

DOES EARNINGS EFFECT STOCK PRICES: A CASE STUDY IN CONTEXT OF INDIAN COMPANIES

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ABSTRACT: through this research an attempt is made to analyse causality among EPS, DIV and SP. Dividend (DIV) as part of earnings of a company, realized by investors as current return on their investors. For the purpose of examination of causality among EPS, DIV and SP data declared by company and SP at the end of each year has been collected. Various statistical tools i.e. regression, correlation and Johansen co-integration test have been applied with the help of Eviews. Data of 19 years from 2002 to 2019 of 109 companies listed in Indian stock exchange (NSE & BSE) has been collected from Prowess database. Our findings indicate that EPS, DIV and SP have long run cointegration also EPS and DIV influences the SP in Indian stock market.

KEYWORDS: Dividend, Regression, Stock Price, Co-integration, NSE & BSE

I. INTRODUCTION

There are two types of return available to shareholders, one is current return which is in form of dividend distributed by company out of his earning and other one is capital return which is in form of appreciation in stock price. Various theories suggested that rise or fall in amount of dividend will lead rise or fall in SP in capital market. these theories are examined in developed and developing countries. Various research has been conducted on dividend and dividend policy by several of researchers (Lintner, 1956; Gordon, 1959; Miller and Modigliani, 1961). Since, dividend has impact on stock price and growth, management should cautiously take decision regarding policy on dividend. DIV policy could be stable, dynamic and form of DIV can also be different i.e. cash dividend, bonus share. Most of the studies were conducted in regard to developed economy but differences may be found in developing countries because of difference in culture and financial structure. Dividend policy refers to policy related to pay out of earnings among its shareholders. US firms generally pays cash dividend and rarely pays other kind of dividend (DeAngelo et al. 2004). Prior research offered two approaches. First approach of MM (1961) suggested irrelevant approach means DIV is irrelevant to SP or value of firm. Another approach of Williams (1938) and Gordon (1959) concluded that dividend is important factor in determining stock price or firm's value. To test the impact of DIV policy on SP researchers rely on two famous approaches. first approach was based upon statistical tools applied on published financial data. In this context, (Chiang et al. 2006) said that statistical measures can only examine the reality check but cannot check psychological facts. Other approach suggested that survey methodology is appropriate in analysis of dividend policy. EPS also influences dividend and share price of companies because it is an indicator of profitability. Frankfurter et al. (2002), said that it is not easy to understand perception of investor by using market data. Studies of (Crowder and Wohar 1998, Mills, 1993, Kanas, 2003), provided proof in support of long run relationship between SP and DIV in developed countries i.e. US and UK. On the other hand, study of Han (1996) reported that SP and DIV in US market have no relationship. Bali et al. (2008) found positive relationship between EPS and DIV. therefore, have an impact on share price too.

Our main concern behind this investigation is to provide brief introduction of types & forms of dividend and policy on dividend. This study examines the cointegration between share price in Indian stock market and dividend pay-out or amount of dividend distributed by company to their shareholders. Many of empirical research conducted through time series and data in form of panel to test the cointegration between DIV and SP in developed countries. Studies also carried-out to test the causality between EPS and SP. Our study aims to examines the long run cointegration and causality among EPS, Dividend and share price in Indian Context. This study is useful to understand factors influencing volatility of share price.

Remainder of this study is as follow: next section briefly reviews the relevance of existing literature and formulation of hypothesis. Another Section presents methodology used in research and section 4 present and discusses and interpret the results. Finally, last section concludes the results.

