

CAUSALITY AMONG BOOK VALUE, EARNING PER SHARE AND STOCK PRICE: A STUDY OF INDIAN COMPANIES

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ABSTRACT-- *This research is an attempt to examine the relationship among Book Value (BV), Earning Per Share (EPS) and Stock Price of the selected Indian Companies listed in stock exchange. it is very important for investor to know the factors influencing stock price. To check the relationship among BV, EPS and stock price various statistical tools i.e. regression analysis, correlation and unit root have been applied with the help of E-views. Sample size is of 114 companies listed in Indian stock exchange on the basis of their incorporation before the year of 2000 and data of 19 years have been collected. Findings of the study indicates positive relationship among dependent and independent variable.*

Keywords-- *Stock price, Regression, Book value, EPS, correlation*

I. INTRODUCTION

Performance of stock in a capital market has been remained a dynamic area for the researchers. This study examines the relationship between book value (BV), earning per share (EPS) and stock price of the selected companies of Indian stock market. stakeholders of companies want to know the behaviour of stock i.e. knowing the movement of stock price upwards and downwards; what are the factors which influences the share price; when to buy or sell; and whether the stock is overpriced and under-priced are the key issues that have been examined. In terms of accounting, value is the worth of any goods, services and assets. Likewise, the book value of an assets is the amount which is reflected in the books of accounts (Tracy, 2013)¹⁶. Book value of assets can be calculated by deducting the amount of depreciation, amortization or any other cost incurred for assets from the total cost of assets. It is very important to understand that any accounting information regarding assets influences the decision making (Bonham et al., 2009)³.

Stock market behaviour in different market is found to be different. Researchers found difference in the stock market behaviour of emerging market and developed market because of their size, volatility and risk (Kumar and Tsetsekos, 1999; Bekaert and Harvey, 2017)^{9,2}. Various studies have examined the impact of accounting information i.e. earnings per share, book value and profitability over stock prices (Holthausen and Watts, 2001)⁷. This study examines the impact of book value of share and earnings on the stock prices during 2001 to 2019 of companies listed in stock exchange of India including BSE and NSE. This study is motivated by the literature of

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various researchers including of Choi and Jang (2006)⁴, Collins et al. (1997)⁵. It is important to study the behaviour of stock market because it generates wealth to the investors and provide pace to the economic development of country (Rousseau and Wachtel, 2000)¹⁴. Flow of capital in market also depends upon the behaviour of stock market. hence, studies related to the stock market behaviour in developing countries have remained to be of interest for researchers.

Rest of this article is organized as follow: review of literature on relationship between earnings per share, book value of assets and stock price, next section explains methodology including data collection, model and tools used for analysis of data than next section discusses the results of analysis and last section concludes.

II. REVIEW OF LITERATURE

Relevant accounting information i.e. earnings, assets value and profitability is useful to investors to take their decision regarding investment in stocks of particular companies and stock volatility helps to estimates return on investment. Return may be classified in terms of current return, which is in form of dividend provided by companies out of earnings, other one is capital return, in form of capital appreciation. Hence, investors want to know the factor influencing or related to stock price. Many studies including those of Ball and Brown (1968)¹ and other studies of (Ohlson, 1995)¹² found positive relationship between earnings, BV and Stock prices. Studies of Tamer (2014)¹⁵ and Qu and Zhang (2015)¹³ examined in emerging market. Positive return causes increase in equity price while negative return causes decrease in equity price of banks Gupta and Jayadev (2016)⁶. Volatility of stock market generates risk. Volatility is the variation of return from its mean (Kotze, 2005)⁸. Valuation theory of Miller and Modigliani, (1961)¹¹ suggested the relationship between earnings and stock value.

Book value is aggregation of retained earnings, par value and any surplus available to company than book value per share can be obtained by dividing total book value by no. of share. Measurement of cash flows provide useful information to investors because it provides the information regarding survival of company, future dividend and examines repayment capacity (Lee, 1974)¹⁰.

From the above review of literature, it can be concluded that there is relationship among BV, earnings and stock prices and following hypothesis can be formed to examine relationship:

Null: No significant relationship between BV, Earnings and stock prices.

Alternative: Significant relationship between BV, Earnings and stock prices.

III. RESEARCH METHODOLOGY

this research paper has been started with introducing the meaning of Book Value, Earnings and stock price, importance and influence of independent variable on dependent variable. Afterwards, review of literature of few previous research has been analysed to form the hypothesis then move to research methodology. We have taken 114 companies listed in BSE and NSE stock exchange of India. Many companies were included and excluded from the list. Instead on the basis of incorporation before 2001 companies were selected for study. Data of EPS and BV from 2001 to 2019 of 19 years have been collected through Prowess data base source. Stock prices of selected have been taken at the end of each year and collected from the website of Stock Exchange.

Data analysis: Data analysis starts with descriptive study which tells about characteristics of data, then moved to test of stationarity through unit root test. To examine the relationship of all the variable correlation analysis has been done. regression analysis (Hausman Random Effect) applied to check the impact of independent variable (Book Value, Earnings Per Share) on dependent variable (Stock Price).

