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An Explicit Model on Fundamental Factors Affecting Stock Prices of BSE Listed Companies in India: An Inter Industry Approach

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Abstract
This paper presents an explicit model for the role of fundamental factors in price movement of shares with the annual performance of companies. Studying the fundamental factors which influence the market price and also the performance of the company is a part of any investor before going for investment. The investor should look at the price movements of the particular company over the years and should go for better portfolio. The objective of this paper is to examine inter industry differences with regard to the impact of fundamental factors on stock prices. The study concludes that Book Value, Dividend Per Share and Growth are main determinants of share prices of banking and financial companies. PER, Book Value, COVER and Growth are the important determinants of share prices of Petroleum and Mining companies. PER, Book Value, COVER and DPS are also the significant determinants of share prices of Infrastructure Companies. In case of Metal and Chemical Companies, Book Value, DPS and PER are being the key determinants of share prices. Book Value, ROCE and Earning Per Share are the chief determinants of share prices of IT and communication Companies.
Keywords: Fundamental, Stock Prices, Book Value, DPS, PER, COVER.

1. Introduction

The stock market is a living thing. It is continuously moving and changing. It is affected not only by the success of the companies that are listed, but also by its environment. When you are able to recognize stock price factors, you will be able to improve your performance in the stock market. If you recognize and understand these stock price factors, it will help you decide whether the price movement is a buy, sell or sit tight signal. Price reflects all the information that is known about a company and their ability to make money in the future. As information about a company's prospects is made public, prices will change. Uncertainty of the future can bring added volatility while psychological factors can amplify the effect of new information. Finally, supply and demand considerations can cause fluctuations not motivated by new information. Understanding why prices change is essential to success in the stock market. Therefore, it is important for investors to look for the sectoral trends in the market in order to get good returns on their investments. Krishan (1984) examined the share prices of general engineering industry and cotton textiles industry. The study found that, in both the industries, book value per share and dividend are significant factors that determine share prices. In the case of cotton textiles industry, yield was also observed to be significantly influencing share prices. Kumar and Hundal (1986) examined the impact of dividend per share, earning per share, net sales per share, book value per share, earning per share, net worth, retention ratio, leverage ratio and growth in total assets on market price of share by using the linear regression model. The analysis also showed the sensitiveness of the market towards the dividend policy of the three groups. Growth showed a positive influence only in case of textile industry. Leverage in general had a negative influence on the share prices. For the chemical industry, Chawla & Srinivasan (1987) examined the relation between share prices, dividend and retained earnings. Both dividend and retained earnings were found to be significant determinants of share price.

2. Literature Review

The link between fundamental factors and share price changes has been extensively investigated in the financial literature. Sen and Ray (2003) examined the key determinants of stock price in India. The study is based upon the stocks compromising the BSE index over a period 1988-2000. The empirical study revealed dividend payout was an important factor affecting stock prices. Further, they found earning per share has a very weak impact on the share prices. The study explored one of the crucial factor dividend payout ratios having impact on Indian stock price. Dutta (2004) had made a survey on three groups viz; individuals, brokers and financial institutions to study the impact of micro and macro factors on share price. Most of the individual and brokers considered the role of random elements in share price as very important in post reform period. Mehta &Turan (2005) identified market capitalisation, market price to book value ratio and price-earning ratio as major factors influencing share prices by examining share prices of the firms listed on the Bombay Stock Exchange. Sharma and Singh (2006) used data from 160 Indian firms between 2001 and 2005 and found that earnings per share, price-earnings ratio, dividend per share, dividend coverage, dividend payout, book value per share, and firm size are the determinants of share prices. They revealed that Book value and Earnings are important indicators of market price of share as they are an indicator of the good financial health of the companies. Dividend per share is most significant

