IMPACT OF THE DETERMINANTS ON DIVIDEND PAYOUT RATIO OF SELECT COMPANIES IN INDIA—A STUDY

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Abstract

The dividend decisions are a type of financing decisions that affect both the shareholder’s wealth and it’s’ ability to retain earnings and dividend policy is that payout policy which determines the amount and form of cash distributed to shareholders over time. Investors acquire shares in many respects for the sake of receipt of dividends that is payments from profit according to their share in the capital of the company. The dividend is not paid if a company is in such a condition of bankruptcy. To investigate the impact of the determinants on dividend Pay-out ratio of service sector in India, It is considered that the current ratio, free cash flow, growth, leverage, ROCE, EPS, risk, size, tax, age as the independent variable and Dividend payout ratio is the dependent variable for the study. To choose between the competing hypotheses in order to get the best-fit model, examine the variables by adding each into a regression model gradually. The result of the Hausman test shows that the Random effects model should be appropriate for the data analysis. From the results of this Study, it is observed that the determinants of Dividend Payout Ratio are Debt to Total Assets (DA), Size (SIZE), Earnings per Share (EPS), Free Cash Flow (FCF) and Dividend Distribution Tax (DDT).

The empirical results also suggests that Size (SIZE) and Dividend Distribution Tax (DDT) have the positive impact while Debt to Total Assets (DA), Earnings Per Share (EPS) and Free Cash Flow (FCF) variables have negative impact on the Dividend Payout Ratio (DPR) for the entire period of study.

Keywords: Dividend decision, shareholders, Bankruptcy, Pay-out Ratio, Regression analysis, determinants.

1. Introduction

Dividend decision is a financial decision which taken repeatedly by the board of management that involves large amounts of cash outflow and closely related to most capital structure and budgeting decisions. It is controversial because despite the extensive research conducted so far, the conflicts remain on the dividend policy as to why firms pay dividends and why investors pay attention to dividends. Dividend policy is the important financial decision of the Board of Directors regarding the number of residual earnings that should be distributed to the shareholders of the company (Gibson 2009)1. Usually, the management of the company follows in making dividend payout decisions or, in other words, the size and pattern of cash distribution named as dividend distribution over time to shareholders (Lease et al 2000)2. This decision is considered

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one of the vital financing decisions because the profit of the company is an important source of financing available to the firm. Dividend payout policies play an important role in financial decision making of Indian companies. Parallel with other decisions, management should consider dividend policy decisions because if companies decide to pay more dividends, it retains fewer funds for investment purpose, and the company may be forced to revert to capital markets to gain funds (Baker & Powel 2000). In developed economies, the decision regarding dividend is taken carefully, whether paying dividends or keep as retain earnings for the benefit of both investors and management of the companies (Glen et al. 1995).

The dividend policy is traditionally one of the most contradictory aspects of the activity which always caused much dispute among shareholders. Investors acquire shares in many respects for the sake of receipt of dividends that is payments from profit according to their share in the capital of the company. The dividend is not paid if a company is in such a condition of bankruptcy. Dividends are paid half-yearly quarterly or annually by the decisions of the Board of the company. Dividend payout decision is a policy of a company which engaged in a distribution of company’s net profit and achievement of optimization of a ratio of interest of owners and requirements of a company for the development of it. Thus, it is a necessity to maximize the cumulative income of shareholders and to leave necessary means for investment and financing of the current activity.

We have chosen to determine the relationship between the dividend payout ratio and current ratio, free cash flow, growth, leverage, ROCE, EPS, risk, size, tax, age. We have decided to limit the research to these nine factors since we came to the conclusion that the factors mentioned above are the most important for the firm’s dividend policy. Finally, when we discuss dividends we will always refer to cash dividends since it is usually the most common type of dividend and when investors exclude all other kinds of dividends and other forms of distribution of profit to shareholders, such as stock repurchases.

The study is limited to only 15 companies from each of the sectors of SERVICE sector and the data is limited to 10 years during 2007-08 to 2016-17. Therefore, these companies the trend of only a few numbers of industries, which would not be sufficient, totally, to generalize the inferences to the whole of a country, India.

The services sector is the key driver of the economic growth of India. It is expected that the service sector will contribute around 54% of India’s Gross Value Added in 2017-18 and employed 28.6% of the population in India. The net services exports of India during April-December 2017 reached US$ 57.60 billion. According to a report by a leading research firm Market that the Indian mobile services market is expected to grow by 10.3% in 2017 and it will reach to US$ 103.9 billion by 2020. The service sectors comprising financial services, real estate, and professional services altogether contributed 20.5% to the GDP of India and the sub-sector of community, social and personal services contributed US$ 188.2 billion or 12.6% to the GDP of India in 2017.