Regression model is as follow:

$$SP_{it} = \alpha + \beta_1 EPS_{it} + \beta_2 BV_{it} + \epsilon_{it} \quad (1)$$

SP = Stock Price at the end of year.

EPS = Earnings Per Share, here earnings of companies are divided by no. of share.

BV = Book value of assets derived by dividing total amount of book value by no. of share

α = Intercept

ϵ_{it} = Error term

β_1 = coefficient of regression model.

Equation (1) is a model of regression analysis in which SP (Stock Price) is dependent variable while EPS (Earning Per Share and BV (Book Value) are the independent variable. Association of dependent variable and independent variable has been checked through OLS (Ordinary Least Square) and then Hausman Test has been applied for suitability of Fixed and Random Effect.

Table 1: Descriptive Statistics

Variab le	Mea n	Medi an	Max.	Mini .	SD	Skewne ss	Kurto sis	JB	Pro b.	Sum	Obser v.
EPS	20.4 1	13.09	378.73	- 378. 6	34.9 1	2.081	36.22	101116 .1	0.00 *	44209. 22	2165
SP	401. 07	216.3	15359. 25	- 0	637. 57	8.84	160.85	227597 9	0.00 *	868333 .9	2165
BV	141. 21	97.5	3631.2 5	- 223. 82	197. 16	8.00	115.47	116434 7	0.00 *	305726 .1	2165

(Source: Computed by Author)

*significance level at 5%

Above table shows the descriptive statistics of data. Descriptive statistics shows the characteristics of data in terms of Mean, Median, Min. Max. and all the variables are significant at 5% significance level (p-value < .05).

Table 2: Results of Panel unit root test

Variable	Statistic	Prob.	Cross- sections
SP	-4.51	0.00*	114
EPS	-8.11	0.00*	114

BV	-8.07	0.00*	114
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(Source: Computed by Author)

*Significance level at 5%

Unit root test of panel data shows the stationarity of data. Above table 2 shows the result of unit root by Levin, Lin & Chu t. results indicates that data of SP, EPS and BV do not have unit root and all the null hypothesis are rejected at 5% significance level (p-value < .05).

Table 3: Results of correlation analysis among EPS, SP and BV

variables	EPS	SP	BV
EPS	1.00	0.50	0.59
SP	0.50	1.00	0.36
BV	0.59	0.36	1.00

(Source: computed by author)

Correlation analysis is very useful tool to understand the relationship between two or more variables. In the above table 3 EPS and BV are positively correlated with SP which mean that when earnings and book value of share increases positively, stock price also moves upwards and vice-versa.

Table 4: Result of Panel Regression (OLS)

OLS			
Variable	Coefficient	t-Stat.	Prob.
C	187.52	12.75	0.00*
EPS	7.95	18.97	0.00*
BV	0.36	4.88	0.00*
R²	0.26		
Ad. R²	0.26		
F-stat (Prob.)	379.45 (0.00*)		
DWS	1.48		

(Source: Computed by Author)

*Significance level at 5%

Above table 4 represents the results of regression analysis using OLS (ordinary least square). Regression analysis used to examine the dependency of dependent variable over independent variables. Based on review of literature of (Ball and Brown,1968;¹ Ohlson, 1995;¹² Qu and Zhang, 2015;¹³ Gupta and Jayadev, 2016;⁶ Kotze, 2005⁸) regression model (equation 1) has been applied. Above results indicates that coefficient value of EPS and BV is positive and significant at 5% significance level (p-value < .05). it also interprets that upward movement of earnings and book value will lead increase in stock price of selected companies during 2001-19. R square value represents 26% relationship among the dependent and independent variable.

Table 5: Result of Hausman test (comparison of Fixed and Random Effect)

Panel Test Summary	Chi-Sq. Stat.	Chi-Sq. d.f.	Prob.
Random Cross-section	46.12607	2	0
OLS			
Variable	Coefficient	t-Stat.	Prob.
C	232.31	15.60	0.00*
EPS	5.83	13.90	0.00*
BV	0.35	4.57	0.00*
R²	0.42		
Ad. R²	0.38		
F-stat (Prob.)	12.98 (0.00*)		
DWS	1.78		

(Source: Computed by Author)

*Significance level at 5%

To test the suitability of fixed and random effect Hausman test has been applied. Regression model carries two option to test impact of unidentified variable i.e. fixed and random effect. Above table shows the results of hausman test. Our null hypothesis, random effect model is suitable has been rejected at 5% significance level (p-value <.05). it also shows that fixed effect model is more appropriate than random effect model. R square value is .42 (42%), adjusted R square value is 0.38 (38%) represents impact of independent variable on dependent variables. DWS is 1.78 which is close to 2.

IV. CONCLUSION

Now a days it became important to judge movement of stock prices caused by various factors. This study examines the impact of EPS and BV on stock price. We can conclude that both the independent variables have significant impact over dependent variable. This study also examined the relationship among the variables and found positive relationship. The research article may be useful to investors for making decision regarding investment and for researchers to conduct further research with other variables. This study is limited to EPS and BV as independent variables, other variable can also be taken and sample size can also be increase and decrease.

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