variable of market price of share, which indicates that the companies should use a liberal dividend policy to attract the primary as well as secondary market. Price-earnings ratio also explained the investors' anticipate about the growth in the firm's earnings. Srivastava (2010) concluded that emerging economies like India in long term are more affected by domestic macro economic factors than global factors. The main domestic macroeconomic factors affecting the stock market in long run are industrial production; wholesale price index and interest rate. Sharma (2011) examined the empirical relationship between equity share prices of different industry groups and explanatory variables such as book value per share, dividend per share, earning per share, price earnings ratio, dividend yield, dividend payout, size in terms of sale and net worth for the period 1993-2008. The results revealed that earning per share, dividend per share and book value per share has significant impact on the equity price of different industry groups in India. Nisa (2011) in her research on Karachi Stock Exchange used the following variable: P/E Ratio, Net Profit after Tax, Inflation, DPS, GDP and Annual Turnover as stock price determinant. Aurangzeb (2012) presented a study from the period of 1997 to 2010 of 3 South Asian countries namely, Pakistan, India and Sri Lanka. Regression results indicate that foreign direct investment and exchange rate have significant positive impact on performance of stock market in South Asian countries while; interest rate has negative and significant impact on performance of stock market in South Asia. Results also indicate the negative but insignificant impact of inflation on stock market performance in South Asia. Malhotra &Tandon (2013) have presented a study with an attempt to determine the factors that influence stock prices in the context of National Stock Exchange (NSE) 100 companies. A sample of 95 companies was selected for the period 2007-12 and using linear regression model the results indicate that firms' book value, earning per share and price-earnings ratio are having a significant positive association with firm's stock price while dividend yield is having a significant inverse association with the market price of the firm's stock. Uddin, Rahman, Hossain (2013) this study has put a great stride to identify what determines the share prices of stock market focusing exclusively on financial sector of Bangladesh. Data have been collected from companies like Bank, Insurance, Leasing Companies associated with financial sector ranging from 2005 to 2011 from Dhaka Stock Exchange (DSE). Some pertinent variables like Net Profit after Tax (NPAT), Price earnings ratio (P/E), Net asset value (NAV), Earnings per share (EPS) were selected from previous literature for deciding stock price (SP) determinants. A regression model along with some descriptive statistical tools was applied using SPSS. Findings show that Earnings per share (EPS), Net asset value (NAV), Net profit after tax (NPAT) and Price earnings ratio (P/E) have strong relationship with stock prices.

3. Objective of the study

The objective of this study is to examine inter industry differences with regard to the impact of fundamental factors on stock prices.

3.1 Hypothesis of the study:

H01 - There is no significant inter industry differences of the fundamental factors on stock prices of BSE 200 companies.

3.2 Research Methodology

The fixed effects model as well as the random effects model has been used to explore the fundamental determinants of share price due to the fact that former takes into the firm specific effect and the later consider the time effect.

3.3 Scope of study

3.3.1 Fundamental Factors

Eight Key variables such as: Book Value Per Share (BV), Dividend Per Share (DPS), Earnings Per Share (EPS), Cover (C), Payout Ratio (P), Price Earning (P/E), Return on Capital Employed (ROCE) and Growth (G) have been included in the study.

3.3.2 Sample Profile

To examine the hypothesis, the study has used secondary data. The sample was drawn from the companies listed on the Bombay Stock exchange. The yearly data has been used on the concerning aspect, a sample of thirty nine companies was selected for the purpose of the study with the fact that the companies have been listed continuously during the study period. In total four sectors have been finalized which is as follows:

- FMCG and Miscellaneous Sector
- Auto & Ancillaries Sector
- Drugs and Pharmaceuticals Sector
- IT and Communication& Entertainment Sector

3.3.3 Time period

Time period of the study has covered fifteen financial years i.e. from 1st April 1998 to 31st March 2013.

3.4 Data Collection

The data relating to the companies which are listed in BSE 200 will be collected on yearly basis from updated version 'PROWESS 4' database of the Centre for Monitoring Indian Economy and Bombay Stock Exchange Official

3.5 Model Specification

The panel data analysis techniques, viz. Fixed Effects model and Random Effects model have been employed to investigate the objective. The general specification of the parameters of the model in present case is as follows:

$SPit = \alpha i + \beta 1\ BVit + \beta 2\ EPSit + \beta 3\ DPSit + \beta 4 COVERit + \beta 5\ DPRit + \beta 6 PERit + \beta 7\ ROCEit + \beta 8\ GROWTH + \beta\ uit$ (3)

In the above specification SP represents the stock prices. The explanatory variables, BV, DPS, EPS,COVER, DPR, PER, ROCE and GROWTH denotes Book value per share, Dividend per share, Earnings per Share, Cover, Dividend Payout Ratio, Price-earnings ratio, Return on Capital employed, and Growth (Sales), respectively. Eviews 6 software was used to analyse the data for all the above purposes.

3.5.1 Fixed Effect Model - This model allows for heterogeneity or individually among 80 companies by allowing to have its own intercept value. Another term fixed effect is due to the fact that although the intercept may differ across different companies but intercept does not vary over time, it is time invariant.To take into account the differing intercepts, one can use dummy variables. The FEM using dummy variables is known as the least-squares dummy variable (LSDV) model. FEM is appropriate in situations where the individual- specific intercept may be correlated with one or more regressors. The Fixed Effects method allows us to take into consideration the firm-specific effects on regression estimates. However, this model does not take into consideration the time effect and often results in a loss in a large number of degrees of freedom if N is large.