2. Review of the Literature

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Holder et al (1998) studied regarding the determinants of dividend policies in the United States. 477 US companies have been taken as the sample of his study and the time period for the data collection was 1983-2990. The results of the study indicate that there is a positive relationship between dividend payout ratio and size (log of scales) and the free cash flow. He stated that large companies have easier access to capital markets and should, therefore, the company is able to pay higher dividends and the authors’ supported the argument of the agency theory, companies with larger free cash flow have to pay higher dividends in order to reduce the agency conflict. He found from his study that a negative relationship between dividends and risk, internal ownership and sales growth.

Hedensted and Raabelle (2008) conducted a study regarding the determinants of dividends in Denmark. The researchers took 365 companies that were listed on the Copenhagen stock exchange for the time period from 1988 to 2004. The variables used in the research In order to find out the relationship between dividends and the companies factors, the variables are used in the study are: leverage (debt/equity), retained earnings, return on equity, leverage (debt/equity), market to book value, and size. Hedendsted and Raabelle used dividend yield instead of dividend payout ratio as a measurement of the dividend payments. But they did not use the regular dividend yield since it is heavily influenced by the stock price and me therefore not a good measurement. The authors found a positive relationship between the dividend yield and return on equity, retained earnings, and size. They did not find any significant relationship between dividend yield and the firm's leverage (debt/equity, market to book value). The authors finally established that the result of the study support both the signaling theories and the Agency theories of the dividend.

Daunfeldt et al (2009) conducted a study mainly on the taxation and also investigate the relationship between dividend yield and company factors. For the study researcher took the data from selected companies listed in the Stockholm Stock Exchange in Sweden and the data was collected during the period 1991-1995. The researchers found a strong positive relationship between dividends and size (logarithm of employees) and the authors’ state that this is due to the higher agency costs connected to larger companies. A positive but insignificant relationship was established between dividends and cash flows and earnings. However, a negative relationship was established between the dividend yield and market to book value. He states that the negative relationship can be explained by the fact that firms with growth opportunities pay low dividends in order to exploit their growth opportunities.

Robert King’wara (2015) conducted a study to examine the effect of determinants on payout ratios in companies listed on the Nirobi Security Exchange for the period of 2008-2012. 30 companies took as the sample for the study and for the data analysis the researcher applied. Tobit Regression model He considered six independent variables to examine their impact on the dividend payout ratio. The multiple regression analysis was used for his study. The independent variables are the ratio of retained earnings to total assets, growth opportunities, firm size, debt ratio or leverage and market to book value ratio. The study observed that retain earnings to total assets ratio, market to book value ratio have a positive impact on dividend payout ratio but the debt ratios, growth rate, and firm size have a negative impact on dividend payout.

3. Research Gap
Many studies have focused on this subject, but no one studied the lag effect of business characteristics such as Current Ratio (CR), Debt to total Assets (DA), Size (SIZE) Growth (GROW), Earnings Per Share (EPS), Return on Capital Employed (ROCE) Free Cash Flows...
(FCF), Dividend Distribution Tax (DDT) and Age (AGE) on the Dividend Payout Ratio (DPR) by focusing SERVICE Sector from emerging markets perspective in India, listed in the stock exchange of India.

4. Objective of the study

The major objectives of the study are as under:
   i) To determine the most important factors of dividend payout Ratio of SERVICE Sector listed in the Stock Exchanges of India.
   ii) To investigate the effects of the determinants of dividend on dividend payout ratio of SERVICE Sector listed in the Stock Exchanges of India.

5. Significant of the Study

The study is significant in shade light on how company manager decides on the dividend payout ratio and what should be considered before they take any decision. The sound dividend policy is very much important since a high and regular dividend payout ratio decided by the management of the company would create a benchmark for doing well and therefore more dividends can be distributed to the shareholders while maintaining the health of the company.

6. Research Methodology

The data used for the study are secondary in nature. The research is mainly based on the official data collected from www.moneycontrol.com and annual reports of select companies in the Service sector.

6.1. Statistical Tools
   i. Number of Observations: There are 150 observations of 15 listed
   ii. Time period: over a period of 10 years during 2007-08 to 2016-17.
   iii. Variables are calculated through EXCEL
   iv. The nature of the research data is Static Panel Data analysis through Stata 12.00

6.2. Steps for the Analysis
   i) For testing the Co-linearity - VIF test.
   ii) For testing the Normality - Shapiro-Wilk test.
   iii) In order to choose between FEM and REM, we conducted a Hausman test developed by Hausman in 1978. According to his theory, the null hypothesis is “There have no differences between the two models”. If this hypothesis is rejected, we choose FEM instead of using REM.

