STUDENT ARTICLES

Wealth Creation in Firms: EVA, MVA and Conventional Measures – In Selected Indian Companies

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The purpose of this study is to examine the superiority of Economic value added (EVA) over conventional accounting measures as a perfomance measure and to study which of these modern or conventional measures rightly captures its influence on a firm's market value. The present research analysis is performed on a sample of five companies selected from FMCG sector listed on NSE for a period of Nine years between the time periods 2003-2014. The present study is done using Panel Data Regression technique with EVA, Market Value added (MVA) and other Accounting measures to gauge both relative and incremental information content of these measures. The study reveals that the relative information content tests prove that conventional accounting measures are more closely associated with market value of the firm than EVA measure reflected in stock price. However, incremental information content tests suggest that EVA adds more explanatory power to its influence on market value of the firm than other conventional accounting measures.

Keywords: EVA, Relative and Incremental information content, Panel Data Regression, Fixed Effects Model, Random Effects Model, Hausman Test.

I. Introduction:

The primary objective of a corporate financial policy is to maximize shareholder wealth. The business continuity of a firm is purely based on its financial performance in terms of wealth creation. To analyze how effectively a firm is contributing value/wealth towards its stakeholders is important not only for the management of the firm but also for other users of financial information of Indian economy and capital markets, Investors or the general public who plan their investments and financial decisions in expectation of greater returns from it.

In order to judge financial health of a firm various performance measures are used. These measures indicate the contribution, a firm is making towards shareholder's wealth. The wealth of shareholder is measured in terms of the

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returns they receive on their respective investments, which reflects in market value of the firm. If shareholders are happy with the firm's financial performance they tend to invest more in that firm for securing greater returns on their investments. Thus the financial measure which is highly associated or which has greater influence on market value should be considered as a better financial performance measure, hence this study uses MVA as a proxy to market value of a firm.

This aspect of associating financial performance measure with shareholder wealth has been analyzed by several researchers in the past. Some of them say that there is no single measure that can explain conclusively the variability in shareholder wealth (Chen and Dodd, 1997) from the accounting measures like ROA, EPS and ROE as they were not reporting economic profit.

Around 90's many scholars have contributed further into this gap of finding a right measure to indicate a firm's contribution to shareholder's wealth and came up with many new performance measures based on Value creation. Couple of such measures is Economic Value Added (EVA) and Market Value Added (MVA) which were developed by Stern Stewart & co., USA. Stewart (1991) mentions that "the explanatory power of EVA is six times better than that of growth of EPS". Stewart (1994) also mentions that "EVA is almost 50% better than its closest account based competition measures (EPS, Cash flows, ROE and ROA) in explaining changes in shareholder wealth".

Since then many empirical studies were done to explain the hypothesis given by Stern Stewart to check if EVA is better financial performance measure than existing conventional accounting measures. As can be seen from the results derived from these studies, there is mixed response on which measure gives definitive indication of a best financial performance measure. Some researchers (Lehn & Makhija, 1996; Finnegan, 1991; Worthington and West 2004; Shil N.C, 2009; Vijayakumar A, 2011; Ramana Reddy & Rajesh, 2011) found that EVA is positively correlated to stock returns and that EVA is one of the good financial measures that can be used along with other conventional measures to study the financial performance of a company in creating wealth to its shareholders.

On the flip side, some researchers failed to find any support to Stern Stewart's hypothesis (Biddle et al., 1997; Maditions et al., 2006). The review of existing literature till date shows that many number of empirical studies were done but only very few companies In India started using this concept. Since different sectors and Industries have different organizational, environmental set up, the in-depth findings of this FMCG sector could give a heads up on this sectorial performance and an attempt is made to check if these findings can be generalized on other companies listed on stock exchange.

In this study MVA is used as a proxy for market value of the firm. The previous studies have examined relationship of financial performance measures with conventional accounting measures in various other Industries or on individual firms of a sector and no in depth study in FMCG sector is seen. The current study seeks to fill the above mentioned research gap by examining the influence of EVA and conventional accounting measures like ROE, ROA, ROS, ROCE and EPS against market value of a firm in Indian FMCG sector.

For this purpose a panel data regression test was conducted for examining the influence of these two measures (modern and conventional) on stock price by assessing the relative and incremental information content of EVA and conventional accounting measures.

