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EQUITY SHARE PRICE DETERMINANTS - AN EMPIRICAL ANALYSIS (An Empirical Analysis on select Steel Companies in India)

KEYWORDS

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ABSTRACT *The determinants of share prices are frequently a topic of debate. Economists and Investors hold different view as far as the pricing of a share is concerned. Fundamental variables on share price are very much helpful to investors as it will help them in taking profitable investment decisions. To estimate the future share prices, fundamental analysts use stock valuation ratios to derive a share's current fair value and estimate future value. This study analyses selected steel companies to know the impact of selected accounting variables like Book Value, Dividend per Share, Earnings per Share, Size of the Firm, Dividend Payout ratio, Dividend Yield, Return on Net worth and P/E ratio on the equity prices of listed companies in Bombay Stock Exchange. The results confirm the significance of Book value and Return on Net worth as determinants of Market Share Price by the statistical tool of multiple regressions.*

Introduction

The determinants of share prices are frequently a topic of discussion. The economists and investors hold different view as far as the pricing of a share is concerned. In an efficient market, share prices would be determined primarily by fundamental factors, such as dividend pershare,earnings pershare, dividend payout ratio, dividend yield, net worth,size of the firm, etc. To estimate the future share prices, fundamental analysts use stock valuation ratios to derive a share's current fair value and assess the future value.In this paper, an attempt has been made to know the impact of financial variables, like book value, dividend pershare, earnings per share, size of the firm,dividend payout ratio, dividend yield, return on networth and P/E ratio on the equity prices of the select steel companies listed in Bombay Stock Exchange.

STEEL INDUSTRY IN INDIA

Steel Industry plays a major role in Indianindustry and contribute significant share in the GDP for the development of the economy. In India, the visionary Sri Jamshedji Tata set-up the first Iron and Steel manufacturing unit, i.e., Tata Iron & Steel Company, at Jamshedpur in Jharkhand state. The Iron and Steel Industry in India is one of the fastest growing sectors. The reforms on steel industry during 1991 and 1992 have led to strong and sustainable growth in India's steel industry. The Arcelor Mittal, which is the largest steelmaker in the world, has plans of establishing two Greenfield steel projects with a capacity of 12 million tons a year in India. The domestic consumption of steel has grown by12.5% during the past three years and the per capita consumption of steel in India is 35kgs during the year 2012-13.

OBJECTIVES OF THE STUDY

Against this background, an attempt is made in this study toexamine the empirical relationship between stock prices and company specific intrinsic factors, such as: dividend pershare, earnings pershare,book value,sales volume,dividend yield, dividend payout,return on net worth andprice to earnings ratio during the period 2003-04 to 2012-13.

HYPOTHESIS

On the basis of the objectives stated above, the hypothesis is framed as: H_o: There is no significant relationship between MPS(Market Price of Share)and select independent variables.H_1: There is a significant relationship between MPS(Market Price of Share)andselect independent variables.

RESEARCH DESIGN

A descriptive research has been adopted for the purpose of knowing the influence of the various financial factors on the stock market prices. The descriptive study, which is largely used to draw the inferences about the possible relationship between variables. It is the simplest type of research, which is designed to collect descriptive data and provide information for formulating more sophisticated studies. Further, it involves formulation of more specific hypothesis and testing them through statistical inference.

SAMPLE SELECTION

For empirical analysis, the data is collected by using the convenience sampling. As the name indicates, in this convenience sampling, the sample units are selected based on the convenience of the researcher. The selection of the sample has done in the top performing listed steel companies with respect to market capitalization in the Bombay stock exchange. There are certain conditions to be satisfied to in selection of the unitswhich are:(i) It is listed one in Bombay stock exchange, and (ii) The financial data required for the study pertaining to the period 2003-04 to 2012-13 shall be available. After the thorough enquiry andtested the above stated conditions, the following are the steel companies selected for the empirical analysis.

- Ferro Alloys Corporation Limited (FACOR)
- JSW Steel Limited.
- Rathi Steel and Power Ltd.
- Steel Authority of India Ltd
- Tata Steel Ltd.

SOURCES OF DATA

Secondary data: The data for the study have been col-

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lected from the secondary source. The required data for the empirical analysis have been gathered from secondary sources, viz., CMIE Prowess, BSE Annual reports, SEBI reports, Research Journals and financial newspapers.