II. REVIEW OF LITERATURE

We began with the introduction of relationship among EPS, DIV and SP. Dividend and dividend policy underlined many research and still attracting the researchers. Majority of research were conducted based on developed market i.e. USA and Europe. Lonieet al., (1996) concluded that an increase in dividend pay-out ratio (DP Ratio) will lead to increase in firm value. Soteret al., (1996) is of opinion that increase in dividend my lead in decrease in firm value due to need of present value of investment. Miller and Modigliani (MM), (1961) said that there is no impact of dividend on firm value. Revolutionary study of MM, 1961, regarding dividend and firm’s value concluded that value of firm is totally dependent upon earning capacity and opportunities of investment not on dividend policy. Dividend cut announcement may lead negative impact on stock price (Healy and Palepu, 1988). In sum, stock market reacts negatively to decrease in earnings and unexpected cut in dividend. Reschreiter (2009) concluded that change in dividend does not influence stock price in USA market. Goddard et al. (2008) conducted research for UK market and found long-term relationship between dividend and stock price. He used panel data for the purpose of study and applied panel unit root and cointegration technique. The signalling theory expresses that how the information about dividend give positive signal to market and thereby increase in share price (Miller and Rock, 1985). Some researcher uses EPS to investigate volatility in stock price (Ramadan, 1989). EPS is defined as earnings on a share. People believes on relationship between EPS and dividend because dividend depends upon net earnings of company. It is a fact that when a company is not able to produce profit for continuous year, does not pay dividend to shareholders. Contrary, company’s high earnings compel management to provide high rate of dividend. Companies may also retain their earnings for future investment opportunities. Share prices are changeable and reflects the financial performance of company in stock exchange. Uddin (2009) conducted a research on Dhaka stock exchange and using multiple regression analysis found relationship between stock price and EPS, stock price with DPS. Allen and Rachim (1996) concludes that financial leverage and earnings of company are positively associated with share price in context of Australia.

Based on the above literature reviews (Lonieet al., 1996; Soteret al., 1996; Healy and Palepu, 1988; Uddin, 2009; Allen and Rachim, 1996; Miller and Rock, 1985; Goddard et al. 2008; Reschreiter, 2009; Frankfurteret al. 2002) following hypothesis have been formed.

- Ho₁: DIV does not affect SP significantly
- Ho₂: No causality exists among DIV, EPS and SP

III. RESEARCH METHODOLOGY

Selection of Sample: Randomly 109 companies listed in Indian stock exchange (BSE & NSE) are selected for the purpose of study. Dividend providing companies incorporated before 2001 are selected for study.

Collection of data: data of selected companies regarding “Earning Per Share” (EPS), “Amount of Dividend” (DIV) and “Share Price” (SP) at the end of each year have been collected through Prowess data base. Time period of study is from 2001-2002 to 2018-19.

Descriptive Analysis: Descriptive analysis is used to understand the characteristics of data. Mean, Mode, SD, Kurtosis, Skewness, JB and Probability are calculated for this purpose.

Test of Unit Root: To check the existence of unit root in panel data, ADF (augmented Dickey Fuller) and PP test (Phillips Perron) has been applied.

$$p_{\lambda} = -2 \sum_{i=1}^N \log(\pi_i) \tag{1}$$

Where,

π_i = p-value of cross-section i.

p_{λ} = Follows X^2 distribution with 2N DF (Degree of Freedom)

Ho is cross section for all i have unit root i.e. $p = 0$.

Ordinary Least Square

Equation (2) used to test the impact of DIV and EPS on SP. Following equation has been used:

$$SP_{it} = \alpha + \beta_1 DIV_{it} + \beta_2 EPS_{it} + \epsilon_{it} \tag{2}$$

Where,

SP = Share Price at the end of each year.

DIV = Amount of dividend declared by companies.

EPS = Earnings Per Share calculated by dividing earning by no. of shares.

α = Intercept

ϵ_{it} = Error term

β_1 = coefficient of regression model.

Equation (2) test impact of dependent variable on independent variable. Ho1: no significant impact of DIV on

	Mean	Median	S.D	Skewness value	Kurtosis	J.B	Prob.	Sum	Sum Sq. Dev.	Observ.
DIV	6.16	3	10.03	9.98	202.18	3155946	0.00*	11645.89	190129.3	1890
EPS	24.09	15.31	33.86	2.97	42	122602.2	0.00*	45534.48	2165959	1890
SP	445.24	262.4	662.33	8.76	155.35	1852038	0.00*	841517.5	8.29	1890

SP, Ho2: no causality exists among DIV, EPS and SP have been tested.

Test for Cointegration

Equation (3) test the cointegration among variables. Null hypothesis that set of variables have no cointegration has been tested.

$$y_{it} = \alpha_i + \delta_i t + \beta_{1i} x_{1i,t} + \beta_{2i} x_{2i,t} + \dots + \beta_{Mi} x_{Mi,t} + \epsilon_{i,t} \quad (3)$$

In the above equation x and y are consider as to be one order integrated, where as α_i and δ_i are represent as individual and trend effects and $\epsilon_{i,t}$ is error term.

Table 1. Descriptive Statistics

(Source: Computed by Author)

Table 1 represent summary of descriptive statistics of data to check null hypothesis i.e. data has normal distribution. The p-value is <.05 (at 5% significance level) and Ho is rejected.

