

**Valuation of Entrepreneurial Firms**  
**M.Venkateshwarlu**  
**Assistant Professor,**  
**Finance and Accounting Group**  
**National Institute of Industrial Engineering (NITIE)**  
**Viharlake Road, Mumbai 400 087. India**  
**Phone No: (R) 91-22-28577134**  
**(O) 91-22-28573371 Ext 333**  
**email- [ymasuna@yahoo.com](mailto:yvasuna@yahoo.com)**  
**[venkat@faculty.nitie.edu](mailto:venkat@faculty.nitie.edu)**

**Rishabh Tiwari**  
**IVth Year Dual Degree,**  
**Department of Mechanical Engineering**  
**Indian Institute of Technology**  
**Powai, Mumbai - 400087 India**  
**Email- [rktiwari@me.iitb.ac.in](mailto:rktiwari@me.iitb.ac.in)**  
**[rishabhtiwari@yahoo.com](mailto:rishabhtiwari@yahoo.com)**

## Valuation of Entrepreneurial Firms

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**Abstract:** Valuation is the critical concern for any business. However, valuation of entrepreneurial firms is not straightforward as many are privately – held or traded in thin secondary markets. Valuation based on the market value of the firm is not possible in case of these firms, as most of them are closely held or not listed on the Stock Exchange and the few-listed firms are not traded frequently. These firms in India are closely held and the common public holds a very little portion of equity. The average equity held by the public in these enterprises is less than 10 Percent and liquidity is negligible which is less than 0.01 percent of total floating stock. Against this backdrop, this paper makes an attempt to examine the relationship of performance measures and value of firm. The valuation methods used in this study are: Economic Value Added (EVA) method, Free Cash Flows (FCF) method, and Book Value method.

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**I. Introduction:** Market Valuation and shareholders value creation has become increasingly important for business. According to the principles of Value Management, firm must generate adequate returns for its owners, in line with the relative opportunity cost of investment. Companies whose returns exceed the opportunity cost to its owners create corporate value and hence share holder's value. This means that an analysis of value and performance of a firm or one of its business units centers around two main indicators: Value, and Returns. Unlike larger firms, a major problem in measuring the value of entrepreneurial firms is that many are either privately owned or publicly traded in very thin secondary market. These firms are usually small in terms of investment; size of operations, and its market presence. In this study the terms such as entrepreneurial firms, small business firms and closely held firms are used interchangeably and assumed to be in the similar category of firms, which is a usual scenario in India. Unfortunately, it is difficult to get the detailed information particularly the financial and other internal data of these firms. Most of these entrepreneurial firms are closely held and the common public holds a very little portion of equity. The average equity held by the public in these enterprises is less than 10 Percent and liquidity is negligible which is less than 0.01 percent. Thus unavailability of market information makes the valuation process more difficult in case of entrepreneurial firms. These firms in India are large in number, and

they do contribute considerably to the aggregate industrial production and export revenues.

In view of non-availability of market value, the alternative method for measuring the value of entrepreneurial firms can be done with the suitable valuation models. It is also possible to use the valuation models to understand the value creation process. Therefore, it is also important to understand which performance measure has relatively more importance for maximizing the value of firm. Against this backdrop, this paper attempts to answer both these questions using a statistical analysis.

The determinants of value of firm are; operational efficiency, market position, and the long- term strategies. The important performance measures are primarily accounting profits, free cash flows, and business growth. The theory of modern corporate finance indicates the relationship between performance and value of firm. However, Ang (1991-A, 1991-B) argues that the theory of finance is not developed with small business in mind. The literature on finance enlists, at least eleven important approaches for valuation of firms, they are: (1) Book Value Method, (2) Earnings Capitalization Method, (3) Dividends Capitalization Method (4) Discounted Cash Flow Method (5) Free Cash Flow Method, (6.) Economic Value Added (EVA) Method, (7) Fair Value Method (8) Market Value Added (MVA) method and (9) Relational Value Method (10) Replacement Value Method and (11) Face Value Plus Interest Method

Using all these methods in case of entrepreneurial firms is not possible, as most of the firms does not pay dividends regularly, and market price of the shares is not available. Therefore, this study statistically examines the relationships between value of firm and performance measures using three important valuation methods viz; 1. Economic Value Added, 2. Book Value, and 3. Free Cash Flow.