This paper is arranged into various sections as follows. The following section describes the literature review and the next coming section deals with research question and hypothesis and is finally followed by data and methodology. The paper concludes with results, discussion and conclusion sections.

II. Literature Review:

Stern (1991) examined 1000 companies and picked 613 US listed companies and concluded that the key operating measure of corporate performance is not popular accounting measures such as earnings, earnings growth, dividends, dividend growth, ROE, or even cash flows but in fact it is EVA. He showed that the explanatory power of EVA was found to be six times better than that of growth of EPS.

Lehn and Makhija (1996) in their study of 241 US listed companies over two periods (1987-1988 and 1992-1993) observed that both measures of firms performance EVA and MVA correlate positively with stock returns and that the correlation is slightly better with EVA than with other traditional measures ROA, ROE, etc.

Banerjee.A, (1997) has conducted an empirical research to find the superiority of EVA over other traditional financial performance measure. Ten industries have been chosen and each industry is represented by four/five companies. ROI and EVA have been calculated for sample companies and a comparison of both has been undertaken, showing the superiority of EVA over ROI. Indian companies are gradually recognizing the importance of EVA is what he opined.

Pattanayak, J.K.,Mukherjee, K. (1998) in their study "Adding Value to Money" discussed that there is a new measure to asses corporate income based on economic concept which is a superior technique in organizations NOPAT covering its WACC and generating Value to its owners apart from the existing traditional methods to measure corporate income.

Hall & Brummer (1999) compared various performance measures with EVA and MVA and concluded that high relationship exists between them. He suggested that if a firm wishes to increase its shareholder's wealth it is necessary for it to focus on its EVA.

Karam Pal Singh and Mahesh Garg (2004) examined the disclosure of EVA in Indian corporate. The study revealed that out of 50 companies, only 32 companies have generated positive EVA and 18 companies have destroyed their shareholders' wealth in 1998.

N.Sakthivel and Dr.C.Arjunan (2009) conducted a study on "Value creation in Indian paper industry: An Analysis". This study clearly revealed that there is positive relationship between EVA and MVA in paper industry. In the study they concluded that the value creation based on EVA happened on a year to year basis in respect of companies of the paper industry.

Nikhil Chandra Shil (2009) submitted a research paper enlisting the advantages and disadvantages of EVA and concluded that EVA is one of good financial measures if used along with other conventional measures in vogue.

Dr. N. Sakthivel (2011) conducted a study on "Shareholders' Value in Indian Pharmaceutical Industry: An Analysis". It is concluded that companies under pharmaceutical industry has succeeded to meet public expectations in terms of shareholders' value creation through EVA either by increasing Operating Income from assets in place through reducing cost of production or increasing sales, or reducing cost of capital by changing the financing mix in capital structure.

Madan Lal Bhasin (2013) studiedEVA along with conventional measures in leading five companies for a period of five years using trend and regression analysis, ANOVA and concluded that Stewart's claim that EVA is superior to other conventional measures couldn't be proved with evidence. But he opined that EVA is gaining popularity and is being used by the companies as a management tool for internal governance and control measures and made suggestions to SEBI that EVA statements should be made part of audited annual reports for more transparency and better disclosure practices.

III. Research Methodology:

3.1 Sample Selection:

The research study was performed for a sample of five companies from FMCG sector listed on NSE through CNX FMCG Indices, for a period of Nine years between the periods of 2003-2014 to test the financial performance of these companies and to measure which of the available measures, modern and conventional measures, is a superior financial performance measure.

3.2 Variables Used in the Study:

The main objective of the study is to examine if EVA can be taken as a superior measure compared to other conventional measures in assessing the financial performance of the firm through its wealth creation objective and to study the influence of EVA and other conventional accounting measures on market value of the firm. To attain this, the independent variable is taken as MVA of the firm and dependent variables are EVA ROE, ROCE, EPS, ROA and ROS.

EVA is a surplus that is left after making necessary charge for the capital employed from various sources in the business of the firm. It can be calculated in the following way,

EVA = NOPAT – (WACC * CE).....(1)

Where,
NOPAT = Net operating Profit after Tax,
WACC = Weighted average cost of capital and
CE = Capital Employed.

