Volume - 5, Issue- 11,November 2017 IC Value 2016 : 61.33 e-ISSN : 2347 - 9671| p- ISSN : 2349 - 0187
EPRA International Journal of Economic and Business Review SJIF Impact Factor(2017) : 7.144
ISI Impact Factor (2013): 1.259(Dubai)

Research Paper

DETERMINANTS OF DIVIDENDS BEHAVIOUR IN INDIAN IRON AND STEEL INDUSTRY

Dr. Darishisha War Thangkhiew[1]

[1]*Assistant Professor, Department of Economics, North Eastern Hill University, Shillong, Meghalaya, India*

ABSTRACT

In the paper the determinants of dividends in Indian Iron and Steel Industry are being investigated in the framework the Lintner's model. According to his hypothesis profit and past dividend payment are the two most important factors governing the dividend decision of any firm. The explanatory variables considered for the study are flow of net debt, profit after tax, lagged dividend, gross fixed investment and inventory investment. This paper used the data of public limited companies, which are non-governmental and non-financial, for the period 1999-2000 to 2010-11. The model has three specifications in which time series, cross section and pooled data is employed for estimation using ordinary least squares method. The results of the three above mentioned analyses, revealed the importance of current profit and lagged dividend in determining the dividend payout decision in Indian iron and steel industry.

KEYWORDS: *dividend, Litner's model, lagged dividend, profit.*
JEL classification numbers: C31, C32, C3, G35

1. INTRODUCTION

Dividend can be defined as the distribution of created value to the share holders. The distribution may be in the form of cash which is called 'cash dividend' or it may be in the form of stocks of the company which is known as 'stock dividend'. Dividend policy of a company or firm is a trade-off between the amount of retained earnings and distributed cash or securities. Dividend decision involves several complex issues in it. It should not merely be taken to be a decision of appropriation of profits to the shareholders. As such the factors influencing the dividend decisions have always intrigue the experts and researchers in the field of financial management.

Profit after tax is usually the source of dividend payment hence these two are expected to move in the same direction. Dividends are distributed out of profits, the larger the retained profit the smaller the dividends and vice versa. Therefore an inverse relationship is postulated to exist between retained earnings and dividends. The financial policy of the firm will determine whether it will make dividend payment or retained the profit. Supposing that dividends are paid, in this case the volume of retained profit will contract, leaving the firm in a lower liquidity position. The investment needs of the firm may now be affected by the lower liquidity, thereby driving the firms to rely on external finance for fulfilling its investment needs. In short, dividends affect retained earnings, retained earnings affect investment which in turn affect external financing. So it can be expected that dividend should have an indirect but positive relationship with demand for external finance.

In 1956, John Lintner has laid the foundation for the modern understanding of dividend policy leading to the emergence of the Lintner's Hypothesis. According to the hypothesis, dividends are sticky, tied to long-term sustainable earnings, paid by mature companies and smoothened from year to year. The corporate management has a target dividend pay-out ratio based on various considerations and tries to achieve it gradually over time. Hence Lintner's hypothesis implies stability of dividend behavior. Dividend change in any period is linked to the divergence between dividends that are corresponding with the desired pay-out ratio for a given level of profits and dividend payments in the previous period.

The level of Profits, sales change variable, lagged dividend, liquidity, fixed investment, share prices, depreciation allowance and flow of external funds are the important determinants of dividend behavior in the studies carried out by Brittain (1966), Darling (1957), Swamy and Rao (1975), Khurana (1980), Krishnamurthy and Sastry (1975), Dhrymes and Kurz (1967), Kuh (1963), Purnanandam and Hanumantha Rao (1966), Dhameja (1978), Sastry (1966) and others.

In USA, Darling (1957), Fama and Babiak (1968), and Brittain (1966) used the modified and extended version of Lintner's model to confirm his findings. A survey of the NYSE-listed companies by Baker et al (1985) supported the Lintner's findings, and they concluded that the major determinants of dividend payments are the future earnings and past dividends. The subsequent survey study of Pruitt and Gitman (1991) also confirmed these results. A study of the dividend behaviour of listed Malaysian companies by Pandey, (2003) showed

that the payout ratios vary across industries and time. The results also revealed that the dividend behaviour of the Malaysian companies is sensitive to changes in earnings. Further, using Lintner's framework and the panel regression methodology, the study finds evidence of less stable dividend policies being pursued by the Malaysian companies. The results of the two-way fixed effect model revealed a strong individual firm and time effects.

