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IMPACT OF DIVIDEND POLICY ON RETURN ON ASSETS AND RETURN ON EQUITY: A STUDY OF SELECTED NIFTY COMPANIES

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Abstract

Dividend decision is a challenging task for the management of a company as it is one of the factors affecting the firm's performance. The present research has been undertaken to study the impact of dividend policy on the Return on Equity (ROE) and Return on Asset (ROA) of a few selected corporate sectors. For this purpose, 186 companies listed on the National Stock Exchange (NSE) paying a regular dividend for the period of 12 years i.e. 2010 to 2021 have been considered as the sample for data analysis. The data has been analyzed by applying Panel data regression models namely the fixed effect model and random effect model. Further, the Hausman test has suggested that the Random effect model is appropriate as compared to the fixed effect model. The study found a significant effect of dividend policy on firm performance which implies that by increasing the cost of dividends per share of the selected companies, the Return on Equity and Return on Assets would also increase. So,the study will be useful for the companies while framing their dividend policy.

Keywords: Dividend policy, Return on Assets (ROA), Return on Equity (ROE), Panel Regression.

INTRODUCTION

In the field of corporate finance, one of the most widely researched topics is dividend policy as it is a pivotal policy around which other financial policies rotate (Alii et al., 1993). The dividend decision is one of the strategic decisions as it decides the amount of profit to be distributed as a dividend to shareholders as a reward for taking the risk and the amount to be retained in the business for future use. It's shareholders' compensation for the tolerance of risk (Lipson et al.,1998). The form of dividend depends upon the policy of a firm and can be disbursed in the form of cash, stock, property, etc. Moreover, there is a general prospection about dividend policy that can be relevant or irrelevant policy. If the dividend policy is not relevant then any policy of dividend is satisfactory but if the dividend policy is relevant then there must be an optimum dividend policy (Chauhan et al., 2019). The primary motive of any firm is to maximize the wealth of its shareholders and that ultimately contributes back to the firm's growth (Reddy 2003). Various factors affect the value of a firm and dividend policy is one of them. The dividend policy of a firm affects the firm's both long-term financing as well as the wealth of its shareholders. So, in the present research efforts have been made to study the impact of dividend policy on firm profitability factors i.e. Return on Assets (ROA)and Return on Equity(Moradi et al.,(2010), Rafique (2012), Labhane &Mahaakud (2016). The rest of the paper is organized into various sections. The literature review has been presented in section 2, the research methodology is discussed in section 3, and data analysis with statistical techniques is expressed in section 4 whereas, the concluding remarks have been given in section 5.

LITERATURE REVIEW

A review of the Literature guides the right path and also provides directions for new research. To study the impact of dividend policy on firm performance various pieces of literature have been reviewed and explained below:

Ajanthan (2013) studied the relationship between firm profitability and dividend payout. The study found dividend payout as a crucial factor affecting the performance of a firm and a positive relationship between both.Yegon et al., (2014) examined the effects of dividend policy on the financial performance of manufacturing companies in Kenya. The study found a positive relationship between dividend policy with firm's profitability, earnings per share and investment. The study suggested that firms should have a definite dividend policy as it helps in enhancing profitability and also attracts more investments. Innocent et al., (2015) studied the effect of dividend payout on the performance evaluation of 4 cement companies listed on Nigerian stock exchange. The study found positive relation of dividend payout ratio with return on assets and no effect of dividend payout ratio on the return on equity of sampled companies.Abdella (2016) studied the effect of profitability on the dividend payout ratio of commercial banks in Saudi Arabia. The study found no significant impact of profitability on the dependent variable dividend payout ratio. Morrison & James (2017) analyzed the corporate performance and dividend policy of 3 companies in which there were two banks and one manufacturing industry. The study found a positive relationship between dividend return on assets and profit after tax and negative relation with earnings per share. The study suggested ploughing back earnings into future investments. Oppong (2017) tried to analyze the determinants of the dividend payout policy of 30 rural and community banks in Ghana. The study found a positive relationship between growth, profitability and liquidity with Dividend policy. Kolawole et al., (2018) analyzed the effect of dividend policy on the performance of 9 oil and gas firms listed on the Nigerian stock exchange. Study found that retained earnings and dividend

payout ratio affect earnings per share positively. Masry et al., (2018) made an effort to evaluate the various factors affecting the dividend policy of 9 commercial banks listed on NSE from 2003 to 16. The study found profitability indicators are ROA and EPS had a great impact on the dividend payout ratio. Chauhan et al., (2019) made an effort to study the effect of dividend policy on the profitability of Indian IT companies listed on the Bombay stock exchange. The study found a significant impact of dividend policy on the profitability of selected IT companies. Nguyen et al., (2021) studied the effect of dividend policy on the financial performance of 450 firms listed on the Vietnam stock market and found a negative relation between dividend decisions to Vietnamese firms.Panigrahi &Vachhani (2021) attempted to study the financial performance of two companies i.e. ITC and HUL from the FMCG sector. The study found that the use of financial leverage was mainly responsible for the whole decrease in return on equity (ROE).