6.3. Null hypotheses

Null hypothesis assumed that all the independent variables have no relationship with Dividend Payout Ratio (DPR) of the companies.

6.4. Alternative hypotheses:

The alternative hypothesis assumed that all the independent variables have a relationship with Dividend Payout Ratio (DPR) of the companies.

6.5. Multiple Regression model

The multiple regression model used in this research can be written as:

\[ DPR_{it} = \beta_0 + \beta_1 CRS_{it} + \beta_2 DA_{it} + \beta_3 SIZE_{it} + \beta_4 GROW_{it} + \beta_5 EPS_{it} + \beta_6 ROCE_{it} + \beta_7 FCF_{it} + \beta_8 DDT_{it} + \beta_9 AGE_{it} + \epsilon_i \]

Where DPR_{it} = Dividend Payout Ratio of firm i in period t
CR = Current Ratio
DA=Leverage  
SIZE=Total assets  
GROW=Growth  
EPS=Earnings per Share  
ROCE=Return on Capital Employed  
FCF=Free Cash Flow  
DDT=Dividend Distribution Tax  
AGE=Maturity  
$\varepsilon_i$ = Standard Error  
$\beta_x \ (x=0,1,2\ldots \ldots n)$

6.6. The definitions of the variables are summarized in the following table

<table>
<thead>
<tr>
<th>Name of Variables</th>
<th>Definition</th>
<th>Hypothesis</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dividend Payout Ratio</td>
<td>DPR= Dividend Payout Per Share/Earning Per Share</td>
<td>Dividend Decision</td>
<td>-</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Ratio</td>
<td>CR = Current assets / Current liabilities</td>
<td>Liquidity</td>
<td>Positive(+)</td>
</tr>
<tr>
<td>Debt to Total Assets</td>
<td>DA= Total Liabilities/ Total Assets</td>
<td>Leverage</td>
<td>Negative(-)</td>
</tr>
<tr>
<td>Earnings Per Share</td>
<td>EPS=Profit after Tax/Total outstanding Shares</td>
<td>Profitability</td>
<td>Positive(+)</td>
</tr>
<tr>
<td>Return On Capital Employed</td>
<td>ROCE= Net Earnings/ Capital Employed</td>
<td></td>
<td>Positive(+)</td>
</tr>
<tr>
<td>Free Cash Flow</td>
<td>FCF = Cash and Cash Equivalent/Total assets</td>
<td>Agency Cost</td>
<td>Positive(+)</td>
</tr>
<tr>
<td>Dividend Distribution Tax</td>
<td>DDT=Dividend tax/ Profit for the year</td>
<td>Tax Effect</td>
<td>Negative(-)</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>SIZE = Total Assets</td>
<td>Size of the firm</td>
<td>Positive(+)</td>
</tr>
<tr>
<td>Firm Growth</td>
<td>GROW = Current Year Sale/ Last Year Sale</td>
<td>Firms’ Growth</td>
<td>Positive(+)</td>
</tr>
<tr>
<td>Age</td>
<td>AGE= Current age, No, of year since the date of inception up to 2016-17</td>
<td>Maturity</td>
<td>Positive(+)</td>
</tr>
</tbody>
</table>

7. Best-Fit Model.
It is unrealistic to select all, because of the large the sample size and is more the time consuming. Therefore, choosing the sample firms for this research is partly decided by what kinds of data are available we introduced nine hypotheses of each of the independent variable. Hence, these variables can be seen as the factors constitute a general model to be tested in order to determine that they are the factors influence the dividend payout Ratio. To choose between the competing
hypotheses in order to get the best-fit model, we will examine the variables by adding each into a regression model gradually.

\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \beta_3 \text{SIZE}_{it} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{GROW}_{it} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{GROW}_{it} + \beta_5 \text{EPS}_{it} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{GROW}_{it} + \beta_5 \text{EPS}_{it} + \beta_6 \text{ROCE}_{it} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{GROW}_{it} + \beta_5 \text{EPS}_{it} + \beta_6 \text{ROCE}_{it} + \beta_7 \text{FCF}_{it} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{GROW}_{it} + \beta_5 \text{EPS}_{it} + \beta_6 \text{ROCE}_{it} + \beta_7 \text{FCF}_{it} + \beta_8 \text{DDT}_{it} + \varepsilon_i
\]  
\[
\text{DPR}_{it} = \beta_0 + \beta_1 \text{CR}_{Sit} + \beta_2 \text{DA}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{GROW}_{it} + \beta_5 \text{EPS}_{it} + \beta_6 \text{ROCE}_{it} + \beta_7 \text{FCF}_{it} + \beta_8 \text{DDT}_{it} + \beta_9 \text{AGE}_{it} + \varepsilon_i
\]