In India, several such studies have also been conducted using the Lintner's framework. A study by Bhat and Pandey (1994) in Indian corporate sector supported the Lintner's findings and revealed that Indian managers confirmed that companies maintain an uninterrupted record of dividend payments and also try to avoid abrupt changes in their dividend policie

Dividend decisions in the corporate sector are governed by large number of determinants. The various researches studies done abroad and in Indian context have been discussed in detailed in the literature review chapter. The key determinant of dividend payments is the current earnings which represents the capacity of a firm to pay dividends. Profitability has a positive relationship with dividends. The present study has used Profit after tax as a proxy for profitability of the company.

The specification of dividend equation by Lintner (1956) suggested that lagged dividend is the only other explanatory variable of dividend policy (the first being net profit). The rationale of lagged dividend as a determinant of dividend policy is provided by the speed of adjustment mechanism, which states that firms try to achieve a certain desired payout ratio in the long run. In order to follow a stable dividend policy management has to allow the past dividend trend to influence the current dividend payments.

In the case where a company decides to finance capital expenditure from internal resources, both dividend and capital expenditure decisions would compete for resources, therefore, capital expenditure is negatively related to dividend payments.

Payment of dividends is postulated to compete with investment expenditure for profit after tax, that is, the firm can either pay dividend or use the profits for reinvestment purpose. If firms choose to pay dividend out of profits, investment plans may be adversely affected as the firm may be left with lower level of internal funds. The firms may have to borrow from banks and financial institutions to meet investment expenditures. In this case dividends are expected to have a positive relationship with external finance.

In some of the recent studies on dividend behavior, risk has been identified as one of the determinants of dividends. The rationale of including risk is that companies having higher market risk would payout dividend at a lower rate and vice versa. The companies risk is measured by the year to year variability of retained earnings or profits. The variability of profit is included as one of the explanatory variable of dividend behavior and an inverse relationship is expected to be present between the two.

2. OBJECTIVES

- To examine the interdependence between dividend decision and investment decision in iron and steel industry in India
- To examine the determinants of dividend in iron and steel industry in India.

3.METHODOLOGY

3.1. DATA

The source of data for this study is the Reserve Bank of India, Mumbai. The data is on non-government, non-financial public limited companies in the Iron and steel industry in India. It provides information on the liability and assets and also on income, expenditure and appropriation account.

3.2 SAMPLE PERIOD

The company wise data are available from 1980-81 onwards. The data frequency is annual covering the period 1980-81 to 2010-11. The number of companies in the original data set was much higher but companies with fewer than twelve consecutive years of data are deleted from the data set. For the present study, the sample period is 1999-2000 to 2010-2011. However, for time series study the data has been classified into three groups. The rationale for segregating data into three groups A, B and C, in the case of time series study is to gain more units, that is, more companies can be included for the analysis. In group 'A', we have six companies with data from 1995-1996 to 2010-2011. In group 'B' there are 27 companies with data from 1997-98 to 2010-11. In group 'C' there are 38 companies with data from 1999-2000 to 2010-11. The choice of the study period is dictated by the availability of data and limited by the fact that only those companies with continuous data set have been selected.

3.3 MODEL SPECIFICATIONS

The models are estimated for cross-section, time-series and pooled time series cross section data. In the time-series study, the data have been classified into three groups. In group 'A' there are 6 companies having data ranging from 1995-96 to 2010-11. While in group 'B' there are 27 companies having data from 1997-1998 to 2010-11 and in group 'C' there are 38 companies having data from 1999-2000 to 2010-11.

The model's specification is as follows:

$$DIV_t/K_{t-1} = a + b\ PAT_{t-1}/K_{t-1} + c\ FNDE_{t-1}/K_{t-1} + d\ (I_t + IN_t)/K_{t-1}$$

$$+ e\ PAT_t - PAT_{t-1}/K_{t-1} + f\ DIV_{t-1}/K_{t-1} \qquad \ldots(1)$$

Where,

I = Gross Fixed Investment
K = Gross fixed assets.
IN = Inventory investment.
FNDE = Flow of net debt (External finance)
DIV= Dividends.
t = Time subscript.