RESEARCH METHODOLOGY

The present research is based on the analysis of secondary data that has been collected from website of National Stock Exchange (NSE). With the help of the purposive sampling technique,500 companies have been considered as the population and out of which 186 samples have been taken for study. These are the companies that are paying a regular dividend from the year 2010 to till the year of sample collection i.e. 2021.The data has been further categorized into 11 sectors based on the nature of the industry. DPR has been considered an independent variable and ROE and ROA have been considered dependent variables. The data has been analyzed by employing Panel data regression models namely the fixed effect model and random effect model. Further Hausman test has been used to suggest the most appropriate regression model.

Independent Variable: The dividend payout ratio (DPR) has been calculated by using the following formula (Abor et al.,2010).

DPR = DPS/ EPS

Dependent Variable: ROA and ROE are dependent variables. The regression equations have been separately applied to DPR.

Return on Equity (ROE): ROE is the most important ratio associated with stockholder's /shareholder's equity. It is indicated as: Return on Equity (ROE) = Net profit after interest and tax/ shareholders' funds

Return on Assets (ROA):ROE is calculated by dividing a company's annual earnings by its total assets. It is represented as: Return on Assets (ROA) = Net profit after tax/ Total assets

Panel Data Models: Panel data represents information about different individuals across time where the intercept coefficients fluctuate over the individual while the slopes stay the same. The study is based on both fixed and random effect models as two generic methods for panel data estimation. **The panel data model is generally expressed as**

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$$

Where, 'i' denotes individuals and 't' denotes time. is a vector of observations on explanatory variables, is unknown coefficients, intercept is an unobserved individual specific effect and its values remain constant over Pooled/ Panel least square method and varies in case of both fixed effect and Random effect model.

Fixed Effects Model

The fixed effects model assumes that there are different individuals (firms) and each individual has its own intercept and the difference between individuals can be calculated as the difference between individual intercepts. The panel data model is generally expressed as

Where, i=1,2,3…N (Number of Individuals), t=1,2,3,…..T

$$Y_{it} = \alpha_t + \beta X_{it} + \varepsilon_{it}$$

(Number of time period).

Random Effects Model

The model used to estimate panel data by considering the interference variable interconnected with both entities as well as time period. The error term has been used to accommodate the difference between intercepts of various entities and the model represents heteroscedasticity. The Random effect model is also known as ECS (ErrorComponent Model) or GLS (Generalized Least Square) method. Just like the other two methods which make use of the principle of ordinary least square but Random Effect model used the Maximum Likelihood method to represent the intercept of each individual. Following is the general equation of regression for Random Effect Model:

Where i=1,2,3,…N (Number of individuals), t=1,2,3…

$$Y_{it} = \alpha + \beta X_{it} + \mu_i + \varepsilon_{it}$$

.T(Number of period), is called residual of whole and is represented as residual of cross section and time series, is called individual residual which reflects the random nature of the intercept. So, it can be observed from the equation that the Random Effect model gives two residual values: one is called the Residual of cross section and time series and the second is called individual residual.

DATA ANALYSIS AND INTERPRETATION

Impact of DPR on ROA: ROA shows the impact of assets on net income and quantifies the amount of net profit that will be generated for every invested amount in total assets. The ratio of net income to total assets is used to calculate ROA (Adediran et al.,2013). The greater the ROA, the more raise the amount of net profit earned from funds invested in total assets. If not, a lower ROA translates into a lesser amount of net profit to be generated from each unit of money incorporated in total assets. The choice of model is based on a statical tool called Hausman Test which helps to identify the appropriate model. Hausman Test has the following hypothesis:

Hn: The Random effect Model is appropriate.
Ha: Fixed effect Model is appropriate.

So, if the p-value < 0.05, we will reject Hn and accept Ha which means the fixed effect model is appropriate. The following table shows the results of Hausman Testing for the estimation of appropriate models.

Table 1: Results of estimation using Hausman Test Prob.

