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Research Article

AN EMPIRICAL ASSESSMENT OF QUANTITATIVE FACTORS DETERMINING DIVIDEND POLICIES OF LISTED FIRMS IN INDIA

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Abstract: *The present study analysed the quantitative factors that determine the dividend policy of all BSE firms listed in India. The analysis is based on 2,845 BSE listed firms for a period ranging from 1992 to 2018. Panel regression has been employed to assess the relationship between dividend policy and quantitative factors. A few variables were identified from past studies such as profitability, leverage, liquidity, free cash flows, firm age and size as determinants of dividend policy. The results of the panel data regression exhibit that firm liquidity, firm age and firm profitability are significant factors which affect dividend policy for firms listed in India.*

Keywords: Dividend, BSE listed firms, Panel Regression, India.

Introduction

One of the most important decisions in the field of corporate finance pertains to dividend policy. The board of the directors, in view of company's article of association along with economic conditions and several other factors decides upon the dividend policy. Dividend represents that portion of current year's profit that is being paid out to the shareholders in return of their investment made in the company. The company's top management in the board meeting decides how much to pay in form of dividend and how much to retain so that there are sufficient funds available for reinvestment purposes and also satisfies the expectations of the equity shareholders. The adequacy of dividend payment is paramount as it helps in maintaining equity share prices. It is worth noting that the company's dividend policy has an even bigger role to play. Traditionally, dividend policy was only considered as a means to fulfil the expectations of the equity stakeholders. However, in view of signalling theory of dividend, the dividend policy sends a signal about the financial health of the company to the market. It signals how the company has performed in the last year and is expected to perform in future years.

To enable optimal decision making by the firms and establish relationship between dividend policy and firm value, several theories on dividend relevance and irrelevance have been developed. On one hand, Lintner (1956) and Gordon (1959) show that dividend policy may be used as a way to enhance firm value, while on the other hand, Modigliani and Miller

(1961) show that the dividend policy has no impact on firm value. Even after decades of meaningful and extensive research, there is no common consensus with regard to the factors that affect dividend decisions and the extent of impact that these factors have. Almost half a century ago, Black (1976) wrote, "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together" (p.5). The situation looks equally complex in today's times.

The previous research studies have analysed a few factors belonging to a few industries. The output is dependent on the industry, country and time period under consideration. Though, a few significant factors have been established as the determinants of dividend policy, their net impact on dividend policy is ambivalent. Given the importance of dividend policy, there is a need for comprehensive and extensive study which incorporates maximum number of firms and for longest time period. The present study adds to the current literature by analysing determinants of dividend decisions of all BSE listed firms for a period ranging from 1992 to 2018. Through past studies, a few dominant factors have been identified and they will now be analysed in context of firms listed in India.

Literature Review

Dividend is one of the most important facets of an organization's financial decision making and has therefore has captured the attention of all policy makers across the globe. Many researchers have contributed to the field of dividend policy and related aspects. In this section, we elucidate a few notable studies on dividend decision making.

Lintner (1956) analysed how U.S. managers make dividend decisions by constructing a model which included a few variables such as firm size, capital expenditure on plant and machinery, bonus issue, desire to employ outside funding, earnings steadiness and ownership by control groups. He analysed 600 listed firms and found that U.S. firms follow a target dividend payout ratio and attuned their dividend policy to reach this target. He also showed that firms follow a stable dividend policy.

Mahapatra and Sahu (1993) analysed dividend policy determinants for 90 firms from 1977 to 1989 by using the models developed by Lintner (1956), Darling (1957) and Brittain (1966). The results exhibited that cash flow, previous dividends and net income were the most important dividend determinants. Kaur (1997) analysed over 100 Indian firms by employing multiple regression model and showed that Lintner's model of dividend was applicable to their sample firms. Ben et al. (2006) analysed 48 listed Tunisian firms for the period 1996

-2002 by employing panel regression to determine determinants of the dividend policy. The results showed that current year earnings and past year dividends were significant factors in determining dividend policy.