3.3.ESTIMATION PROCEDURE

All the variables are in current prices. All the variables except sales change variable, are deflated by capital stock variable of the previous year. However, sales change variable is deflated by sales of the previous year. By deflating, we have converted the variables into ratios which are independent of the unit of measurement and scale and thereby help in correcting heteroscedasticity..

For analyzing the data we have used STATA software. The analysis is carried out for three cases, namely, cross-section data, time-series data and pooled data. In time series analysis, we begin the estimation process by testing the time series properties of the data. The study uses Augmented Dickey-Fuller (ADF) unit root test to investigate stationarity of each time series as proposed by Dickey and Fuller (1981), fortunately all the variables considered in the model are

stationary of order I (0). Since the Durbin-Watson statistics do not indicate the presence of autocorrelation, there is no need to adopt remedial measures. The analysis is carried out for linear form for time series and cross section data. The parameters of the equation are estimated by the ordinary least squares (OLS) method.

In our study we use panel data consisting of pooled time series of cross sections in which one has repeated observations on the cross-section units (firms) over time. Initially, using the STATA software, we try both types of alternative panel data models namely, Random Effects and Fixed Effects models. The Hausman (1978) specification test for Random Effects Model and the F- test for Fixed Effects Model reject both these types of model specifications, and hence we use the OLS (ordinary least squares) method to estimate the empirical models with pooled cross section – time series data.

4. RESULTS

4.1. CROSS-SECTION ANALYSIS

The results of the specification are given in Table (1). The R^2 ranges from 0.51 to 0.87. Profit variable is seen to be a highly significant variable being positive in all, except two cases. However the changes in profit, total investment and flow of net debt are significant in only few cases. The most significant explanatory variable is lagged dividend. This variable is positively related to dividend and significant in all cases except one. The cross-section results clearly support Lintner's model of dividend behavior, where profits and past dividends are the main determinants of dividend payout

Table (1)

Year	con	PAT_t/K_{t-1}	$FNDE_t/K_{t-1}$	I_t+IN_t/K_{t-1}	DIV_{t-1}/K_{t-1}	PAT_t-PAT_{t-1}/K_{t-1}	R^2	F	p
1999	.0053 (0.12)	.4868 *(3.15)	.2284 *(2.32)	-.0165 (-0.59)	.5415 *(5.01)	-.0193 (-0.47)	0.7521	24.2	***
2000	.6103 *(2.84)	.8658 *(3.80)	.0319 (0.18)	-.3160 (-1.94)	1.057 *(5.24)	-.5446 *(-2.68)	0.8725	43.14	***
2001	.0027 (0.67)	.2125 (1.54)	.0661 (0.96)	.0325 (0.50)	.1412 *(2.50)	-.0159 (-0.26)	0.5206	6.49	***
2002	.0024 (0.85)	.2500 *(3.17)	.0016 (0.15)	- .0276 (-1.34)	.4040 *(3.79)	-.0065 (-0.29)	0.6003	9.61	***
2003	.0098 (1.33)	.3444 *(3.75)	.0011 (0.08)	-.0265 (-1.26)	.3870 *(3.29)	.0588 (1.28)	0.5416	7.56	***
2004	.0398 *(2.32)	.2012 *(3.30)	-.0137 (-0.32)	-.0429 (-1.12)	.2353 *(2.17)	-.2243 *(-2.64)	0.6343	7.34	***
2005	.0135 (0.83)	.3073 *(2.65)	.0211 (0.27)	-.0713 (-0.73)	2.6246 *(8.08)	-.1432 (-1.50)	0.8573	10.44	***
2006	.0102 (0.12)	.0569 *(4.09)	.0145 *(2.00)	-.0060 (-0.57)	.5897 *(7.81)	-.0150 (-1.21)	0.8297	11.17	***
2007	.0125 (0.43)	.3375 *(3.07)	.0400 (1.39)	-.0062 (-0.42)	.0622 *(2.88)	- .0749 *(-2.60)	0.7335	7.62	***
2008	.1028 (1.11)	.2138 (1.92)	.0602 (0.33)	-.4601 *(-2.40)	.6820 *(3.77)	-.0303 (-0.23)	0.7781	15.86	***
2009	.2066 *(2.50)	.0522 *(2.52)	.0069 (0.95)	-.0506 *(-2.19)	.4349 *(3.86)	-.0347 (-0.48)	0.5172	7.78	***
2010	.0503 (0.24)	.6284 *(2.17)	.2008 (1.48)	-.3609 *(-2.56)	.8475 *(7.90)	-.2243 (-1.80)	0.796	24.97	***

For p * indicates coefficient is significant at 1% level,
*** indicates coefficient is significant at 10% level.
For t * indicates coefficient is significant at 5% level.