**II. Problems in Valuing Entrepreneurial Firms:** The valuation of a firm should reflect the price at which a business would change hands between willing parties when the buyer is not under any compulsion to buy and the seller is not under any compulsion to sell and both the parties have reasonable knowledge of the relevant facts. Literature on this subject provides us thinking about valuation of large publicly traded companies.

However, it fails short in providing valuation methods for the majority of young entrepreneurial business, which are generally small, non- publicly, traded companies. The challenge therefore is to translate financial theory in to practical, available measures that can be used as proxies for valuation of small and entrepreneurial business, which are not publicly traded. Fundamental differences exist between small, and large public business is in valuing them. Valuation of large publicly traded companies is relatively easy depending on the assumptions made. If we assume that public markets are at least semi-strong form efficient, then the closing price on a large publicly traded company may be calculated based on factors such as current stock prices, the degree of risk associated with investing in that company, and expected growth rates for the company. For small and entrepreneurial firms, these same factors may not be considered as the stock of these companies are not listed and traded on the stock exchange. Therefore, valuation of small needs to be more meticulous and one should be careful in selecting the valuation methods.

**III. Review of Literature:** Most of the research on the themes of valuation and value creation is focused on big firms (Altman 1996, Dimitras et al 1996, Morris, 1997 and Ooghe et al 1995). However, there are few good studies (Berryman 1983, Keasey Watson 1991) focused on Small and Medium Enterprises (SMEs). The first book to devote entirely for SMEs is Argeti (1976) “Corporate Collapse”. In deed, Didier Van Caille (2001) is the recent study on value creation indicators and bankruptcy in SMEs .and one more important study (Varcy Z Roztocki 1999) provides a framework for application of EVA in SMEs. Olays Rick’s (2002) study examines value creation in the corporate mergers and acquisitions and explains the cumulative abnormal returns framework method to empirically analyze the impact of different acquisition motives on the valuation effect. However this study deals with large firms.

Shannon P Pratt’s (2001) book on “The Market Approaches to Valuing Business” provides a road map to begin a serious study of market approach to business valuation. Another important book on this subject, “ Managing for Value” (Stefan Botzel and Andreas Schwillig 1999) explains why value management is such a powerful engine for growth and provides the methods of measuring value creation. Tom Copeland’s (1999) “

Valuation: Measuring and Managing Value of Companies” emphasizes the need for value based thinking and explains application of sophisticated valuation models. The book on “The Cost of Capital” (Cleveland S Patterson, 1995) provides both a rigors understanding of theoretical issues underlying concept of cost capital and an application of practical problems solving its use as a decision tool.

The important monographs in the area of valuation and value creation focused on SMEs are listed below. One of the important (Michael F Spivey 2000) work on Economic value Added and the Valuation of Small Business provides an overview of the standard asset, market, and income valuation methods, which are generally used to estimate the value of small business. It then discusses EVA and demonstrates its potential use in the valuation of small business. Luis E Pereiro’s study (2000), The Valuation of Closely- held Companies in Latin America developed a comprehensive fundamentals-based valuation model and provide supporting empirical data for valuing privately held companies in Latin American emerging markets. Ronald E, Shrives and John M Wachowicz’s paper (2000) assists the users of Discounted Cash Flow(DCF) techniques by clearly setting forth the relationship of free-cash-flow(FCF) and EVA concepts to each other and to the more traditional applications of DCF thinking. A working paper on “Expected EPS and EPS Growth as Determinants of Value” ( James A. Ohlson and Beate E Juettner-Nauroth 2000) explain develops a parsimonious model relating to a firm’s price per share to; (i) next year expected earnings per share (eps) (ii) short term growth in eps, (iii) long term growth in eps and (iv) cost of equity capital. The arguments of Jay B Abrams (1994) paper are important for the firms do not have any liquidity and which the promoters closely hold. He argues that, it is necessary to examine and quantify the factors that determine the discount lack of marketability. A study in India (Ashok Benerji 2001) explains the role of EVA and MVA in valuation of larger firms and discusses the adjustments to be made to the accounting information for adoption of these methods in Indian context.