Pandey (2001) analysed financial data of 248 listed Malaysian firms by employing panel data regression and found that industry factors have a significant influence on dividend payout ratios and that these firms were less stable in their dividend policies. Aivazian et.al (2003) compared the dividend policy of firms in emerging market with firms in U.S market and found that firms in emerging markets have a higher dividend payout ratio. Benzinho et al. (2004) used the Lintner (1956) dividend policy model to analyse dividend policy of firms listed on the Lisbon Stock Exchange. They employed panel data regression and showed that firms followed stable cash dividend policies; and the current year's income and lagged dividend determined the dividend policy for upcoming years.

Anand (2004) surveyed 81 CFOs of firms listed in India to examine determinants of dividend policy of Indian firms. He showed that firms move towards target dividend payout ratio and also that dividend announcements influence market value by sending signal about current and future growth prospects of firms. Amidu & Abor (2006) examined 20 firms listed on Ghana Stock Exchange from 1998 to 2003 by employing simple linear repression model and showed that profitability, tax, cash flow and market to book ratio have a positive influence; while growth in sales had a negative influence on dividend policy.

Adesola and Okwong (2009) showed that in case of Nigerian firms, current profits and past dividends had a strong influence on dividend policy; while the impact of firm size and growth prospects were negligible. Al-Kuwari, D. (2009) analysed 191 firms listed on the Gulf Cooperation Council (GCC) stock market for a period between 1999 and 2003. The results showed that firm size, government ownership and profitability had a positive influence on dividend policy; while investment opportunities had a negative influence. Ranti (2013) examined dividend policies of 50 listed Nigerian firms from 2006 to 2011 by employed regression on annual financial data and showed that board independence, firm size and firm performance had a positive, while debt levels had a negative influence on dividend policy.

Maldajian & Khoury (2014) analysed unbalanced panel data of listed Lebanese banks from 2005 to 2011 to analyze their dividend policies. They used panel data regression and showed that risk, firm size and past year dividends had a positive, while growth opportunities and profits had a negative impact on dividend payout. They further exhibited that these banks

primarily prefer to retain profits; and they pay dividends only to mitigate agency conflicts. Wasike & Ambrose (2015) examined 60 listed firms in Kenya from 2004 to 2014 with the help of panel regression and found that cashflows and profits positively affect dividend payout; while market to book ratio and growth in sales revenue negatively affect dividend policies.

Soondur et al (2016) studied dividend policy of 30 Mauritius based firms from 2009 to 2013 by employing panel regression and demonstrated that firms with high EPS paid more dividends whereas firms with greater retained earnings and profits paid lesser dividends.

Labhane & Mahakud (2016) analysed 781 NSE listed Indian firms from 1995 to 2013. They divided the study into two time periods, first from 1994 to 2003 and second from 2004 to 2013 and employed panel data regression models. They exhibited that profitability, liquidity, firm size positively affected dividend, while investment opportunity, leverage and risk negatively affected dividend payout.

Research Gap

All the existing studies on dividend policy pertain to one or the other industry. Extant research analyses limited firms for limited period of time. There is a need for a thorough study to understand the broad view of dividend policy that firms follow in India for all possible firms and for longest time period possible.

Research Objective

To analyse the determinants of dividend policy of firms listed in India.

Method

The present study employs a few variables which are likely to affect the dividend policies of firms listed in India. To study the dividend behaviour, we employ financial data from 1992 to 2018 of all non-financial firms listed on Bombay Stock Exchange in India. The data has been downloaded from Prowess Database, maintained by Centre for Monitoring Indian Economic Pvt, Ltd (C.M.I.E).

Model Specification

Majority of the research papers have employed logit model or probit model, as they analyzed the impact of determinants on firm paying dividend or not. This information is in binary form. In the present study, the dividend policies have been analyzed in terms of dividend payout as compared to presence or absence of dividend payment.