3.5.2 Random Effect Model - In this model, all the 51 companies have a common mean value for the intercept. In ECM it is assumed that the intercept of an individual unit is a random drawing from a much larger population with a constant mean value. The individual intercept is then expressed as a deviation from this constant mean value. One advantage of ECM over FEM is that it is economical in degrees of freedom, as we do not have to estimate N cross-sectional intercepts. We need only to estimate the mean value of the intercept and its variance.ECM is appropriate in situations where the (random) intercept of each cross-sectional unit is uncorrelated with the regressors. Hence, the Random Effects Model, which, besides incorporating the firm-specific effects, takes into consideration the time effects and is an appropriate specification if we are drawing N individuals randomly from a large population (Maddala, 2005; Baltagi, 2003).

3.5.3 Hausman Test - This test is used to check which model (fixed effect or random effect model) is suitable to use. If p value found statistically significant, then fixed effect model will be used otherwise random effect model will be suitable. If correlated (H0 is rejected), a random effect model produces biased estimators, violating one of the Gauss-Markov assumptions; so a fixed effect model is preferred. Hausman's essential result is that the covariance of an efficient estimator with its difference from an inefficient estimator is zero (Greene 2003).

4. Emperical Results

Table 4.1 Fundamental Determinants of Share Prices of FMCG and Miscellaneous Sector in India (1998-2013)

	Fixed Effect Model		Random Effect Model	
Variables	Coefficient	t value	Coefficient	t value
Constant	351.8227	1.405422	357.2569	0.413259
Book Value	0.115764	0.110490	0.097330	0.093237
DPS	55.5485*	1.864368	55.2948*	1.861241
EPS	-3.493702	-0.877457	-3.426536	-0.861526
Cover	1.753564	0.345658	1.664131	0.329109
DPR	159.081**	0.796333	158.732**	0.795176
PER	2.27625*	0.726093	2.26596*	0.724700
ROCE	5.39122**	0.808078	5.31144**	0.802008
Growth	0.177808	0.105520	0.177091	0.105154
Hausman test (p-value)	0.680069 .9996			

***significant at 1 percent level of significance,** significant at 5 percent level of significance, * significant at 10 percent level of significance

Source : All the numerical figures of table are calculated from eviews6 version

Table 4.1 presents the estimate of fixed effects as well as random effects models for the FMDG and Miscellaneous companies. To select appropriate model for empirical analysis Hausman specification test has

been conducted. The results of Hausman test revealed that the difference in coefficients between fixed effects and random effects is systematic and provided evidence in favour of random effects model for FMCG and Miscellaneous Companies. The empirical results reveal that the DPR and ROCE have positive and significant impact on the share price at five percent level. The variable DPS has positive impact and significant at ten percent level. However, the variables book value, COVER and growth has a positive relationship with share price and are insignificant. The variable EPS has a negative impact on share price and is insignificant. The study results suggest that DPR, ROCE and dividend per share are being the important determinants of share prices of FMCG and Miscellaneous Companies.

Table 4.2 Fundamental Determinants of Share Prices of Auto & Ancillaries Sector in India (1998-2013)

	Fixed Effect Model		Random Effect Model	
Variables	Coefficient	t value	Coefficient	t value
Constant	216.2346	3.148995	162.9149	3.090697
Book Value	0.80384**	2.757028	0.76424**	2.973632
DPS	1.365293	0.313346	2.641518	0.726558
EPS	1.69841**	1.031409	-0.486015	-0.321725
Cover	-4.16211**	-2.668083	-1.96235**	-1.523928
DPR	-3.899001	-0.033027	-80.81848	-0.761392
PER	-3.29722*	-1.442448	1.80939**	0.977851
ROCE	-0.195748	-0.127266	0.797284	0.708492
Growth	0.68066**	1.025069	0.190438	0.302920
Hausman test (p-value)	48.434176 .0000			

***significant at 1 percent level of significance,** significant at 5 percent level of significance, * significant at 10 percent level of significance

Source : All the numerical figures of table are calculated from eviews6 version

Table 4.2 presents the estimate of fixed effects as well as random effects models for the auto and ancillaries companies. To select appropriate model for empirical analysis Hausman specification test has been conducted. The results of Hausman test revealed that the difference in coefficients between fixed effects and random effects is systematic and provided evidence in favour of fixed effects model for auto and ancillaries companies. The empirical results reveal that the Book Value, EPS and Growth have positive and significant impact while PER and COVER have a negative and significant impact on the share price at five and one percent level. The variable DPS has a positive relationship with share price and statistically insignificant. However, the DPR and ROCE have a negative impact on share price and are insignificant. The study results suggest that Book Value, earning per share and Growth are being the important determinants of share prices of auto and ancillary sector.