**IV. Performance Related Variables/ Indicators:** We can classify the performance related variables in to three categories viz; 1. Accounting Profitability Measures, 2. Cash

Flow Measures and 3. Growth Measures. The specific measures within each of this category are depicted below:

**Figure. I**  
**Performance Related Measures**

<b>Accounting Profitability Measures</b>	<b>Cash Flow Measures</b>	<b>Growth Measure</b>
<i>Earnings Per Share</i>	<i>Cash Flow Per Share</i>	<i>Earning Growth</i>
<i>Return on Equity</i>	<i>Cash Flow Return on</i>	<i>Sales Growth</i>
<i>Return on Invested capital</i>	<i>Shares</i>	<i>Capital Expenditure</i>
<i>Return on Assets</i>		<i>Growth</i>
<i>Return on Sales</i>		
<i>Asset Utilization</i>		
<i>Economic value Added</i>		

In our study we revealed that relationships between certain performance measures and valuation of firms do exist. Statistically significant positive correlations were found between value of the firm and the performance measures. The details are explained in the subsequent paragraphs of this paper. The analysis is done to find out the relation between the estimated value and the accounting and economic performance measures. The variables used in this paper are averaged over last five years for statistical analysis. The variables are defined as shown in the figure two.

**V. Objectives and Methodology:** This study aims at understanding the valuation methods for small entrepreneurial firms in India. This is done first by identifying the performance measures of entrepreneurial business. Subsequently the value of firms is determined by using three prominent valuation models. Finally the paper attempts to reveal the relationship between performance measures and value of the firms.

**V (a) Data and Data Characteristics:** The data for the analysis was taken from the Center for Monitoring Indian Economy Data Base (PPROWESS) for years 1997 to 2002. Companies with an invested capital of less than Rs 10 Crore were taken. This was done with a view to get results, which are able to represent the features of entrepreneurial firms. The firms selected are closely held and though listed on the stock exchanges the average trading percentage is around 0.01 percent of total out standing shares. Analysis is done for a total of 164 companies. The companies were drawn from three sectors Viz Information Technology (25firms), Manufacturing (126) and Services (15). They were further classified into profit making and loss making companies with a view to eliminate the neutrality if they are combined.

**V (b) Statistical Tools:** To understand the relative deviations in the data all the possible descriptive statistical values are calculated. To identify the relationship between the value of the firms and performance measures Pearson Correlation is used. To measure the dependence of the value of firms with the performance measures multiple regression analysis is done.

**V(c) Limitations of the Study:** Since all the companies considered in this study are either private limited or closely held firms, the accounting policies may differ with respect to valuation of assets, depreciation, and other estimated values. One of the important strengths of this study is, the entire data of all the firms is drawn from one single source (CMIE), hence the possibility of inconsistencies in collection of data is very much limited.

**VI. Valuation Methods:** As explained in earlier paragraphs of this paper, the three most commonly used methods to evaluate the closely held are used in this study (1) Economic Value Added Method, (2) Book Value method and (3) Free cash flow methods.