Out of many adjustments that Stern Stewart suggesting while calculating EVA, only couple of adjustments were done in this study. While calculating NOPAT, interest expenses were added back to Pat (profit after Tax). As per Stern Stewart's suggestion, cost of equity is calculated using CAPM method,

$Rj = Rf + \beta\ (Rm\ "\ Rf)$.Where,

Rj = Expected Return on Scrip j,
Rf = Risk free rate of return, (taken from the annual reports of the firms)
β = Beta representing the volatility of scrip j against market volatility, (taking Covariance and Variance of the scrip's closing price)
Rm = Expected stock market return. (Rm calculated on annual return of FMCG Index).

Return on Equity (ROE = PAT/Net Worth. where, Net Worth = Capital+ Reserves). ROE is the amount of net income returned of shareholders equity. It is the profit a company generates with the money shareholders have invested. It is sometimes it is also referred as RONW.

Return on Capital Employed (ROCE = Net Income / Capital Employed) is the efficiency with which capital is employed (Total Assets – Current Liabilities).

Return on Assets (ROA= Net Income / NET ASSETS), is an accounting measure that tells us how efficient management is at using its assets to generate earnings. It is sometimes referred as ROI (Return on Investment) also.

Earnings per Share (EPS= PAT/Average number of outstanding common shares), gives us details of how a company's profit is allocated to each outstanding common share.It is single importantaccounting measure to determine share price.

Return on Sales (ROS = EBIT/ SALES), is an accounting measure that shows company's operational efficiency and gives insight of how much profit is generated for every rupee of sales.

Increasing ROS is good and decreasing suggests financial troubles for the firm.

3.3 Research Question and Hypothesis:

This study aims to address the research question, whether EVA or the conventional accounting measures like ROE, ROCE, EPS, ROA and ROS rightly depicts the market value of the firm. Here, MVA is taken as proxy to market value of the firm.

This study follows the literature and comes up with following hypotheses,
H1: EVA has more relevant information than conventional traditional measures.
H2: EVA has more incremental information than conventional traditional measures.

To test the given hypotheses, panel univariate and multivariate regression methods are applied.

3.4 Model Description:

To get relative and incremental information of EVA, MVA and conventional accounting measures, panel data regression methods are employed.

The general equation of panel data regression is as follows,
$Yit = \alpha it + \beta Xit + \in it$ where i=1, 2,.....6 and t = 1,2,....10.

Where Yit is the dependent variable (stock price) for the firm i in the year t and Xit is the independent variable (EPS, ROE, ROS, ROA and ROCE) for the firm in the year t and°itis the error term.

The following univariate regression equations are used to test for the relative information of the various variables used in the study,

$Rit = \alpha + \beta ROEit + \varepsilon it$ (1)
$Rit = \alpha + \beta ROCEit + \varepsilon it$ (2)
$Rit = \alpha + \beta EPSit + \varepsilon it$ (3)
$Rit = \alpha + \beta ROSit + \varepsilon it$(4)
$Rit = \alpha + \beta ROAit + \varepsilon it$(5)
$Rit = \alpha + \beta MVAit + \varepsilon it$(6)
$Rit = \alpha + \beta EVAit + \varepsilon it$(7)

Where, Rit is Stock Price of firm i in the year t, and á, āare the coefficients of regressions and āitis the error term. Comparisons R-Square of regressions test results are made to determine which variable better explains the variation in the stock price and therefore has more relevant information content.

To test incremental information content EVA, MVA and other Accounting measures, the following multiple regression models are used

$$Rit = \alpha + \beta 1ROEit + \beta 2ROCEit + \beta 3EPSit + \beta 4ROSit + \beta 5ROAit + \varepsilon it \quad (8)$$

$$Rit = \alpha + \beta 1ROEit + \beta 2ROCEit + \beta 3EPSit + \beta 4ROSit + \beta 5ROAit + \beta 6MVAit + \varepsilon it \quad (9)$$

$$Rit = \alpha + \beta_1 ROEit + \beta 2ROCEit + \beta 3EPSit + \beta 4ROSit + \beta 5ROAit + \beta 6EVAit + \varepsilon it \quad (10)$$

The change in the value of R-Square from the regression models (8) to (9) indicates the incremental information content of MVA and change in the value of R-Square from the regression models (8) to (10) indicates the incremental information content of EVA.