Where \( \text{DPR}_{it} \) = Dividend Payout Ratio of firm \( i \) in period \( t \)

- CR= Current Ratio
- DA=Leverage
- SIZE=Total Assets (Natural log value)
- GROW= Sales Growth
- EPS=Earnings per Share
- ROCE=Return on Capital Employed
- FCF=Free Cash Flow
- DDT=Dividend Distribution Tax
- AGE=Maturity (Natural Log Value)
- \( \varepsilon_i \) = Standard Error
- \( \beta_x \) (\( x=0,1,2 \ldots \ldots \)n)

**Table -1: Regression Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient</th>
<th>P-Value</th>
<th>Model</th>
<th>Coefficient</th>
<th>P-Value</th>
<th>Model</th>
<th>Coefficient</th>
<th>P-Value</th>
<th>Model</th>
<th>Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>1.484***</td>
<td>0.071</td>
<td>CR</td>
<td>0.01047</td>
<td>0.907</td>
<td>DA</td>
<td>-27.1747**</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>DA</td>
<td>32.009**</td>
<td>0.000</td>
<td>SIZE</td>
<td>6.1112**</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob&gt;F=0.0706</td>
<td>R²=0.0219</td>
<td>Adj R²=0.0153</td>
<td>Prob&gt;F=0.01047</td>
<td>R²=0.907</td>
<td>Adj R²=0.0071</td>
<td>Prob&gt;F=0.0003</td>
<td>R²=0.0003</td>
<td>Adj R²=0.0003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DA</td>
<td>-28.87**</td>
<td>0.000</td>
<td>DA</td>
<td>-29.477**</td>
<td>0.000</td>
<td>DA</td>
<td>-29.8327**</td>
<td>0.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>6.354**</td>
<td>0.000</td>
<td>SIZE</td>
<td>5.9017**</td>
<td>0.002</td>
<td>SIZE</td>
<td>4.9846**</td>
<td>0.002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROW</td>
<td>8.5755</td>
<td>0.135</td>
<td>EPS</td>
<td>0.0616**</td>
<td>0.000</td>
<td>EPS</td>
<td>0.0542**</td>
<td>0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob&gt;F=0.0000</td>
<td>R²=0.1994</td>
<td>Adj R²=0.1829</td>
<td>Prob&gt;F=0.0000</td>
<td>R²=0.2654</td>
<td>Adj R²=0.2503</td>
<td>Prob&gt;F=0.0000</td>
<td>R²=0.2696</td>
<td>Adj R²=0.2495</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FCF</td>
<td>0.731**</td>
<td>0.000</td>
<td>FCF</td>
<td>0.6246**</td>
<td>0.000</td>
<td>FCF</td>
<td>0.6418**</td>
<td>0.003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prob&gt;F=0.0000</td>
<td>R²=0.3062</td>
<td>Adj R²=0.2870</td>
<td>Prob&gt;F=0.0000</td>
<td>R²=0.5429</td>
<td>Adj R²=0.5270</td>
<td>Prob&gt;F=0.0000</td>
<td>R²=0.5431</td>
<td>Adj R²=0.5240</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Notes: t-statistics are in parentheses. *, ** and *** denotes the insignificant, Significance level at 5, 1 and 10 percent, respectively.
Sources: Author’s calculation through STATA

According to the OLS regression model dependent variable is (DPR) and independent variables are CR, DA SIZE, GROW, EPS, ROCE, FCF, DDT and AGE. The CR is in this model. Moreover, the equation’s $R^2$ is 3.96% and adjusted $R^2$ is 1.53%. $R^2$ Represents the proportion of the variation in the dependent variable is explained by regression. Adding even a totally irrelevant independent variable can never reduce the value of $R$, and will probably increase it. In other words, higher $R^2$ means better model. Somehow choosing the model with largest value of $R^2$ is equivalent to choosing the model with the greatest number of independent variable, thus $R^2$ is not helpful as a model selection aid, but it shows how well the independent variables to explain the dependent variable.

In equation (1), $R^2$ is 0.0219, this indicates that the CR can explain only about 2 percent of dividend payout ratio. According to the table, P-value is 0.071 and coefficient is (1.484) it implies that the CR has a positive relationship with the dividend payout ratio and statistically significant at 10% significant level. Although it has a negative relationship with dividend payout ratio.