**VI (a) EVA Method:** The reason behind using the EVA method is primarily attributed to Nancyz Roztockki's paper on "EVA for Small Manufacturing Firms", explains the suitability of EVA as measurement for value creation in small enterprises. The paper by Michael F Spivey also describes the role of EVA in small business valuation. Keeping these arguments in view the EVA method is used for analyzing the firms understudy. Economic Value Added (EVA) is by definition the value added to a firm in a given time

period. It is regarded as a single, simple measure that gives a real picture of stockholders wealth creation. And since it is not dependent upon the market values hence it is a more significant tool for valuing small businesses. EVA for a firm is calculated as net profit after subtracting cost of all capital employed.

$$\text{EVA} = \text{PBIT} - \text{WACC} * \text{Invested Capital}$$

Where,

PBIT = Profit before Interest and Taxes

and WACC = Weighted Average Cost of Capital

The valuation approach using EVA recognizes that the value of a firm depends on the future economic benefits. The total value of a firm at present is a sum of the total invested capital and the future additions in the value of firm. For estimation of future addition in value of firm an estimate must be made of growth rate, future invested capital and cost of capital. It is assumed that after a terminal rate the business will grow at a constant growth rate. For a business with estimated life of n periods the value of the firm would be:

$$\text{Total Value} = \sum_{t=1 \text{ to } n} [\text{EVA}_t / (1 + \text{WACC})_t] + (\text{Total Invested Capital})$$

Where,

$\text{EVA}_t = (\text{Adjusted PBIT})_t - (\text{Capital Charge})_t$ ,

$\text{Capital Charge} = (\text{Periodic Invested Capital})_t \times \text{WACC}$ .

$\text{Total Invested Capital} = \text{Current Cumulative Level of Invested Capital}$

Requires estimation of each period's (t) level of invested capital, adjusted EBIT and WACC. The first term on the right hand side of the equation computes the present value of future EVA by discounting each period's estimated EVA back to the present at the estimated WACC. That amount is then added to the current (t=0) cumulative level of invested capital to arrive at total firm value.

If we assume that the business is a going concern (i.e., has an infinite life) and that at some point in time the spread between return on invested capital (ROIC) and the weighted cost of capital (WACC) becomes constant. At that point, changes in EVA

over a period of time will depend on assumptions about the growth in invested capital. For example, if we assume that the ROIC - WACC spread becomes constant at time period T (t=T) and also that growth in invested capital (g) also becomes constant at time period T (t=T), then Total Value becomes:

$$\text{Total Value} = \sum_{t=1 \text{ to } n} [\text{EVA}_t / (1 + \text{WACC})^t] + \{[\text{EVA}_{t=T} \times (1 + g)] / (\text{WACC} - g)\} / (1 + \text{WACC})^T + (\text{Total Invested Capital})_{t=0}$$

Valuation was done for all the companies and relevant analysis as explained above is shown in the tables from I to IV.

**VI(b)Free Cash Flow Method:** Ronald E Shrives explains the role of free cash flow model in valuing small firms. Keeping this in view Free Cash Flow method is also used in this study. Free Cash Flow to the firm is the sum of cash flow to equity and cash flow to debt holders reduced by the interest tax shield benefits from the cash flow to debt holders.

The free cash flow identity can be written as

$$\text{FCF} = \text{OCF} - \text{ICF} + i_t(1-T)$$

Where,

OCF = Operating Cash Flow

ICF = Investment Cash Flow

$i_t$  = interest expense

T = tax rate

Putting it in other form the Free Cash Flow can be represented as a function of three components namely Operating Cash flow (OCF), Capital employed and change in working capital. OCF can be calculated as EBIT –taxes + depreciation

$$\text{FCF} = (\text{EBIT}_t)(1-T) + \text{depr}_t - \text{CAP}_t - \Delta\text{WK}_t$$

Where,

$\text{EBIT}_t$  = earnings before interest and tax payments

$\text{depr}_t$  = depreciation and amortization expense

$\text{CAP}_t$  = Total capital expenditure

$\Delta\text{WK}$  = change in book value of working capital

The valuation using FCF method assumes that the value of the firm lies in the cash flows that the firm is going to generate in the future. It is just the sum of the future cash flows discounted to the present value. For a firm of estimated life of n periods the total value is,

$$\text{Total Value} = \sum_{t=1 \text{ to } n} [\text{FCF}_t / (1 + \text{WACC})_t]$$

Where,

$\text{FCF}_t$  = FCF for year t,

WACC= Weighted average cost of capital

Total Invested Capital = Current Cumulative Level of Invested Capital.