Table 4.3 Fundamental Determinants of Share Prices of Drugs and Pharmaceuticals Companies in India (1998-2013)

	Fixed Effect Model		Random Effect Model	
Variables	Coefficient	t value	Coefficient	t value
Constant	587.7163	2.370515	681.8383	3.642749
Book Value	3.84452*	1.906085	6.51784**	3.756022
DPS	11.2628**	0.670081	-19.1550*	-1.754130
EPS	2.194749	0.310181	8.998034	1.365606
Cover	-9.38086**	-2.677871	-10.6646***	-4.312349
DPR	-82.65890	-0.359215	0.492060	0.002269
PER	2.743599	0.420321	-10.8668**	-2.137061
ROCE	1.287573	0.134453	-8.008598	-0.906031
Growth	-0.56646**	-0.831716	-0.316300	-0.475649
Hausman test (p-value)	86.947831 .0000			

***significant at 1 percent level of significance,** significant at 5 percent level of significance, * significant at 10 percent level of significance

Source : All the numerical figures of table are calculated from eviews6 version

Table 4.3 presents the estimate of fixed effects as well as random effects models for the Drugs and Pharmaceuticals Companies. The results of Hausman test revealed that the difference in coefficients between fixed effects and random effects is systematic and provided evidence in favour of fixed effects model for Drugs and Pharmaceuticals Companies. The empirical results reveal that the DPS and Book Value have a positive and significant impact on the share price at five and ten percent level. The variable COVER has negative impact on

share price and are significant at five percent level. However, the EPS, PER and ROCE have a positive impact on share price and are insignificant. The variable DPR has negative impact on share price and are insignificant. The study results suggest that Book Value, dividend per share and COVER are being the important determinants of share prices of Drugs and Pharmaceuticals Companies.

Table 4.4 presents the estimate of fixed effects as well as random effects models for the IT and communication Companies. Our first concern here is that the choice between fixed effects and random effects models. To select appropriate model for our empirical analysis we conducted Hausman specification test. The results of Hausman test revealed that the difference in coefficients between fixed effects and random effects is systematic and provided evidence in favour of fixed effects model for IT and communication Companies. The empirical results reveal that the Book Value and ROCE have positive and significant impact on the share price at one and five percent level. The variable EPS has a negative impact on share price and significant at 5 percent level. However, the variables DPS, COVER, DPR and PER have a positive relationship with share price and are insignificant. The variable Growth has a negative impact on share price and is insignificant. The study results suggest that Book Value, ROCE and Earning per share are being the important determinants of share prices of IT and communication Companies.

Table 4.4 Fundamental Determinants of Share Prices of IT and Communication Sector in India (1998-2013)

	Fixed Effect Model		Random Effect Model	
Variables	Coefficient	t value	Coefficient	t value
Constant	-217.7815	-1.176439	-123.7166	-0.481948
Book Value	2.48132**	2.155078	2.31792**	2.054763
DPS	10.90059	0.669211	4.903156	0.309622
EPS	-10.6780**	-2.506742	-10.9928**	-2.617866
Cover	1.220645	0.515649	1.235629	0.525209
DPR	30.20375	0.240612	10.03563	0.080617
PER	0.645720	0.646800	0.376382	0.380435
ROCE	32.4562***	5.128974	31.3538***	4.981662
Growth	-0.049859	-0.586288	-0.060411	-0.713778
Hausman test (p-value)	8.283033 .4063			

***significant at 1 percent level of significance,** significant at 5 percent level of significance, * significant at 10 percent level of significance

Source : All the numerical figures of table are calculated from eviews6 version

5. Acceptance/ Rejection of Null Hypothesis

On the basis of findings of the study the Null Hypothesis (Ho) i.e. there is no significant inter industry differences of the fundamental factors on stock prices of BSE 200 companies, has been rejected and Alternative Hypothesis (Ha) i.e. there is significant inter industry differences of the fundamental factors on stock prices of BSE 200 companies, has been accepted.