To find out a better-fit model, the DA is added to the equation no. (2) and conducted regression analysis. The addition of DA, improve the fit of the model, where the coefficient of DA is (-32.009) and the P-value is 0.000 i.e <0.05 in the table. It indicates that DA has a negative relationship with the dividend payout ratio and statistically significant but CR becomes insignificant, because the p-value of CR increased to 0.907, i.e. > 0.05. After adding DA in equation no. (2), the value of $R^2$ increased from 2.19% to 10.61% and Prob>F=0.0003(become significant in 5% significant level). In this situation CR is omitted from the model and DA will be kept for the better fit model.

For equation (3), SIZE is added to the model and according to the result of the regression analysis, P-value is (0.000) i.e<0.05 and coefficient is (6.1112). It implies that the SIZE has a positive relationship and statistically significant. On the other hand $R^2$ increased to 18.7% and Prob>F= 0.0000 which also indicates that the model become well by adding SIZE in the equation. Thus, Size kept in the model for better fit model.

To find out a better-fit model, the GROW is added to the equation no. (4) And conducted regression analysis. Although it has a negative relationship with dividend payout ratio. The addition of GROW does not improve the fit of the equation, where the coefficient of GROW is (8.5755) and the P-value is 0.135 i.e >0.05 in the table. It has no relationship with the dividend payout ratio and statistically not significant. Thus, GROW is omitted from the model.

In equation (5), EPS is added to the model and according to the correlation with DPR and coefficient; it has a negative and statically significant with dividend payout ratio. As seen from above table, $R^2$ for equation (5) is also approximately 0.26.54% and P-Value is 0.000 i.e.<0.05. Hence, it will be kept for better-fit model.
In equation (6), ROCE is added to improve the fit of the equation. Although it has a positive relationship with dividend payout ratio. The addition of ROCE does not improve the fit of the equation, where the R² is little bit improve but coefficient of ROCE is (-0.1995) and the P-value is 0.361 i.e >0.05 in the table. It has no relationship with the dividend payout ratio and statistically not significant. Thus, ROCE is omitted from the model.

In equation (7), FCF is added to the model and according to the correlation with DPR and coefficient; it has a positive and statically significant with dividend payout ratio. As seen from above table, R² for equation (7) is 30.62. P-value is 0.004 i.e.<0.05. Hence, it will be kept for better-fit model.
To find out a better-fit model, the DDT is added to the equation (8) and conducted regression analysis. Although it has a negative relationship with dividend payout ratio. The addition of DDT, improve the fit of the equation, where the coefficient of DDT is (3.2914), the R² is 54.29 percent and the P-value is 0.000 i. e, <0.05 in the table. It has a Positive relationship with the dividend payout ratio and also statistically significant. It improves the fit of the equation.

Finally, AGE is added to the equation. Although it has a positive relationship with dividend payout ratio. The addition of AGE does not improve the fit of the equation, where the coefficient of AGE is (-0.6802) and the P-value is 0.796 i.e, >0.05 and R2 is almost same as previous equation 54% in the table. It has no relationship with the dividend payout ratio and statistically not significant. Thus, AGE is omitted from the model.

Best fit-model for the data analysis regarding the relationship between Independent variables such as Debt to total Assets (DA), Size (SIZE), Earnings Per Share (EPS), Free Cash Flows (FCF) and Dividend Distribution Tax (DDT) and Dividend Payout Ratio(DPR), the dependent variable is as follows:-

\[ DPR_{it} = \beta_0 + \beta_2 DA_{it} + \beta_3 SIZE_{it} + \beta_5 EPS_{it} + \beta_7 FCF_{it} + \beta_8 DDT_{it} + \epsilon \]

8. Descriptive Statistics
The descriptive statistics show the mean, standard deviations, minimum and maximum value of all variables and variance’

Table-2: Summarized Table of Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPR</td>
<td>150</td>
<td>32.48629</td>
<td>21.71619</td>
<td>4.225</td>
<td>85.324</td>
</tr>
<tr>
<td>DA</td>
<td>150</td>
<td>4174867</td>
<td>2242939</td>
<td>.053</td>
<td>.862</td>
</tr>
<tr>
<td>SIZE</td>
<td>150</td>
<td>7.013515</td>
<td>1.023673</td>
<td>3.883005</td>
<td>8.932593</td>
</tr>
<tr>
<td>EPS</td>
<td>150</td>
<td>11.99155</td>
<td>10.29567</td>
<td>.78</td>
<td>62.47</td>
</tr>
<tr>
<td>FCF</td>
<td>150</td>
<td>5.165153</td>
<td>6.43774</td>
<td>.038</td>
<td>34.7</td>
</tr>
<tr>
<td>DDT</td>
<td>150</td>
<td>4.74571</td>
<td>3.407703</td>
<td>.0025</td>
<td>19.06</td>
</tr>
</tbody>
</table>