As mentioned in his paper by Jay B Abrams (1994) with a view to accommodate the discounting factor for lack of liquidity for these closely held firms, the calculated value is discounted by 25 percent. This 25 percent is for accounted for transaction costs and liquidity costs. This 25 percent discounted factor is normally used in case of Indian firms for lack of liquidity. In this study the methods; discounted Free Cash Flow and absolute Free Cash Flow methods are presented.

**VI (c) Book Value Method:** Book Value approach tries to value a firm by assuming the value of firm to be equal to shareholders equity, i.e. if all the liabilities are to be paid off by selling off the assets of the firm then whatever is left is the book value of the firm. Putting it mathematically

$$\text{Book Value} = \text{Total Assets} - \text{Total Liabilities}$$

Book value is calculated for each of the company in all the sectors and a descriptive analysis is presented in tables II

**VII. Univariate Analysis:** Table III presents the correlation coefficients between Value of firms and various performance measures. First four columns have the dependent variable as value created by EVA, FCF, FCF with 25% discount and Book Value method respectively for companies with positive earnings and latter four represent the same for companies with negative earnings.

**VII (a) Companies with positive earnings:** The value calculated by EVA method shows weak correlation with most of the profitability measures such as EPS, P/E, ROA and ROE except for ROIC and ROS with which a strong negative and positive correlation respectively was shown. Also it shows no correlation with any of the Cash flow measures. It shows a very strong positive relation with sales growth and a strong negative correlation with capital growth.

For the value calculated by Free cash flow methods also the similar results were shown with a very strong positive correlation with sales growth and a strong negative correlation with capital growth. A strong correlation was found with both the cash flow measures i.e CF/S and CFROS. Among profitability measures only ROIC and ROS showed significant negative and positive relation respectively. Book Value didn't show correlation with any of the performance measures except for EPS and ROE with which a significant positive correlation was found.

**VII (b) Companies with negative earnings:** The value calculated by EVA method did not show strong correlation with any of the performance measures. Only weak negative correlation was found with earnings growth. No correlation was found even with sales growth. Also the value calculated by FCF method was independent of most of the performance measures except for CF/S with which it showed strong positive correlation. For value calculated by Book Value method strong correlation was found with earnings growth and strong negative correlation was found with EPS and ROE.

**VIII. Multivariate Analysis:** A linear least square regression analysis was done to examine the relationship of the value firm calculated by different methods with various market value creation measures.

$$\text{FIRM VALUE} = C_0 + C_1X_1 + C_2X_2 + \dots$$

Where  $C_s$  are the regression coefficients

And  $X_s$  are various independent performance measures

Table IV represents the regression coefficients and significance for various value creation measures with the estimated value of the firm. Regression was carried out for firm value measured by all the methods namely EVA, FCF, FCF with 25% discount and Book Value Methods.

**VIII (a) Companies with positive earnings:** Similar to the results in table III, the firm value as calculated by EVA method was strongly correlated with sales growth and CF/S. Also it was related strongly with beta and WACC values. For Free cash flow methods the firm the relationship of firm value was only found significant with CF/S, EPS, beta and Sales growth and Capital growth with a very high dependence on cash flow per share. For book value method the Earnings measures showed a significant relationship. It was strongly dependent on ROE, ROIC, ROA. Also relationship was significant with CF/S.

**VIII (b) Companies with negative earnings:** For negative earnings the EVA method showed dependence only on sales growth and WACC. No dependence was seen with any of the other variables. Firm value by free cash flow methods also showed dependence only on sales growth. Book Value didn't show dependence on any of the market measures.