The present study is based on financial data of several years collected for a very long period,

i.e., from 1992 to 2018. Hence, the data has both time series and cross-sectional features. Therefore, panel data regressions have been used to study dividend financing behaviour of firms. We also used the Hausman test to know whether Fixed Effect Model or Random Effects Model should be used. The panel data regression has been run using Stata 14.

The empirical model for the present study:

$$DIV_{it} = \beta_0 + \beta_1 LEV_{it} + \beta_2 LIQ_{it} + \beta_3 AGE_{it} + \beta_4 PROF_{it} + \beta_5 SIZE_{it} + \beta_6 FCF_{it} + e_{it}$$

where, $\beta 0$ = constant

βs = slope coefficients

DIV_{it}= Dividend paid as % of PAT by firm *i* in period *t.*

LEV_{it} = leverage ratio represented by Debt/ (Debt + Equity) of firm *i* in period *t.*

LIQ_{it} = liquidity of firm *i* in period *t* measured using current ratio, Current Assets / Current liabilities

AGE_{it} = natural log of firm age calculated as current year - year of incorporation.

$PROF_{it}$ = profitability measured as profit after tax/ total assets for firm *i* in period *t*

$SIZE_{it}$ = size of firm i in period t measured using natural log of net sales for firm *i* in period *t*

FCF_{it} = free cash flow measured as excess of operating income over capex of firm *i* in period *t*

e_{it} = error term for firm *i* in period *t*.

Results

We first show the descriptive statistics of all variables belonging to 2,845 firms listed on the Bombay Stock Exchange of India. Table 1 shows mean, median, maximum, minimum and standard deviation of all variables. The result exhibit that average and median of a few factors such as LEV, LIQ, PROF and SIZE are very close indicating that there are no extreme outliers. The average value of regressand, i.e., dividend payout ratio is 23.31 which means that the average percentage of income distributed by these firms in form of dividends is 23.21%. Also, the average Current ratio (liquidity) is 2.66, logarithm of age is 27.76, average market leverage is 0.33, average profit/total assets 0.06 and average free cash flow is 1588.

Table 1: Descriptive Statistics

COMPANY	DIV	LEV	LIQ	AGE	PROF	SIZE	FCF
Mean	23.21	0.33	2.66	27.76	0.06	7.29	1588.66
Median	11.45	0.23	1.32	23	0.04	7.16	112.80
Minimum	-13.60	0	0	0	-0.02	1.16	-46155.70
Maximum	27850	1.00	779	151	9.81	14.59	377776
Standard Deviation	182.42	0.32	14.30	19.42	0.12	1.92	9179.73

To examine the influence of chosen independent variables on dividend policy, panel regression has been employed. We first estimate fixed effects model and then random effects model. After this, we apply Hausman test to know which model is more appropriate. The

table below shows the results of fixed effect model. Also, in the table, it is evident that p value of Hausman test is more than 5%, which is indicative of suitability of random effects model.

Table 2: Panel Data Regression Model				
Explanatory Variables	**Fixed Effects Model**			
	Coef.	**Std. Err.**	**t value**	**Probability**
Intercept	19.65	10.71	1.83	0.07
LEV	0.68	5.67	0.12	0.90
LIQ	-0.03	0.09	-0.34	0.74
AGE	-0.69	0.25	-2.82	0.01**
PROF	-33.78	9.90	-3.41	0.00**
SIZE	3.29	1.93	1.71	0.09
FCF	0.00	0.00	2.32	0.02*
R Squared	18.34%			
F statistic	4.43			
Prob (F statistic)	0.0002**			
Hausman Test Chi Sq	9.12			
Hausman p value	0.1045			
Number of Observations	28,455			
Number of Groups	2,845			

Note: ** means significant at 1% and * means significant at 5%.

Once, the Hausman test statistics reveal that random effects model is more appropriate, we estimate random effects model and present the output in Table 3.