Sector	ROA	ROE
Sector 1: Industrial Manufacturing	P-value (0.0297) <0.05, opted for Fixed Effect Model	P-value (0.0025) <0.05, opted for Fixed Effect Model
Sector 2: Automobile	P-value (0.0128) <0.05, opted for Fixed Effect Model	P-value (0.00) <0.05, opted for Fixed Effect Model
Sector-3: Chemical &Fertilisers	P-Value 0.1966)>0.05, opted for Random Effect Model	P-value (1.524632)>0.05, opted for Random Effect Model
Sector 4: Construction & Cement Products	P-Value (0.780)>0.05, opted for Random Effect Model	P-value (0.6106)>0.05, opted for Random Effect Model
Sector-5: Consumer Goods	P-Value (0.00) <0.05, opted for Fixed Effect Model	P-value (0.00) <0.05, opted for Fixed Effect Model
Sector-6: Energy	P-Value (0.2453)>0.05, opted for Random Effect Model	P-Value (0.6106)>0.05, opted for Random Effect Model
Sector-7: Financial Services	P-Value (0.00) <0.05, opted for Fixed Effect Model	P-Value (0.00) <0.05, opted for Fixed Effect Model
Sector-8 IT and Telecom	P-Value (0.2389)>0.05, opted for Random Effect Model	P-Value. (0.1826)>0.05, opted for Random Effect Model
Sector-9: Pharma	P-Value (0.8914)>0.05, opted for Random Effect Model	P-Value (0.3598)>0.05, opted for Random Effect Model
Sector-10: Media Entertainment & Services	P-Value (0.6069)>0.05, opted for Random Effect Model	P-Value (0.1549)>0.05, opted for Random Effect Model
Sector-11: Others	P-Value (0.7412)>0.05, opted for Random Effect Model	P-Value (0.0266) <0.05, opted for Fixed Effect Model

It has been observed from the above table that in most cases, the Random effect model is appropriate.

Table2 : Fixed Effect Model/ Random effect Model ROA

Sector-1 (Industrial Manufacturing)

Variable	Coefficient	Std. Error	t-Stat	Prob.	R2	Adj. R2	DW stat.
C	5.9649	1.1571	5.1548	0.0000	0.6052	0.6601	1.9104
DPR	0.2222	0.0411	5.3999	0.0000			
Sector-2 (Automobile)							
C	8.2532	0.9510	8.6775	0.0000	0.7088	0.6821	1.9028
DPR	0.1781	0.0325	5.4712	0.0000			
Sector-3 (Chemicals &Fertilizers)							
C	3.1438	1.0074	3.1205	0.0022	0.7113	0.6849	2.0000
DPR	.3378	0.0330	.0330	0.0000			
Sector-4 (Construction & Cement Products)							
C	-0.3234	0.8241	-0.3923	0.0352	0.6578	0.6849	2.0196
DPR	0.5897	0.0291	20.2407	0.0000			
Sector-5 (Consumer Goods)							
C	8.6735	0.9766	8.8808	0.0000	0.6472	0.6151	2.0531
DPR	0.1744	0.0297	5.8564	0.0000			
Sector-6 (Energy)							

C	2.0086	1.0809	1.8581	0.0346	0.7477	0.7247	2.0000
DPR	0.5393	0.0288	18.7119	0.0000			
Sector-7 (Financial Services)							
C	8.2448	0.8333	9.8935	0.0000	0.6843	0.6555	2.0138
DPR	0.1456	0.0317	4.5883	0.0000			
Sector-8 (IT And Telecom)							
C	6.9847	1.2871	5.4265	0.0000	0.6929	0.5900	2.0395
DPR	0.3859	0.0267	14.4019	0.0000			
Sector-9 (Pharma)							
C	6.6421	1.1282	5.8871	0.0000	.7851	.07817	2.0000
DPR	0.3845	0.0320	12.0068	0.0000			
Sector-10 (Media Entertainment & Services)							
C	5.4051	1.5152	3.5671	0.0005	0.6338	0.6403	1.9950
DPR	0.3591	0.0289	12.4154	0.0000			
Sector-11(Others)							
C	2.4378	0.6573	3.7088	0.003	0.8451	0.8439	2.0295
DPR	0.5359	0.0201	26.5429	0.000			

Where, C is the constant variable, DPR stands for the Dividend Payout Ratio.The table shows results based on Panel data analysis of 11 sectors with 186 observations for the period of 2010 to 2021 by using fixed effect and random effect models. The results listed in the above table describe 11 different regression models that have been used to study the impact of ROA on DPR. So far that matters,the dependent variable is ROA and the independent variable is DPR the general model equation

$$ROA = \beta_0 + \beta_1 DPR + ERROR$$

The result shows positive beta coeficient for all the Sectors i.e. Sector-1(Industrial Manufacturing), Sector-2(Automobile), Sector-3(Chemicals & Fertilizers) Sector-4(Construction & Cement Products, Sector-5(Consumer Goods) ,Sector-6(Energy), Sector-7(Financial Services), Sector-8(IT And Telecom), Sector-9(Pharma), Sector-10(Media Entertainment & Services) and Sector-11(Others). These results show that the higher the DPR and higher will be the ROA. These findings are similar to the finding of the study conducted by Cyril et al., (2020), Brealey et al., (2002). Similarly, the impact on ROE has been studied and results are described in table 3.

