables:

1. Traditional Accounting Measures:

Net Profit after Tax; Earnings per Share (EPS); NOPAT; Return on Capital Employed (RoCE); Profit before Interest Depreciation & Tax (PBIDT); Return on Networth (RoNW); Return on Equity (RoE);

2. Shareholder Value Creation Measures:

EVATM; PFM

Factor analysis is used to collate the above independent variables into various factors. These factors are then used for further analysis.

Dependent Variable

The dependent variable considered for the analysis is Market Value Added (MVA).

FINDINGS AND ANALYSIS

The results of Factor Analysis are shown in Table 1 below. Four factors emerged after factor analysis.

Table 1: Rotated component matrix^a

Particulars	Component			
	1	2	3	4
Net Profit After Tax (NPAT)	.979			
Operating Profit After Tax (OPAT)	.970			
Earnings Per Share (EPS)	.407			
Return on Net Worth (RoNW)		.993		
Return on Equity (RoE)		.993		
Profit Before Interest Depreciation and Tax (PBIDT)			.988	
Return on Capital Employed (RoCE)			.985	
Pablo Fernandez Model (PFM)				.834
Economic Value Added (EVA)				.637

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Factor 1 is representative of old school of thought where net profit and net operating profits reigned whereas Factor 2 and Factor 3 mainly represent groups showing return as compared to resources utilized. Factor 4 represents returns over cost of capital, and stands for SVC.

Multiple regression was then carried out to test the relationship with factors representing independent variables and the dependent variable, namely market value added. The results of Multiple Regression indicate a statistically significant R² with a value of .259. The R² value shown in Table 2 below shows that, all the factors together have a predicting power of .259 which, is an acceptable level in social science research.

Table 2: Model summary of all 4 factors with MVA as dependent variable

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.509 ^a	.259	.253	68681.01

a. Predictors: (Constant), REGR factor score 4 for analysis 1, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

Further scrutiny of the coefficients in Table 3 points out that, “Factor 4”, which comprises of the Shareholder Value Creation variables, has a high and statistically significant correlation with MVA. This shows that Shareholder Value Creation Measures have a better ability to explain the Market Value Added in comparison to any other measure of Corporate Efficiency.

Table 3: Correlation of factors

Model	Standardized Coefficients	
	Beta	Sig.
(Constant)	.079	.000
REGR factor score 1 for analysis 1	-.007	.056
REGR factor score 2 for analysis 1	-.012	.872
REGR factor score 3 for analysis 1	.503	.780
REGR factor score 4 for analysis 1	.079	.000

Traditional factors as represented by Factors 1, 2 and 3 do not have statistically significant relationship with MVA. Factor 4 was, therefore, individually regressed with MVA to reaffirm that Shareholder Value Creation

measures have a significant R^2 . Table 4 below shows the regression results of Factor 4 as independent variables and MVA as a dependent variable.

Table 4: Regression model summary of factor 4

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.503 ^a	.353	.251	68742.18

a. Predictors: (Constant), REGR factor score 4 for analysis 1

The results in Table 4 show a R^2 of .353 which can be considered a fairly high value. Hence, it can be concluded that the Shareholder Value Creation measures have a statistically significant predictability of Market Value Added. Having established thus, further analysis was carried out to ascertain which would be a better predictor of MVA between the two variables, EVA and PFM.

These two variables are, therefore, regressed independently with MVA. The results are as given below:

Table 5: Regression model summary of PFM

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.783 ^a	.613	.612	49466.16

a. Predictors: (Constant), PFM

PFM has a statistically significant R^2 . The predictability of MVA by PFM is very high which means it qualifies to be a good proxy for measuring corporate performance.

Regression model in Table 6 below demonstrates that EVA, too, has a good and significantly large R^2 which means that EVA, too, is a good proxy for measuring corporate performance.

Table 6: Regression model summary of EVA

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.135 ^a	.418	.016	78805.31

a. Predictors: (Constant), EVA

Between the two measures of SVC, PFM tends to have higher R^2 that makes it a better predictor of MVA in comparison to EVA and therefore, a superior representative of corporate performance.

Thus, H_{01} that Shareholder Value Creation as measured by EVA does not significantly predict market value added in comparison to traditional accounting measures is rejected and it is proved that SVC as measured by EVA does significantly predict MVA.

Similarly, H_{02} that Shareholder Value Creation as measured by PFM does not significantly predict market value added in comparison to traditional accounting measures is rejected and it is proved that SVC as measured by PFM does significantly predict MVA.

In comparison, it is also proven that the traditional accounting measures such as RoA, RoC, NOPAT & NPAT do not show significant relationship with MVA in Indian Markets.

CONCLUSION

It is thus, seen that Shareholder Value Creation as measured by EVA and PFM are appropriate tools to measure the corporate performance in Indian Markets as they are better predictors of MVA in comparison to traditional accounting methods.

MANAGERIAL IMPLICATIONS

It may be noted that EVA considers Net Operating Profit after Tax and WACC of business whereas PFM considers a Shareholder Value Added; a market based return, and only considers Cost of Equity. Hence, it may be seen that PFM, being Market based variable, is more suitable for Portfolio Managers or Strategic decisions and EVA being based on historical accounting, is more relevant to company's internal assessment purposes.

Shareholder Value Creation measures like EVA are also useful for the companies to pay honorarium to its Managers (who take strategic decisions like MD, CEO, CFO, etc). This is a usual practice in the West where companies like Coca-Cola, AT&T, etc use EVA to pay managerial compensation. There are empirical studies that show that when Managerial Compensation is related to the Shareholder Value Created, the performance of the managers improve (Riceman, Cahan and Lal, 2002).

This paper, thus, makes a case for the use of PFM and EVA as measure of performance, for better portrayal of corporate results in Indian markets. The companies in India could make it a regular practice to have Shareholder Value Review as a part of their Annual Report. This could lead to more informed shareholders, suitably empowered to take strategic decisions like mergers or enhancement of managerial packages.

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