### **IX. Conclusion:**

The study statically examines the relationship between the various performance measures and the estimated value of the firm. The firms taken were close representation of the entrepreneurial firms as the size of the firms was relatively small (less than Rs 100 Million). The Valuation method that were considered applicable for these firms were EVA method, FCF method and Book Value method. A rather large number of performance measures were considered in our investigation: (1) earnings performance measures: return on sales, return on equity, return on capital employed, P/E ratio, Earnings per share and EVA. (2) Cash Flow Performance measures: cash flow per share, cash flow return on sales. (3) Growth measures: earnings growth, sales growth and

Capital growth. We examined the relationships independently by doing a correlation analysis and also while controlling the effect of the variables on each other.

The results of our analysis showed that a strong positive correlation existed between the value of firm and the sales growth. Also the value calculated by cash flow method showed a strong correlation with the cash flow per share and the value calculated by EVA method showed strong correlation with the Weighted Average Cost of Capital. A statically significant relationship was also found between the various earning measures and the value calculated by Book Value method. Also beta was found to be statically important for the value calculated by EVA and FCF methods for the firms with positive earnings. Our study reveals that the performance measures and their relevance to value of the firm certainly help the interested parties in measuring value creation in entrepreneurial firms.

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## Figure 2

### Methods, assumptions and approximations

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Beta = slope of 5 year regression line of the percentage return adjusted for regression tendencies

Assets = sum of all short term and long term asset categories

#### Profitability Measures

- EPS = Earnings per share measured as adjusted income available to common shareholders divided by diluted weighted average shares outstanding
- P/E = Price by earning ratio
- ROE = Return on equity measured as income available to common shareholders divided by average common equity, expressed as a percentage
- ROIC = return on invested capital measured as income after taxes divided by the average total long term debt, other long term liabilities and shareholders; equity, expressed as a percentage
- ROA = return on assets defined as income after taxes divided by the average total assets, expressed as a percentage
- ROS = return on sales calculated as pre-tax income divided by total sales expressed as percentage

#### Cash Flow Measures

- CF/S = cash flow per share measured as after tax income available to common shareholder plus depreciation depletion and amortization.
- CFROS = cash flow return on sales defined as cash flow per share divided by sales per share

#### Growth measures

- Earnings growth = growth rate of earnings per share expressed as percentage
  - Cap growth = capital expenditure growth rate expressed as a percentage
  - Sales growth = sales growth rate expressed as a percentage
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**Table I**  
**List of Companies with Paid Up Equity less than Rs 100 Million listed By sector**

<b>Companies with positive earnings</b>	
Manufacturing sector	83
IT sector	20
Services sector	10
Total	113
<b>Companies with Negative Earnings</b>	
Manufacturing sector	43
IT sector	5
Services sector	5
Total	53
<b>Total number of Companies</b>	<b>166</b>
Range of Equity capital	Rs 0-100 million
Period of Study	Five Accounting Years
(From 01/04/1997 to 31/03/2002)	

**Table II**  
**Descriptive Statistics for Sample of firms**

	FIRMS WITH POSITIVE EARNINGS				FIRMS WITH NEGATIVE EARNINGS			
	Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation
Total assets	1.75	297.844	64.895692	75.622829	3.906	686.646	115.77213	137.054
BETA	0	1.55	0.307	0.4708168	-1	2.332	0.53525	0.61178
WACC	-53.3529	104.65553	18.290268	25.385231	-65.042	144.352	28.861341	26.3181
EVA	-155.51609	1.6705734	11.657428	26.090516	-419.06	82.5656	-16.71723	56.7978
EPS	-16.512397	0.1987991	3.4659406	4.0363416	0.02326	37.6997	6.6643382	7.42031
P/E	-32.179291	704.61876	34.900038	131.19032	-1665.7	124.212	-7.496753	168.048
ROE	-1.7730255	0.0238443	0.3388336	0.4094807	0.00233	3.76983	0.676444	0.76197
ROIC	-10.540338	25.823447	0.1777053	3.9080252	-1.3144	0.35457	0.0649668	0.16617
ROA	-0.263996	0.0177778	-0.058903	0.0582657	-0.0277	0.30227	0.0555719	0.05417
ROS	-4.6506059	1.6723924	-0.290811	0.8719513	-0.5515	2.99369	0.0986394	0.31436
CF/S	-1.7493868	1.0238669	0.0296592	0.3729389	-3.5367	44.5547	1.4066465	5.84485
CFROS	-7.4001771	1.1973131	0.0552739	1.0833916	-2.9443	32.5185	0.6754746	3.96268
earnings growth %	-4625.3893	2192.6859	81.344773	826.79642	-13302	9043.61	-77.52383	1595.95
sales growth %	-2175.0383	356.02676	95.957291	367.06828	-67838	121921	424.92565	13240.4
Cap growth %	-1273.1985	3137.4809	23.062022	474.5192	-26712	101.003	-291.7022	2571.34