STATISTICAL TOOLS:

To draw the inference on the analysis, the statistical tools, like Mean, Standard Deviation, Co-efficient of Correlation and Multiple regression are used.

Co-efficient of Correlation and Multiple regression analysis

Correlation and a linear multiple regression models have been selected to measure the individual as well as combined effects of explanatory variables on the dependent variables. The market price of share has been taken as the dependent variable, while other factors have been taken as explanatory or independent variables. The analysis has been employed to study the effect, keeping in view that this method has certain advantages, which are not available in any other multivariate discriminate analysis. To avoid the problem of multico-linearity, backward elimination procedure of regression has been used.

Mathematically, the equation is:

$MPS = a_o + b_1 DPS + b_2 EPS + b_3 BV + b_4 SIZE + b_5 DY + b_6 DP + b_7 RONW + b_8 P/E + e$

Where, MPS is dependent variable.

$$a_o = \text{constant term}$$

$b_1, b_2, b_3, b_4, b_5, b_6, b_7, b_8$ are the regression coefficients of DPS, EPS, BV, SIZE, DY, DP, RONW,P/E respectively.

e= error term

The statistical significance of regression coefficients have been worked out and tested with the help of t test. The coefficient of determination is computed to determine the percentage of variation in the dependent variables as explained by independent variables. Also adjusted R square and change statistic values are measured. The 'F' values are also computed to test the significance of R square with 'F' distribution at one, five and ten percent level of significances.

FINANCIAL VARIABLES

The following financial variables are taken for testing the impact on the stock prices in the selected units of the study. For the purpose of empirical analysis the dependent and independent financial variables are calculated with the help of ratio analysis. The following are the various financial variable measured in the study.

(i) MARKET PRICE (MPS):

The market price of the share is mainly determined by the forces of demand and supply of a particular security in the market. The market price reflects the collective wisdom and knowledge of the market. The price of a share at a particular moment represents the balance struck between the buyers and sellers. Daily price fluctuations arise because of changes in the buying and selling pressure. Due to these fluctuations it becomes difficult to decide as to which market price should be regressed as a measure of dependent variable. In the present study, arithmetic means of high and low market price of share during the financial year of the firm has been taken. Mathematically it is calculated as:

$$P = \frac{P_H + P_L}{2}$$

Where, P_H is the greatest market price, P_L is the lowest market price during the year which relates to the 't' period.

(ii) DIVIDEND PER SHARE (DPS):

Dividend is the portion of the profit after taxes which are distributed to the share- holders for their investment and bearing risk in the company. The amount of dividend paid to the share holders depends upon the dividend policy pursued by a company. The stable dividend policy helps in resolving uncertainty from the minds of the investors and also plays an important role in creating a healthy investment climate. The dividend rate of a company has a significant influence on the market price of a share. The dividends generally influence the share price in a positive direction as depicted in earlier empirical works.

The dividend per share is arrived as follows:

$$DPS = \frac{\text{Total amount of dividend paid to equity shareholders}}{\text{Number of equity shares outstanding}}$$

(iii) EARNING PER SHARE (EPS):

The equity shareholders are the sole claimant to the net earnings of the corporation after making payment of dividend to the preference share-holders. The Earnings Per Share is one of the best measures of profitability. It also helps in projecting the value of security, which depends upon the expected future benefit and risk associated with it. Higher the magnitude of expected future benefits, higher will be value of a security and vice-versa. The increasing Earnings per Share generally indicates the growth of a company and resulting in high market price.

The earnings per share is arrived at as follows.

$$EPS = \frac{\text{Net Profits after Tax} - \text{Preference Dividend}}{\text{Number of Equity Shares Outstanding}}$$

The earnings per share have a positive relationship with market price, i.e., higher the earning per share, higher willthe market price.

(iv) BOOK VALUE (BV):

It is also known as net asset value per share because it measures the amount of assets, which the corporation has on behalf of each equity share. BV shows the investment per share made in the business by the shareholders. A high book value usually indicates that the company has a good record of past performances, i.e. high reserves therefore high market price . Various studies have considered this ratio as a determinant of share price.