Table 2. Results of Unit Root Test (In Level)

Name of Series	ADF – Stat.	PP – Stat.
EPS	358.69 (0.00)*	476 (0.00)*
DIV	514.97 (0.00)*	535.83 (0.00)*
SP	306.27 (0.00)*	476.06 (0.00)*

(Source: Computed by Author)

Table 2 represent the test results of Unit Root in level. Ho is data has unit root has been rejected at significance level of 5% (p-value <.05). Data doesn't have unit root and DIV, EPS and SP are stationary in nature.

Table 3. Test of Correlation

Variables	SP	EPS	DIV
SP	1.00	0.49	0.32
EPS	0.49	1.00	0.52
DIV	0.32	0.52	1.00

(Source: Computed by Author)

Above table shows results of correlation between stock price, EPS and DIV. all the variables are positively correlated to each other. EPS has positive correlation by 49% and DIV has positive relation by 32%.

Table 4. Result of OLS

Variable	OLS		
	Coefficient	t-Statistic	Prob.
C	195.65	11.79	0.000*
EPS	8.86	19.47	0.000*
DIV	5.85	3.81	0.001*
R ²	0.25		
Ad. R ²	0.25		
F-stat (Prob.)	322.83 (0.000*)		

DWS	1.61
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(Source: Author’s Compilation)

Above table 4. Represents results of ordinary least square regression. Probability of EPS and DIV is less than .005 (at 5% significance level) which means that null hypothesis is rejected. Value of R-square is 0.25 (25%) and adjusted R-square is 0.25 (25%). It shows that DV and IDV are related by 25%. DWS value is 1.61.

Table 5. Results of FEM

Series	FEM		
	Co-eff.	t-Stat.	Prob.
C	265.78	15.99	0.000*
EPS	7.02	14.73	0.000*
DIV	1.64	1.02	0.306
R²	0.41		
Ad. R²	0.37		
F-stat (Prob.)	11.25 (0.000*)		
DWS	1.89		

(Source: Computed by Author)

Table 5 indicates the results of FEM (Fixed Effect Model). Earnings of companies significantly influences stock price of selected companies at 5% significance level. Value of R-square is 0.41 (41%) which represents EPS influencing SP by 41%. DWS is 1.89 which is close to 2.

Table 6. Test Results of REM

Series	REM		
	Co-eff.	t-Stat.	Prob.
C	23658	9.62	0.000*
EPS	7.74	16.97	0.000*
DIV	3.27	2.13	0.032*
R²	0.178		
Ad. R²	0.177		
F-stat (Prob.)	204.63 (0.000*)		
DWS	1.79		

(Source: Computed by Author)

Table 6 represents the results of REM (Random Effect Model). In the above table all the series of variables are significant at 5% significance level. R-square is 0.17 (17%) which mean that independent variables are effecting dependent variable by 17%.

Table 7. Test Results of Hausman Test

Summary of results	Chi. Sq. Stat.	Chi. Sq. d.f.	Prob.
Cro-section random	43.280280	2	0.0000

(Source: Computed by Author)

Above table represents Results of Hausman test. It indicates that REM is not suitable method among FEM and REM. Horandom effect model is appropriate has been rejected.

Table 8. Test Results of Johansen Cointegration Test

Hypothesized	Fisher Stat.		Fisher Stat.	
No. of CE(s)	(from trace test)	Prob.	(from max-Eigen test)	Prob.
None	1508.	0.0000	1237.	0.0000
At most 1	681.1	0.0000	536.8	0.0000
At most 2	520.0	0.0000	520.0	0.0000

(Source: Author’s Compilation)

Table 8 shows the results of Johansen Cointegration Test. It is very useful tool to examine the cointegration between variables. Results shows that Ho, no cointegration between the variable has been rejected at 5% significance level.

IV. CONCLUSION

It is very important to examine the effect of earnings on stock price. For the purpose EPS and DIV has been taken to examine the impact. Results of correlation and regression shows significant influence of independent variable on dependent variable. While results of Hausman test shows that fixed effect method is appropriate model. Further, Johansen Cointegration Test has been applied to test the long term relationship among the variable. Results in table 8 shows that long term relationship exist between the variable. It can be derived from all the results that earnings of the companies influence stock prices in Indian stock market.

V. REFERENCES

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