Sources: Author’s calculation through STATA

The value of the Dividend Payout Ratio (DPR) is the highest at 85.324, the lowest value is 4.225 and the mean value is 32.486 for the dividend paid to the shareholders. This was expected since the variable is a ratio. Standard Deviation shows the variation in the data with dividend pays out
to the Shareholders with the least value of Standard Deviation at 21.72 implying the Dividend payout variation.

8.1. Diagnostic Tests
There are three critical assumptions for regression models: multicollinearity, normality, and heteroscedasticity (Gujarati, 2003, Berenson, Levine & Krehbiel, 2009). To test the critical assumptions for regression models the following tests were conducted and the results highlighted below:

8.2. Collinearity test
Collinearity test for Independent variables such as Debt to Total Assets (DA), Size (SIZE), Earnings Per Share (EPS), Free Cash Flow (FCF) and Dividend Distribution Tax (DDT) was conducted to examine the presence of multi-collinearity between independent variables with a significant effect on the relationship between the predictor variables (DPR).
In multiple regression, Pearson’s correlation test is used as an indicator of multicollinearity.

Table-3 : Pearsons Correlation

<table>
<thead>
<tr>
<th></th>
<th>DPR</th>
<th>DA</th>
<th>SIZE</th>
<th>EPS</th>
<th>FCF</th>
<th>DDT</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPR</td>
<td>1.0000</td>
<td>-0.3256</td>
<td>-0.1559</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DA</td>
<td></td>
<td>0.3318</td>
<td>-0.0548</td>
<td>-0.1704</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.3087</td>
<td></td>
<td>0.2677</td>
<td>-0.0565</td>
<td>0.2534</td>
<td>1.0000</td>
</tr>
<tr>
<td>EPS</td>
<td>-0.1921</td>
<td>-0.2677</td>
<td></td>
<td>-0.0565</td>
<td>0.2534</td>
<td>1.0000</td>
</tr>
<tr>
<td>FCF</td>
<td>0.6090</td>
<td>-0.2511</td>
<td>0.2511</td>
<td>-0.0124</td>
<td>-0.0041</td>
<td>1.0000</td>
</tr>
<tr>
<td>DDT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Author’s calculation through STATA
The above table also shows that the correlation between the independent variables used in the model is generally quite small. The largest correlation coefficients exist between the FCF and DDT (26.77%), followed by that between the FCF and EPS variables (25.34%), between DDT and SIZE, EPS (25.11%). We can conclude from the result table that there is no collinearity exist in the model.

8.3. Normality test
Regression models assume that the variables took in the model follow a normal distribution. To test the normality of the variable, we use the Shapiro & Wilk (1965) test. Shapiro-Wilk test was preferred because of its good power properties (Mendes & Pala, 2003). If the value of W lies between zero and one, the small values of W lead to rejection of normality.

Table -4: Shapiro-wilk
Sources: Author’s calculation through STATA

On the basis of the results above, W ranges from 0.73245 and 0.96482. This showed an indication of normality.

8.4. Hausman Test

Choosing between fixed and random effects is by running a Hausman test. Considerably, the null hypothesis of this test is no correlation between regressors and individual effects. Thus,

H0: The difference in coefficients not systematic
H1: The difference in coefficients systematic

Table-5: Hausman fixed random

<table>
<thead>
<tr>
<th></th>
<th>Coefficients</th>
<th></th>
<th></th>
<th>sqrt(diag(y_b-y_B))</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(b-B)</td>
<td>(b-B)</td>
<td>b-B</td>
<td>S.E.</td>
<td></td>
</tr>
<tr>
<td>DA</td>
<td>-12.95174</td>
<td>-15.4389</td>
<td>2.487154</td>
<td>2.720516</td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>3.767552</td>
<td>3.726677</td>
<td>.0408749</td>
<td>.6509979</td>
<td></td>
</tr>
<tr>
<td>EPS</td>
<td>-.477747</td>
<td>-.479593</td>
<td>.0018433</td>
<td>.0375267</td>
<td></td>
</tr>
<tr>
<td>FCF</td>
<td>-.5267858</td>
<td>-.5267209</td>
<td>.0019354</td>
<td>.0839227</td>
<td></td>
</tr>
<tr>
<td>DDT</td>
<td>1.955067</td>
<td>2.082373</td>
<td>-.1273064</td>
<td>.0639546</td>
<td></td>
</tr>
</tbody>
</table>

b = consistent under H0 and Ha; obtained from xtreg
B = inconsistent under H0, efficient under H0; obtained from xtreg