6. Conclusions

It may be concluded that in FMCG and Miscellaneous Companies, DPR, ROCE and dividend per share are being the important determinants of share prices. In auto and ancillary sector, Book Value, earning per share and Growth are being the important determinants of share prices. Similarly Book Value, dividend per share and COVER are being the important determinants of share prices of Drugs and Pharmaceuticals Companies. However in IT and Communication sector, Book Value, ROCE and Earning per share are the chief determinants of share prices.

References

Sen S. and Ray R. (2003), "Key Determinants of Stock Prices in India", The ICFAI Journal of Applied Finance, 9(7): 35-40.

Dutta S.K. (2004), "The Share price and its valuation", The Management Accountant, April 2004, Vol. 39, No. 4, pp. 274-282.

Mehta S. K. and Turan M. S. (2005), "Determinants of Stock Prices in India: An Empirical Study", The Journal of Indian Management and Strategy, 10(4): 37-43.

Singh Balwinder and Sharma Shefali(2006), "Determinants Of Equity Share Prices In Indian Corporate Sector-An Empirical Study",http://www.scribd.com.doc/28680470/Micro-Economic-Determinants-Changed-Final-Accepted, 2006.

Srivastava A. (2010), "Relevance of Macro Economic factors for the Indian Stock Market",Decision, Vol. 37, No.3,December, 2010

Nisa M. (2011), " The Determinants of Stock Prices in Pakistan", Asian Economic and Financial Review, 1 (4), 276-291.

Sharma D. S. (2011), "Determinants of Equity Share Prices In India", Journal of Arts, Science & Commerce, 2(4), 51-60.

Dr. Aurangzeb (2012), "Factors Affecting Performance of Stock Market: Evidence from South Asian Countries", International Journal of Academic Research in Business and Social Sciences September 2012, Vol. 2, No. 9,ISSN: 2222-6990.

Srinivasan P. (2012), "Determinants of Equity Share Prices in India: A Panel Data Approach", The Romanian Economic Journal, Year XV no. 46, 205-228, 2012.

Malhotra Nidhi, TandonKamini, (2013), " Determinants of Stock Prices: Empirical Evidence from NSE 100 Companies", International Journal of Research in Management & Technology (IJRMT), ISSN: 2249-9563 Vol. 3, No.3,June 2013.

Motwani R.K. (2013), " Fundamental Determinants of Equity Investments among Infrequent Small Scale Investors", Research Journal of Management Sciences,ISSN 2319–1171 Vol. 2(4), 1-6, April (2013).

Md. Reaz Uddin, S.M. ZahidurRahman,Md. Rajib Hossain (2013), "Determinants of Stock Prices in Financial Sector Companies in Bangladesh- A Study on Dhaka Stock Exchange (DSE)", Interdisciplinary Journal of Contemporary Research in Business, Vol 5, No 3 July 2013.

List of industry-wise classification of Companies under study:-

Name of Industry	Details of companies
IT and communication Industry	Financial Technologies (India) Ltd.
	Hexaware Technologies Ltd.
	Infosys Ltd.
	Wipro Ltd.
	Sun T V Network Ltd.
	Tata Communications Ltd.
	Zee Entertainment Enterprises Ltd.
	Bharat Heavy Electricals Ltd.
	Crompton Greaves Ltd.
	Havells India Ltd.
FMCG and Miscellaneous industry	A C C Ltd.
	Aditya Birla Nuvo Ltd.
	Ambuja Cements Ltd.
	Asian Paints Ltd.
	Bata India Ltd.
	Britannia Industries Ltd.
	Crisil Ltd.
	Future Retail Ltd.
	Grasim Industries Ltd.
	Marico Ltd.
	Nestle India Ltd.
auto and ancillaries industry	Ashok Leyland Ltd.
	Hero Motocorp Ltd.
	Tata Motors Ltd.
	Apollo Tyres Ltd.
	Exide Industries Ltd.
	Cummins India Ltd.
	Container Corpn. Of India Ltd.
	Hindustan Unilever Ltd.
	Bharat Electronics Ltd.
Drugs and Pharmaceuticals industry	AurobindoPharma Ltd.
	Glaxosmithkline Pharmaceuticals Ltd.
	Cipla Ltd.
	Ipca Laboratories Ltd.
	Lupin Ltd.
	Ranbaxy Laboratories Ltd.
	Wockhardt Ltd.
	Chambal Fertilisers& Chemicals Ltd.
	Coromandel International Ltd.

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