3.5 Statistical Technique Used – Panel Regression Technique:

Fixed-effects (FE) model is used whenever we are interested in analysing the impact of variables that vary over timewithin an entity (Company). The rationale behind Random Effects (RE) model is that, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model.

The Hausman Test has been used to know which of the two models in Panel Data Regression is suitable for the analysis of testing relative and incremental information content of variables. Fixed and Random Effects models both have been used to measure the association of each variable to the stock price.

IV.Results and Discussion:

Descriptive Statistics:

The table 1 below shows the descriptive statistics which gives us the central value of a variable (Mean) and the spread of the data around that variable.Range is another statistical tool which gives us the difference between lowest to highest values in the variables used. Standard Deviation (SD) explains the volatility of the distribution. Skewness tells us if the distribution is normal or not. If Skewness is ZERO then the values are normally distributed. Kurtosis gives us the trends in the chart for the data points plotted on a graph. A high kurtosis value gives us a flat and even distribution with fat tails and a low kurtosis value gives us a peak distribution with skinny tails.

The mean value is highest for MVA (41.56125) is highest with highest standard deviation (72.721631), followed by EPS with highest mean value (8.14440) and standard deviation (4.85744). This tells us that these measures are highly unstable and are not adding value to the shareholders. Lowest Mean value is seen for ROS (0.14051) with least standard deviation (0.065638), preceded by ROCE with mean value (0.29481) and standard deviation (0.166947) which ispreceded by EVA with mean value (0.32874) and standard deviation (0.218065) which suggests that these firms have stable ROS, ROCE and EVA respectively, and overall they are adding value to the shareholders.

Table 1. **Descriptive Statistics of all variables used in the study**

	EVA	MVA	ROA	ROCE	EPS	ROE	ROS
Mean	0.3288	41.5613	0.3373	0.2948	8.1444	0.4638	0.1405
Median	0.2728	15.8460	0.3093	0.2924	6.9750	0.4040	0.1434
Maximum	1.0663	449.5395	0.9539	0.9539	20.8000	1.2289	0.2628
Minimum	0.0145	0.8588	0.0555	0.0555	1.0000	0.0457	0.0260
Std. Dev.	0.2181	72.7216	0.1638	0.1669	4.8574	0.2370	0.0656
Skewness	1.5562	3.9338	1.4914	1.6523	0.6593	0.8323	0.0190
Kurtosis	5.3203	21.3131	6.0299	6.8329	2.8021	3.7487	2.0545
Observations	50	50	50	50	50	50	50

4.1 Relative Information Test:

Table 2 and 3 (values extracted from tables A to J of Appendix) indicate the results of the relative information tests of performance based on fixed effects and random effects models respectively. Each column of the table shows the results of regression models (1 to 7).

Table 2. **Fixed Effects Model**

	EPS	ROE	ROCE	ROA	ROS	EVA	MVA
ALPHA	22.2151	78.8710	216.2635	-0.2816	1355.4060	208.2401	0.5155
T-ratio	4.6276	0.6698	1.3103	-0.0016	3.5691	1.6655	1.3624
BETA	76.0154	220.3639	193.1879	257.0388	66.4977	188.4843	235.5200
T-ratio	1.6742	3.6003	3.4634	4.0124	1.1311	3.8330	7.4884
R-SQUARE	0.3085	0.0093	0.0345	0.0000	0.2097	0.0546	0.0372
Significance	0.0000	0.5062	0.1963	0.9987	0.0008	0.1023	0.1794
t-stat	4.6276	0.6698	1.3103	-0.0016	3.5691	1.6655	1.3624

The table 2 models are based on regression equations (1) to (7) to check for relative information content of EVA and MVA along with other Accounting Measures. The Alpha values are coefficients which suggest how much increase in Y can be seen with every 1 unit of increase in Xin a regression

equation. The R-square values give us the amount of variance of Y explained by X in a regression equation. T-Values test the hypothesis that each coefficient is different from 0. To reject this, the T-value has to be higher than 1.96 at 95% confidence level, then it can be said that the variable has significant influence on the variable Y. The higher the t-value higher is the relevance of the variable tested.