It is calculated as follows:

$$\text{Book Value per Share} = \frac{\text{Equity Share Capital} + \text{Shareholders Reserves}}{\text{Total Number of Equity Shares Outstanding}}$$

(v) DIVIDEND PAYOUT RATIO (DP):

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Dividend payout shows the percentage share of the net profits after taxes and preference dividend paid out as dividend to equity shareholders. It can be calculated by dividing the total dividend paid to the equity shareholders by the total profits/earnings available for them. Alternatively, it can be found out by DPS by EPS. .Linter (1956) linked dividend changes to earning while Shapiro valuation model (1962) showed dividend streams discounted by the difference in discount rate and growth in dividend should be equal to share price. This predicts direct relation between payout ratio and the Price- Earnings multiple. Conversely it means that there is an inverse relation between payout ratio and share price changes.

$$\text{Dividend Payout} = \frac{\text{Total Dividend paid to Equity Shareholders}}{\text{Total Net Profit Belonging to Equity Shareholders}} \times 100$$

$$\text{Dividend Payout} = \frac{\text{Dividend per Share}}{\text{Earning Per Share}} \times 100$$

(vi) RETURN ON NETWORTH (RONW)

The return on net worth ratio states the return that shareholders could receive on their investment in a company, if all of the profit earned were to be passed through directly to them. Thus, the ratio is developed from the perspective of the shareholder, not the company, and is used to analyze investor returns. The formula is:

$$\text{RONW} = \frac{\text{Net Profit after Tax}}{\text{Shareholder Capital} + \text{Retained Earnings}}$$

(vii) PRICE EARNINGS RATIO (P/E):

The Price Earnings ratio expresses the relationship between the market price of a company's share and its earnings per share. The ratio is a conventional measure of stock values because it gives an indication of share prices measured against the earning power of the stock. It is measured as follows:

$$\text{P/E} = \frac{\text{Market Price of Share}}{\text{Earnings Per Share}}$$

(viii) SIZE:

Size of the firm plays an important role in an investment criterion. Large companies generally offer better investment opportunities to investors than the smaller ones. The companies by virtue of their higher production generally occupy a stronger and dominant position in the stock market. The shares of large companies are actively traded in the stock exchange; they provide more liquidity and marketability to the investors. Thus the temptation to buy shares of large companies leads to increase its market price of share. The size of the firm can be measured in many ways, e.g. through turnover, paid-up-capital, capital employed, total assets, net sales, etc. The measure to be selected precisely depends upon the nature of the problem at hand. In the present study size is measured with the help of total sales.

ANALYSIS AND INTERPRETATION:

Table-1 shows the calculations of co-efficient of correlation between market price of share and book value, return on net worth, size of the firm.

Table 1: Details of Coefficient of Correlation between Market Price and the selected variables

Variables	Market Price of Share	Book Value(BV)	Return on Net Worth (RONW)	Size of the Firm
Market Price of Share (MPS)	1.000	0.875**	0.146*	0.374**
Book Value(BV)	0.875**	1.000	0.091	0.410**
Return on Net Worth (RONW)	0.146*	0.091	1.000	0.097
Size of the Firm (SIZE)	0.374**	0.410**	0.097	1.000
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

The Pearson co-efficient of correlation is used to find out the relationship between market price of share and book value, return on net worth, size of the firm at 1% and 5% level of significance. It can be seen from the data in table-1 that there is a positive correlation between the independent variables BV (correlation coefficient = 0.875), RONW (correlation coefficient = 0.146),SIZE (correlation coefficient = 0.374).The BV and SIZE are having the significant relationship with dependant variable, i.e., MPS at 5% significant level. Whereas, the RONW is having a significant relationship with dependant variable MPS at 1% significant level. It indicates the independent variables, viz., BV,RONW and SIZE are showing an impact on dependant variable MPS.

Regression Analysis

H1: There is a positive relationship between BV and MPS
H2: There is a positive relationship between SIZE and MPS
H3: There is a positive relationship between RONW and MPS

Regression Model: MPS = a0 + b1 BV + b2 SIZE + b3 RONW +e

Table 2:Anova, Co-efficient for each variable (BV,SIZE,RONW) with dependant variable (MPS)

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	-57.803	55.499	--	-1.042	.299
Book Value	2.297	.100	.863	22.933	.000
Size of the Firm	3.023	8.902	.013	.340	.735
Return on Net Worth	1.973	1.032	.066	1.912	.057

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R Square – Value	.770
F - Value	218.320
F- Sig	.000

a. Dependent Variable: Market Price of Share (MPS)
b. Predictors: (Constant), Return on net worth, Book value, Size of the firm.