**Table III**  
**Correlation coefficients-Value of firm Vs Various Performance Measures**

	FIRMS WITH POSITIVE EARNINGS				FIRMS WITH NEGATIVE EARNINGS			
	EVA_1	FCF_1	FCF1(25%)	BV	EVA_1	FCF_1	FCF1(25%)	BV
BETA	-0.0959	-0.1218	-0.1218	-0.0364653	-0.0924	-0.0049	-0.0049	0.07342
	0.31433	0.20074	0.20074	0.702676	0.5147	0.9727	0.97272	0.60496
WACC	-0.1426	0.05496	0.05496	0.1247412	-0.4427	-0.1934	-0.1934	-0.1167
	0.13365	0.56494	0.56494	0.190043	0.0010	0.1695	0.16952	0.41016
EPS	-0.2203	-0.1663	-0.1663	0.3018164	0.19249	0.06412	0.06412	-0.2441
	0.01961	0.07975	0.07975	0.001220	0.1715	0.6515	0.65155	0.08115
P/E	-0.2522	-0.2255	-0.2255	0.035028	0.1773	0.0593	0.05934	-0.0624
	0.00758	0.01733	0.01733	0.715124	0.2084	0.6760	0.67603	0.6603
ROE	-0.2193	-0.1684	-0.1684	0.291611	0.1997	0.0679	0.06795	-0.2488
	0.02016	0.07598	0.07598	0.001810	0.1556	0.6322	0.63222	0.07527
ROIC	-0.6648	-0.6419	-0.6419	0.0721415	0.00452	0.05137	0.05137	0.08889
				0.44971				
	1.1E-16	5.6E-15	5.6E-15		0.9746	0.7175	0.71759	0.53088
ROA	-0.2373	-0.2618	-0.2618	-0.0748629	-0.0368	-0.0551	-0.0551	0.03856
	0.01177	0.0053	0.0053	0.432754	0.7954	0.6978	0.69788	0.7861
ROS	0.66736	0.63372	0.63372	-0.0275674	-0.0787	-0.1492	-0.1492	0.0396
	6.9E-17	1.9E-14	1.9E-14	0.772942	0.5790	0.2911	0.29112	0.78045
CF/S	0.03188	0.5636	0.5636	-0.022226	-0.1875	0.69318	0.69318	0.03215
	0.73863	0.0154	0.0123	0.816062	0.1831	.058	.065	0.821
CFROS	0.03951	0.02515	0.02515	-0.013096	-0.2769	-0.1255	-0.1255	0.05438
	0.6792	0.7924	0.7924	0.890994	0.0469	0.3753	0.37536	0.70179
Earnings growth %								
	0.12814	0.13716	0.13716	0.0233397	-0.3285	-0.1567	-0.1567	0.12479
	0.17816	0.14928	0.14928	0.807024	0.0174	0.2672	0.26724	0.37807
Cap growth %								
	-0.7803	-0.7501	-0.7501	0.026666	0.00593	0.05714	0.05714	0.08411
	6.4E-19	6.4E-19	6.4E-19	0.780175	0.9666	0.687	0.6874	0.55331
Sales growth %								
	0.70114	0.68837	0.68837	-0.0336625	-0.0558	-0.0136	-0.0136	0.07969
	6.4E-19	9.3E-19	9.3E-19	0.724573	0.6944	0.9236	0.92363	0.5744