Table 3: Fixed Effect Model/ Random effect Model for ROE

Sector-1 (Industrial Manufacturing)							
Variable	Coefficient	Std. Error	t-Stat	Prob.	R2	Adj. R2	DW Stat.
C	9.8648	1.2040	8.1932	0.0000	0.6721	0.6740	1.9580
DPR	0.1917	0.0428	4.4764	0.0000			
Sector-2 (Automobile)							
C	14.1652	1.5729	9.0053	0.0000	0.5911	0.5536	1.9267
DPR	0.1728	0.0538	3.2101	0.0017			
Sector-3 (Chemicals &Fertilizers)							
C	23.6368	1.8227	12.9673	0.0000	0.6190	0.7267	2.0000
DPR	-0.2873	0.0431	-6.6653	0.0000			
Sector-4 (Construction & Cement Products)							
C	7.3875	1.3485	5.4782	0.0000	0.7519	0.7425	2.0031
DPR	0.2457	0.0397	6.1825	0.0000			
Sector-5 (Consumer Goods)							

C	25.2762	1.7935	14.0929	0.0000	0.6356	0.6024	2.0152
DPR	-0.1061	0.0547	-1.9410	0.0431			
Sector-6 (Energy)							
C	7.4766	1.5554	4.8066	0.0000	0.6313	0.6275	2.0000
DPR	0.3116	0.0399	7.7995	0.0000			
Sector-7 (Financial Services)							
C	12.5360	0.8305	15.0936	0.0000	0.6592	0.6281	2.0909
DPR	0.1215	0.0316	3.8397	0.0002			
Sector-8 (IT And Telecom)							
C	10.8968	2.3317	4.6731	0	0.4658	0.4614	1.7637
DPR	0.3425	0.0377	9.0762	0			
Sector-9 (Pharma)							
C	9.0493	1.9803	4.5694	0	0.7181	0.7137	2.0199
DPR	0.3950	0.0466	8.4723	0			
Sector-10 (Media Entertainment & Services)							
C	7.4134	1.0780	6.8765	0	0.6733	0.6434	2.01884
DPR	0.3713	0.0267	13.8923	0			
Sector-11 (Others)							
C	6.8703	1.0656	6.4473	0	0.6136	0.5782	2.0112
DPR	0.3561	0.0391	9.1054	0			

Where C is the constant variable, DPR stands for the Dividend Payout Ratio.Similar to ROA, the impact of DPR has been studied on ROE. The results listed in the above table describe 11 different regression models for ROE and the general equation is

$$ROE = \beta_0 + \beta_1 DPR + ERROR$$

Where the dependent variable is ROE and the independent variable is DPR.is defined as a constant term. The result of the regression model shows a positive beta coefficient for most of the sectors i.e. Sector-1(Industrial Manufacturing), Sector-2(Automobile), Sector-4(Construction & Cement Products, Sector-6(Energy), Sector-7(Financial Services), Sector-8(IT And Telecom), Sector-9(Pharma), Sector-10(Media Entertainment & Services) and Sector-11(Others). These results show that the higher the DPR and higher the would be the ROE. These findings are similar to the finding of the study conducted by Kanakriyah (2020), AnhHuuet al.,(2021), and Thirumagal and Vasantha (2018). Whereas in the case of Sector-3(Chemicals & Fertilizers) and Sector-5(Consumer Goods) beta coefficient is negatively related but significant at 5% level of significance.

CONCLUSION

ROA and ROE are the most important indicators that define the profitability of a company.

Theories say that there is a positive relationship between ROA and ROE with DPR. The study aimed at examining the impact of DPR on ROA and ROE. The data has been collected from secondary sources of 186 observations over the period of 2010 to 2021. It has been found that ROA and ROE have a positive relationship with the DPR. It has also been observed that the beta coefficients are significant at 5% level of significance. The study concludes that DPR has a positive impact on ROA and ROE. The higher the value of DPR higher will be the value of these two variables. The equations of the model quantify the impacts.

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