Table 3: Panel Data Regression Model				
Explanatory Variables	**Random Effects Model**			
	Coef.	**Std. Err.**	**t value**	**Probability**
Intercept	15.34	5.68	2.7	0.007**
LEV	1.66	3.47	0.48	0.632
LIQ	-0.05	0.01	-3.82	0**
AGE	-0.29	0.13	-2.13	0.033*
PROF	-31.23	12.21	-2.56	0.011*
SIZE	2.02	1.50	1.35	0.176
FCF	0.00	0.00	1.49	0.136
R Squared	21.49%			
F statistic	28.26			
Prob (F statistic)	0.0001			
Number of Observations	28,455			
Number of Groups	2,845			

Note: ** means significant at 1% and * means significant at 5%.

Table 3 shows that our model is statistically significant as F value is significant at 1%. Further, the model exhibits that r squared is 21.49%; indicating that our model explains 21.49% variation in dividend payment behaviour. The separate β coefficients and their p value indicate that firm liquidity, age and profitability are significant factors in affecting dividend decisions; whereas, debt equity ratio, firm size and free cash flow do not play a significant role in dividend decision making.

Discussion

The review of literature has shown that dividend payout ratio is affected by several factors such as future financial needs, profitability, firm size, firm age, financial leverage, liquidity and free cash flows. The above section shows the measurement and role in dividend policy. We first begin with leverage, which has been found to have positive but insignificant influence on dividend decision making. This means that leverage levels are incapable of explaining changes in dividend payout ratio. The results are in contradiction with the findings of majority of the studies (Aivazian et.al, 2003; Mahakud, 2005; Al-Kuwari, 2009; Gupta & Banga, 2010 and Labhane & Mahakud, 2016) which have found leverage to have a significantly negative influence on dividend policy.

The second determinant that we now discuss is firm liquidity as measured by current ratio. The results show liquidity to have negative and highly significant influence on dividend decision making. This could be due to the fact that firm would like to invest its excess liquidity for greater investor's future returns. The third variable that we now discuss is the firm age, which is likely to negatively and significantly affect dividend policies. This means that younger firms pay more dividends than the older firms.

The fourth variable that we now analyze is firm profitability. It is found to have a significantly negative influence on dividend policies. The influence of profitability on dividend policy is mixed. A few studies (Al-Kuwari, 2009; Aivazian et.al, 2003; Najjar and Hussainey, 2009 and Wasike & Ambrose, 2015) have exhibited a positive influence on dividend policies. However, the pecking order theory predicts that the profitable firms are dependent on retained earnings to finance future growth opportunities, leading to reduced dividend payment by profitable firms. This is well supported by empirical researches (Myers & Bacon, 2004; Kania & Bacon, 2005; Amidu& Abor, 2006; and Labhane & Mahakud, 2016) who showed negative influence of profitability on dividend payout.

The fifth determinant of dividend policy is firm size, which positively but insignificantly affects dividend policies. This could be because large firms have large earnings and better capacity to pay dividends; while small firms pay lesser dividends as they have limited avenues for meeting their financing needs. However, in the present study, firm size is insignificant in explaining dividend decisions. A few studies have shown positive relationship (Aivazian, 2003; Al-Kuwari, 2009; Al-Shubiri, 2011; Ranti, 2013; Maldajian & Khoury, 2014; Labhane & Mahakud, 2016). Others have exhibited a negative relationship between firm size and dividend policies. The sixth variable that we now discuss is free cash flows, which has been found to have a significantly negative role in dividend decision making. The results are in line with the findings of Parsian and Koloukhi (2014).

Conclusion

The present study analyzed the firm factors affecting dividend policies of all non-financial firms listed on Bombay Stock Exchange. The data pertains to 2,845 firms belonging to several industries. The data has been collected on several variables from 1992 to 2018 using Prowess database maintained by C.M.I.E. In order to analyse both cross sectional and time series aspects of data, we employ panel regression. We first estimated fixed effects model, then random effects models, followed by Hausman test. The Hausman test exhibited suitability of Random Effects model as p value was more than 5%. The analysis showed that firm liquidity, age and profitability have highly significant influence on dividend policies, while leverage, size and free cash flow do not have a significant impact.

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