The table 3 indicates the preference of fixed effects model over random effects model through the results of Hausman Testas seen from table 4. For all the models based on the regression equations, the Hausman Test indicates that the fixed effects model is appropriate. However, the values of EVA and EPS are significant from random effects model also. From these results it can be concluded that R-Square and t-statistic values of EPS is highest followed by ROS and then EVA. Also EPS is significant at 99% significance level followed by ROS and EVA. Therefore, it is evident that variations in stock price are more explained by EPS and ROS along with EVA and that EVA alone is not a superior measure to explain the variations in stock price. This leads us to accept the Null hypothesis (H0) that EVA does not have more relevant information content than traditional accounting measures.

Table 3. **Random Effects Model**

	EPS	ROE	ROCE	ROA	ROS	EVA	MVA
ALPHA	22.2886	217.9895	93.6657	30.3028	1537.7140	353.3068	0.2847
BETA	75.4169	155.8231	229.3276	246.7223	40.7721	140.8050	245.1105
Z-val	0.1000	0.1000	0.6290	0.8680	0.0010	0.0250	0.4520
Chi-Sq	15.2500	2.7100	0.2300	0.0300	12.0700	5.0000	0.5700
Significance	0.0001	0.0998	0.6291	0.8684	0.0005	0.0254	0.4515
R-Square	0.3085	0.0093	0.0344	0.0000	0.2099	0.0546	0.0372

Table 4. **Hausman Test**

	EPS	ROE	ROCE	ROA	ROS	EVA	MVA
	0.43032	-16.1049	-198.7732	207.934	-82.17	69.2502	0.03226

Fixed consistent under H0 and Ha; Random inconsistent under Ha; efficient under H0
H.Test H0: diff in coeff not systematic; Probability > 0.05 - SO use Fixed Effects Model

4.2 Incremental Information Test:

Table 5 presents the results for incremental information test. Model 1 and 2 represent the results from regression equation (5) and (6). Only fixed effects model has been used as it is more appropriate from the tests results of Hausman Test.As Fixed Effects Model is appropriate the Multiple Regression

equations 8,9 and 10 models 1, 2 and 3 respectively are tested as follows for checking incremental information content. The table 5shows the same.

The results from table 5 reveal that R-square value of traditional accounting measures if taken alone as per regression equation (8) is 38% and when EVA is included as per regression equation (10) with accounting measures there is an increase of 4% and for MVA there is a decrease of 1%. This increase in R-Square explains that there is a variation of 4% in stock price due to EVA. This leads us to accept the second hypothesis (H2) that EVA has more incremental information content than traditional accounting measures.

Table 5. **Fixed Effects Model**

	MODEL 1	MODEL 2	MODEL 3
Variables	Eq (8)	Eq (9)	Eq (10)
ALPHA	17.44287	10.5759	9.722686
EPS	13.02838	12.62052	16.20922
ROE	-76.64486	-92.29861	-240.9616
ROCE	35.73631	57.9128	124.49
ROA	21.13646	25.8772	-77.07112
ROS	1076.118	1176.561	738.8707
EVA	**	**	341.953
MVA	**	-0.1156816	**
R-SQ	0.3865	0.3767	**0.4233**
F-VAL	0.0586	0.1014	0.0578

V. Findings of the Study:

The study employs panel regression in order to test the relative and incremental information of EVA, MVA and other traditional Accounting measures. Based on the fixed effects model, the study finds evidence in support of the hypotheses that EVA has more incremental information than accounting measures and that EPS, ROS along with EVA together have more relevant information content in determining the variations in market value of the firm.

As per the original concept given by Stern Stewart there are 164 adjustments to be made to accounting values to derive the actual EVA figures. The current study has done couple of adjustments while calculating EVA and hence this can be one of the reasons as to why the relevant information of EVA is low or could not be justified as superior measure as compared to EPS and ROS. Also EVA values can be taken using the lag time period because the measures taken by a compan following EVA might not be in a position to reflects its value immediately at the end of the year, it can take time for that reflection based on te aea it was used or implemented. If this is adhered to, then the findings might be consistent with prior literature

that EVA is a better performance measure than traditional accounting measures. However, it can be noted that EVA is a superior measure compared to traditional accounting measures from the incremental information content point, concluding the fact that EVA (4%) explains better variation in market value compared to accounting measures.