Test: No: difference in coefficients not systematic

\[ \text{chi}^2(5) = (b-B)^T[(Y_b-Y_B)^{-1}](b-B) = 9.20 \]
\[ \text{Prob>chi}^2 = 0.1014 \]

Sources: Author’s calculation through STATA

The Hausman test indicates that the Random effect model is more appropriate than the fixed effect model. As the testing result of significant P-value, where Prob>chi2 =0.1014 which is not significant on the 95% significant level (where P>0.05). Hence, We cannot reject the null hypothesis (it means the difference in coefficients not systematic) and the result indicates that the Random Effect Model should be applied to the data analysis.

8.5. Regression Analysis

The regression result conducted using the Random effect model to examine the effect of the Independent variables such as Debt to Total Assets (DA), Size (SIZE), Earnings Per Share (EPS), Free Cash Flows(FCF) and Dividend Distribution and Tax(DDT) on the Dividend Payout Ratio (DPR) of SERVICE sector of India listed in the stock exchange of India.

Table-6: Regression Analysis by Random effect model

|     | Coef.   | Stad. Err | P>|Z| |
|-----|---------|-----------|------|
| DA  | -15.4389*| 6.533442  | 0.018|
| SIZE| 3.726677*| 1.603792  | 0.020|
| EPS | -.4795903**| .1113899 | 0.000|
| FCF | -.5287209*| .2253585 | 0.019|
| DDT | 2.082373**| .3085497 | 0.000|
| Cons.| 11.39433 | 11.57952  | 0.325|
| No. of Observations | 150 |
**Interpretation**

The above table shows the regression result conducted using the **Random effect model** to examine the effect of the Independent variables such as Debt to Total Assets (DA), Size (SIZE), Earnings Per Share (EPS), Free Cash Flow (FCF), Dividend Distribution and Tax (DDT) on the Dependent variable Dividend Payout Ratio (DPR) of SERVICE sector of India listed in the stock exchange of India. The result of F-Test value from the above table shows, Prob>Chi2=0.0000, i.e. < 0.05, at 95% confidence level. It indicates that the model of the regression analysis is OK.

**H02(DA):** The value of P is (0.018), which is less than .05 in the 5% significant level which states that the null hypothesis (H02) is rejected and the alternative hypothesis is accepted (H12). An evaluation of the slope of the coefficient of the explanatory variable reveals that it has a negative relationship between Debts to total Assets (DA) and Dividend Payout Ratio (DPR). The Independent variable DA of the Service sector signaling a significant and negative relationship to dividend payment decisions for the entire period of study 2008-2017. The coefficient value is (-15.44) which implies that if the value of DA increase by 1% the Dividend Payout Ratio (DPR) decreased by (15.44%). This was supported by the study of Rozef (1982); Myers, 1984; Jensen, 1986; He et al., 2009; Mehta, 2012. They argued that if the firms have higher financial leverage, the dividend payout ratio of the firm may be lower. According to the **Transaction Cost Theory**, the firms must spend money and assets to the creditor before paying a dividend to shareholders. Besides, firms keeping the high debts ratio may reduce the dividend ratio if they do not want to face high costs when increasing funds outside.

**H03(SIZE):** The value of P (0.020) which is less than .05 in the 5% significant level which states that the null hypothesis (H03) is rejected and the alternative hypothesis is accepted (H13). An evaluation of the slope of the coefficient of the explanatory variable reveals that it has a positive relationship between Size (SIZE) and (DPR). The control variable SIZE of the Service sector signaling a significant and positive relationship to dividend payment decisions for the entire period of study 2008-2017. The coefficient value is (3.73) which imply that if the value of SIZE increases in one unit the Dividend Payout Ratio (DPR) increased by (3.73%). This confirmed by the result of Alli et al. (1985), Chay and Suh (2009), Ahmed and Javid (2009), Mehta (2012). They argued that the bigger size firms have the higher the dividend policy they pay and vice versa. As big companies can access easily with many sources from the capital markets and hence, this will lead to raising funds with lower issuing costs and higher agency costs. Al-Kuwari also stated that larger firms pay additional dividends in order to reduce agency costs, supported by the **Agency Cost Theory**.