**Table IV**  
**Regression analysis for Value of firms by different methods**

Values indicated in the parenthesis are p values indicating the statistical significance

Variable	FIRMS WITH POSITIVE EARNINGS				FIRMS WITH NEGATIVE EARNINGS			
	Coeff (p)	Coeff (p)	Coeff (p)	Coeff (p)	Coeff (p)	Coeff (p)	Coeff (p)	Coeff (p)
	EVA	FCF	FCF (25%)	BV	EVA	FCF	FCF (25%)	BV
Constant)	-63.4534 (.63)	7.333095 608(.97)	5.499822 (.97)	13.96864 (.49)	32.9517 (.07)	4.59321 (.85)	3.44491 (.637)	6.78281 (.11)
ROE	192.012 (.076)	257.126 (.121)	192.8452 (.12)	40.69636 (.01)	80.5691(. 27)	15.2419 (.699)	11.4314 (.699)	-3.97545 (.81)
ROIC	271.7061 (.153)	208.5305 072 (.472)	156.3979 (.47)	71.06764 (.01)	67.9350 (.36)	-17.8665 (.656)	-13.3999 (.656)	19.2473 (.268)
ROA	-680.079 (.14209)	807.4948 678 (.254)	-605.621 (.254)	-325.377 (8.9E-9)	-7.15352 (.96)	-16.1223 (.869)	-12.0917 (.89)	56.7402 (.184)
ROS	-83.0428 (.36)	118.2537 991 (.396)	-88.6903 (.396)	5.56668 (.68)	-1.24744 (.92)	-3.70649 (.61)	-2.77986 (.61)	0.16678 (.957)
CF/S	-6.70685 (.01)	13.07982 802 (.003)	-9.80987 (.003)	-0.96291 (.02)	-1.23626 (.97)	1.44358 (.88)	1.08268 (.94)	1.74301 (.842)
CFROS	-0.20241 (.95)	1.256702 392 (.825)	0.942527 (.825)	-0.14778 (.79)	-10.2484 (.6)	-1.47497 (.63)	-1.10623 (.88)	-2.66286 (.557)
earnings growth %	-0.04879 (.16)	0.018924 524 (.725)	-0.01419 (.725)	-0.00211 (.691)	-0.01355 (.402)	-0.00413 (.644)	-0.00309 (.63)	0.00389 (.3)
Cap growth %	-0.08476 (3.26E-5)	0.091489 813 (.002)	-0.06862 (.002)	-0.00184 (.53)	-0.55058 (.372)	0.15294 (.846)	0.11471 (.644)	-0.16111 (.267)
sales growth %	0.001733 (.033)	0.006609 364(.036)	0.004957 (.031)	0.00013 (.35)	0.00598 (.024)	0.00282 (.044)	0.00212 (.064)	0.00258 (.679)
P/E	0.10398(. 233)	-0.05599 3642 (.674)	-0.042 (.674)	-0.00342 (.79)	-0.02714 (.631)	-0.01416 (.807)	-0.01062 (.89)	-0.01204 (.731)
EPS	-21.5587 (.036)	28.56980 919 (.069)	-21.4274 (.069)	-2.00034 (.19)	-3.4468 (.801)	-0.53059 (.81)	-0.39795 (.8)	-0.57217 (.629)
WACC	-1.30646 (.02)	0.495511 435 (.58)	0.371634 (.51)	-0.23987 (.008)	-1.24336 (.004)	-0.16697 (.45)	-0.12523 (.7)	-0.158 (.11)
BETA	-55.9589 (.01)	67.02998 921(.05)	-50.2725 (.058)	1.45156 (.67)	-0.50017 (.98)	0.41703 (.97)	0.31277 (.45)	6.65161 (.21)