VI. Limitations of the Study:

As per Stern Stewart in order to arrive at EVA values we need to make 164 adjustments to accounting values.This research study has taken only couple of adjustments and for some variables values are taken directly from the annual reports (EPS)which might be the reason for the relative information content tests failed to justify Stern Stewart's claim, though incremental information content did to an extent. Hence, it is a major limitation that has been noticed in the study and is an area open for further research without constraint of time. This study could also be further extended to NIFTY 50 or SENSEX 30 covering top traded companies or can be extended to all Sectorial Indices of NSE or BSE to monitor the performance of each industry or sector for longer time frames.

VII. Direction for Future Research:

The study could be further extended to other firms from Nifty 50 or Sensex 30. The calculation of EVA could be modified with respect to the adjustments as stipulated by Stern Stewart, as it is felt that these adjustments might have a significant impact on the test results which are being derived painstakingly, using various statistical techniques and tools.

Conclusion:

In the present era of globalization, the corporate-sector in India is gradually recognizing the importance of EVA as a result of which some Indian companies have started calculating EVA, making disclosures in their Annual Reports and also using EVA for different managerial purposes, like Infosys, HUL and Tata Steel. Although EVA and MVA have received considerable attention in recent years and are used by many prominent U.S. firms, there has been limited application of these modern performance measures in Indian scenario.

The study examines the superiority of the EVA to traditional accounting measures by examining the relative and incremental information of EVA and other traditional accounting measures. The current study applied the panel regression methods based on fixed and random effects models. It is found that EVA has more incremental information than other accounting measures which explains the variations in market value of the firm better than other traditional accounting measures comparatively. Therefore it can be concluded

that EVA is a better financial performance measure compared to traditional measures and that while calculating EVA, it is imperative to make necessary adjustments to calculate EVA values as suggested by Stern Stewart to zero in on relative information content too.

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APPENDIX

TABLE A:

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EVA	208.2401	125.0323	1.665491	0.1023
C	188.4843	49.17419	3.832993	0.0004
R-squared	0.054632	Mean dependent var		256.9438
Adjusted R-squared	0.034936	S.D. dependent var		194.2782
S.E. of regression	190.8544	Akaike info criterion		13.38008
Sum squared resid	1748419	Schwarz criterion		13.45656
Log likelihood	-332.5019	Hannan-Quinn riter.		13.4092
F-statistic	2.77386	Durbin-Watson stat		0.625857

TABLE B:

Dependent Variable: SH_PRICE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MVA	0.515474	0.378357	1.362402	0.1794
C	235.52	31.45143	7.488372	0
R-squared	0.03723	Mean dependent var		256.9438
Adjusted R-squared	0.017172	S.D. dependent var		194.2782
S.E. of regression	192.6029	Akaike info criterion		13.39832
Sum squared resid	1780603	Schwarz criterion		13.4748
Log likelihood	-332.9579	Hannan-Quinn criter.		13.42744
F-statistic	1.85614	Durbin-Watson stat		0.6994

TABLE C:

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE	78.87104	117.7589	0.669767	0.5062
C	220.3639	61.20752	3.600275	0.0008
R-squared	0.009259	Mean dependent var		256.9438
Adjusted R-squared	-0.011381	S.D. dependent var		194.2782
S.E. of regression	195.3807	Akaike info criterion		13.42695
Sum squared resid	1832334	Schwarz criterion		13.50344
Log likelihood	-333.6739	Hannan-Quinn criter.		13.45608
F-statistic	0.448588	Durbin-Watson stat		0.656946

TABLE D:

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROCE	216.2635	165.0442	1.310337	0.1963
C	193.1879	55.78003	3.463388	0.0011
R-squared	0.034535	Mean dependent var		256.9438
Adjusted R-squared	0.014421	S.D. dependent var		194.2782
S.E. of regression	192.8723	Akaike info criterion		13.40111
Sum squared resid	1785587	Schwarz criterion		13.47759
Log likelihood	-333.0278	Hannan-Quinn criter.		13.43024
F-statistic	1.716983	Durbin-Watson stat		0.664048

TABLE E:

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EPS	22.21507	4.800535	4.627624	0
C	76.01535	45.40356	1.674216	0.1006
R-squared	0.308506	Mean dependent var		256.9438
Adjusted R-squared	0.2941	S.D. dependent var		194.2782
S.E. of regression	163.2284	Akaike info criterion		13.06736
Sum squared resid	1278889	Schwarz criterion		13.14384
Log likelihood	-324.6839	Hannan-Quinn criter.		13.09648
F-statistic	21.41491	Durbin-Watson stat		0.766702

TABLE F:

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROS	1355.406	379.7603	3.569109	0.0008
C	66.49773	58.78971	1.131112	0.2636
R-squared	0.209727	Mean dependent var		256.9438
Adjusted R-squared	0.193263	S.D. dependent var		194.2782
S.E. of regression	174.4978	Akaike info criterion		13.20088
Sum squared resid	1461576	Schwarz criterion		13.27736
Log likelihood	-328.022	Hannan-Quinn criter.		13.23
F-statistic	12.73854	Durbin-Watson stat		0.694519

TABLE G:

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-0.281619	171.1784	-0.001645	0.9987
C	257.0388	64.06089	4.012413	0.0002
R-squared	0	Mean dependent var		256.9438
Adjusted R-squared	-0.020833	S.D. dependent var		194.2782
S.E. of regression	196.2915	Akaike info criterion		13.43626
Sum squared resid	1849458	Schwarz criterion		13.51274
Log likelihood	-333.9064	Hannan-Quinn criter.		13.46538
F-statistic	2.71E-06	Durbin-Watson stat		0.661208

TABLE H: EQUATION 8

Dependent Variable: SH_PRICE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE	-104.3912	137.9105	-0.756949	0.4531
ROCE	377.1182	247.5664	1.523301	0.1348
EPS	16.87043	6.825297	2.47175	0.0174
ROS	974.8378	413.0059	2.360348	0.0228
ROA	-238.1697	252.9137	-0.941703	0.3515
C	0.138446	80.51225	0.00172	0.9986
R-squared	0.433139	Mean dependent var		256.9438
Adjusted R-squared	0.368723	S.D. dependent var		194.2782
S.E. of regression	154.3598	Akaike info criterion		13.02862
Sum squared resid	1048386	Schwarz criterion		13.25806
Log likelihood	-319.7154	Hannan-Quinn criter.		13.11599
F-statistic	6.724087	Durbin-Watson stat		0.865367

TABLE I: EQUATION 9

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE	-106.2487	139.7112	-0.760488	0.4511
ROCE	389.3323	256.9213	1.515376	0.137
EPS	17.07189	6.966533	2.450557	0.0184
ROS	985.5343	420.6383	2.342949	0.0238
ROA	-232.0332	257.358	-0.901597	0.3723
MVA	-0.077523	0.367839	-0.210751	0.8341
C	-4.592277	84.43928	-0.054386	0.9569
R-squared	0.433724	Mean dependent var		256.9438
Adjusted R-squared	0.354709	S.D. dependent var		194.2782
S.E. of regression	156.0638	Akaike info criterion		13.06758
Sum squared resid	1047304	Schwarz criterion		13.33527
Log likelihood	-319.6896	Hannan-Quinn criter.		13.16952
F-statistic	5.489115	Durbin-Watson stat		0.856061

TABLE J: EQUATION 10

Dependent Variable: SH_PRICE

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROE	-247.9721	173.3217	-1.430705	0.1597
ROCE	356.5832	245.7819	1.450811	0.1541
EPS	14.97159	6.908456	2.167141	0.0358
ROS	984.1972	409.2981	2.404597	0.0206
ROA	-301.1419	254.9319	-1.181264	0.244
EVA	259.1423	192.4217	1.346742	0.1851
C	22.97915	81.56078	0.281743	0.7795
R-squared	0.456081	Mean dependent var		256.9438
Adjusted R-squared	0.380185	S.D. dependent var		194.2782
S.E. of regression	152.952	Akaike info criterion		13.0273
Sum squared resid	1005955	Schwarz criterion		13.29499
Log likelihood	-318.6826	Hannan-Quinn criter.		13.12924
F-statistic	6.009318	Durbin-Watson stat		0.869062