**H05 (EPS):** The value of P (0.000), which is less than .01 in the 1% significant level which states that the null hypothesis (H05) is rejected and the alternative hypothesis is accepted
An evaluation of the slope of the coefficient of the explanatory variable reveals that it has an inverse relationship between Earnings per share (EPS) and Dividend Payout Ratio (DPR). The Profitable variable (EPS) of the SERVICE sector signals a significant and inversely related to dividend payment decisions for the entire period of study 2007-08 to 2016-17. The coefficient value is (-0.4796) which implies that if the value of EPS increases in one unit the Dividend Payout Ratio (DPR) decreased by 0.48%.

Josiah (2014) argued that the capital in firms finance investment must be firstly from internal finance, and if external finance is necessary, Companies prefer to use debt capital before issuing share capital to reduce transaction and other costs. If the company is more profitable, according to the Transaction Cost Theory like pay low dividend to avoid high costs of issuing debt and equity financing.

The Profitable variable (EPS) of the SERVICE sector signals a significant and inversely related to dividend payment decisions for the entire period of study 2007-08 to 2016-17. The coefficient value is (-0.4796) which implies that if the value of EPS increases in one unit the Dividend Payout Ratio (DPR) decreased by 0.48%.

H07(FCF): The value of P is (0.019), which is less than .05 in the 5% significant level which states that the null hypothesis (H07) is rejected and the alternative hypothesis is accepted (H17). An evaluation of the slope of the coefficient of the explanatory variable reveals that it has a relationship between Free Cash Flow (FCF) and (DPR) which was also found to be significant at 95% confidence level. The Free Cash Flow variable (FCF) of the SERVICE sector signals a significant and inverse relation to dividend payout ratio for the entire period of study 2007-08 to 2016-17. The coefficient value is (-0.5287) which implies that if the value of FCF increase by 1% the Dividend Payout Ratio (DPR) decreased by (0.53%). So the result from REM is contrary to the theoretical prediction. According to the research assumption, firms with high and stable profitability may have a strong cash flow to pay dividends. Therefore, this result is explained by the Pecking Order Theory that firms want to retain more earnings to avoid high costs and explains the higher the profit of firms, the lower the dividends, supported by Do Thi Van Trang (2016). This relation indicates that the companies with a high amount of idle cash with management would like to pay a smaller amount of dividends. Managers utilize the cash in order to maximize perquisites on the job at their own benefit. This is the cause of the shareholders and management agency conflict, Abel Fumy, Isaac Doku (2013).

H08(DDT): The value of P is (0.000), which is less than 0.01 in the 1% significant level which states that the null hypothesis (H08) is rejected and the alternative hypothesis is accepted (H18). An evaluation of the slope of the coefficient of the explanatory variable reveals that it has a positive relationship between Dividend Distribution Tax (DDT) and Dividend Payout Ratio (DPR). The variable (DDT) of the Service sector signaling a significant and positive relation to dividend payment decisions for the entire period of study 2007-08 to 2016-17. The coefficient value is (2.082373) which indicate that if the value of DDT increases in 1% results in the increase of the Dividend Payout Ratio (DPR) by 2.08%. Investors in a high tax bracket would prefer to invest in stock giving a low rate of return so as to pay low tax. On the other hand, the investors who belong to a low tax bracket would definitely prefer to invest in stocks with higher returns as he currently does not have a large tax liability. Pettit (1977) showed that the investors who are older (retired persons) have more like to invest in the Stock which having the high dividends paying records because generally, they pay lower income tax. In this case, we call it the tax clientele effects. The clientele effects mean the firm’s dividend policy-making decisions, which are based on the customers Litzenberger and Ramasawmy (1979). This result supports to Tax Preference and Clientele Theory.

9. Conclusion
From the results of this regression Analysis, it is observed that the determinants of Dividend Payout Ratio are Debt to Total Assets (DA), Size (SIZE), Earnings per Share (EPS), Free Cash Flow (FCF) and Dividend Distribution Tax (DDT).

The empirical results also suggests that Size (SIZE) and Dividend Distribution Tax (DDT) have positive impact while Debt to Total Assets (DA), Earnings Per Share (EPS) and Free Cash Flow (FCF) variables have negative impact on the Dividend Payout Ratio (DPR) for the entire period of study. **Finally the Dividend Payout Ratio(DPR) = 11.40-15.44DA +3.73SIZE -0.48EPS -0.53FCF+2.08DDT+ε.**

10. Suggestions
The main implication of this study is that the investors can use the key factors affecting the dividend policy of a firm to decide which firms will have high or low Dividend payout ratio and invest accordingly. Also, the managers can use the significant determinants of dividend payment decisions to set appropriate dividend policy for a firm.

11. References
Books:-

Journals:-


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