The regression is used to find out the coefficients and analysis of variance (ANOVA) used in testing the hypotheses and also to measure the differences and similarities between the sample companies according to their different characteristics. Table-2 presents the data onAnova, Coefficient for each of the selected financial variable with the dependant variable, i.e., market price of the share. From the data in table-2 it is found that the R-Square, which is the coefficient of determination of the variables is 0.770. The R-Square a measure of the overall fitness of the model indicates that it is capable of explaining to the extent of 77%of the variability of the share prices in the selected companies. This means that the model explains about 77% of thesystematic variation in the dependent variable. On the other hand, about 23% of the variation in MPS of the sampled companies are accounted by other factors not captured by the model. This result is complimented by the adjusted R-square of about 76.6%, which is the essence of the proportion of total variance that is explained by themodel.

Similarly, the findings from the Fishers ratio (i.e. the F-Statistics, which is a proof of the validity of the estimated model) as reflected in table-2 indicates that the F is about 218.32 and a p-value that is less than to 0.05 (P-value =0.000), this invariably explains that the explanatory variables are significantly associated with the dependent variable. That means, they strongly determine the behavior of the market values of share prices.

However, the empirical findings provided in table-2 shows that there is a significant positive relationship between BV and the MPS of the listed selected companies in Bombay stock exchange. This is evident in the t-statistics value of 22.933 with a P-Value 0.000, which is significant at 5% level of significance. This outcome basically implies that with all other variables held constant, an increase or a change in BV of companies, say by 1% will be on the average bringing about 86.3% increase in the MPS. This increase in the BV of selected companies will also lead to a positive improvement in the MPS. From this, it is evident that the BV of selected companies has a significant positive impact on the MPS. Hence, $H_1$is accepted.

Further, table-2also shows a significant positive relationship between RONW andMPS. This is evident in the t-statistics value of 1.912 and the P-value of 0.057. This outcome basically implies that an increase in RONW will invariably bring out a significant increase in the MPS. In other words, with all other variables held constant, an increase or a change in RONW of selected companies, say 1% will on the average bring about a 6.6 % increase in the MPS. It is observed that, firms' book value and RONW are having a significant positive association with firm's stock price. Hence,it can be accepted H_3. Since, the book value per share depicts the owner's funds, a higher book value per share isperhaps perceived by an investor to be an indicator of the sound financial position of a company for investing.

Another empirical finding from the regression analysis shows a positive relationship between SIZE andMPS. This is evident in the t-statistics value of 0.340 and the P-value of 0.735. This outcome basically implies that an increase in SIZE will variably bring about ansignificant increase in the MPS. However, this indicates that the firm SIZEhas no explanatory power towards stock price movement. Hence, it can't be accepted the H_2.

FINDINGS:

The BV and SIZE is having significant relationship with dependant variable MPS at 5% significant level.There is a positive correlation between the independent variables BV (correlation coefficient = 0.875), RONW (correlation coefficient = 0.146), SIZE (correlation coefficient = 0.374) and stock prices.It indicates that the independent variables, viz., BV, RONW and SIZE are showing an impact on dependant variable MPS.

The t-statistics value of 22.933 with a P-value 0.000, which is significant at 5% level of significance. It showsthat there is a significant positive relationship between BV and the MPS of the listed selected companies in Bombay stock exchange. Firms' book value and RONW are having a significant positive association with firm's stock price as it is evident in the t-statistics value of 1.912 and the P-value is 0.057.

CONCLUSION:

Understanding the impact of various fundamental variables on share price is very much helpful to the investors as it will help them in taking profitable investment decisions. This study analyses the impact of selected accounting variables, like book value, dividend per share, earnings per share, size of the firm, dividend payout ratio, dividend yield, return on net worth and P/E ratio on the equity prices of listed companies in Bombay stock exchange. The results confirm the significance of book value and return on net worth as determinants of market share price by the statistical tool of multiple regression.

SUGGESTIONS:

The market share price is(MPS) is significantly associated with the book value of the steel company, hence it is suggested to the investors that focus the book value of the share, while taking the investing decision.Therefore, the present analysis suggests that the return on net worth (RONW) in case of investment of steel companies in India as it determined the market price per share, so that the investor get profits in equity share prices.

Hence, the present study confirms that the study of accounting factors prove to be beneficial for theinvestors in Bombay stock exchange, as these factors posses strong explanatory power and hence, can be used to make accuratefuture forecasts of stock prices. Therefore, investors are suggested to take the accounting variables ofcompany as a base before investing in shares.

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