4.2. TIME-SERIES ANALYSIS

The estimated results of the time-series analysis for Group A, with 6 companies are presented below:

$$DIV_t/K_{t-1} = 0.2909_{(1.03)} + 0.5593^{*}_{(4.86)}\, PAT_{t-1}/K_{t-1} + 0.0335_{(0.06)}\, FNDE_{t-1}/K_{t-1} - 0.0802_{(-1.97)}\, (I_t + IN_t)/K_{t-1} + 2.884^{*}_{(3.42)}\, DIV_{t-1}/K_{t-1} - 1.5593^{*}_{(-2.86)}\, PAT_t - PAT_{t-1}/K_{t-1}$$

R^2= 0.7512, F = 5.44, DW= 2.0442

The estimated results for time-series analysis for Group B, with 27 companies are given below:

$$DIV_t/K_{t-1} = 0.1433^{*}_{(2.57)} + 0.1050^{*}_{(3.01)}\, PAT_{t-1}/K_{t-1} + 0.0126^{*}_{(2.28)}\, FNDE_{t-1}/K_{t-1} - 0.0318^{*}_{(-2.86)}\, (I_t + IN_t)/K_{t-1} + 0.6708^{*}_{(6.94)}\, DIV_{t-1}/K_{t-1} - 0.0232_{(-1.33)}\, PAT_t - PAT_{t-1}/K_{t-1}$$

R^2= 0.9507, F = 30.87, DW=2.0549

R^2= .967, F = 35.19, DW=2.1034

The estimated results for Group C with 38 companies are given below:

$$DIV_t/K_{t-1} = 0.0201_{(0.31)} + 0.1369^{*}_{(2.46)}\, PAT_{t-1}/K_{t-1} - 0.0014_{(-0.18)}\, FNDE_{t-1}/K_{t-1} - 0.1279^{*}_{(-2.37)}\, (I_t + IN_t)/K_{t-1} + 0.9454^{*}_{(7.47)}\, DIV_{t-1}/K_{t-1} - 0.0418^{*}_{(-2.81)}\, PAT_t - PAT_{t-1}/K_{t-1}$$

The three estimated linear equations strongly suggest that lagged dividend and profits are statistically significant variables, having positive relationships with the explained variable. The R^2s' values are around 0.7, indicating the goodness of fit of the model.

4.3. POOLED ANALYSIS

The estimated pooled time-series cross-section model is given below:

$$DIV_t/K_{t-1} = -0.1202^*_{(-2.44)} + 0.3890^*_{(6.96)} PAT_{t-1}/K_{t-1} - 0.0219_{(-1.10)} FNDE_{t-1}/K_{t-1}$$
$$-0.0014_{(-0.37)} (I_t + IN_t)/K_{t-1} + 0.9356^*_{(17.47)} DIV_{t-1}/K_{t-1}$$
$$-.0283_{(-0.55)} PAT_t - PAT_{t-1}/K_{t-1}$$
$$R^2 = 0.5842, F = 58.59.$$

The R^2 is indicating the goodness of fit of the model. In this case the most significant variable is the lagged dividend variable and it is positively influencing current dividend variable. The flow of net debt is also negatively significant.

5. CONCLUSION

1.Current profit is found to be an important determinant of dividend behavior and it is positively related to it.

2.Lagged dividend is also another important determinant of dividend behaviour. This implies that the dividend level of the previous period is important for dividend decision in the present period.

The present paper aims at examining the interdependence among dividend decision with investment and financial decisions. In the analyses of the dividend behavior, the study reveals that profit and lagged dividend are important determinants thereby supporting the view given by Lintner. The implication is that firms under the iron and steel industry follow stable dividend policies. Investment expenditures, borrowing and risks are found not to have any bearing on the dividend decision of the firms. It can be concluded that investment decision do not influence the dividend decision. But the effect of financial decision on dividend decision can be linked through profit after tax even though external finance does not show any significance.

REFRENCES

1. *Thomas Dernburg. F. (1985), " Macro Economics: Concepts, Theories, and Policies," McGraw- Hill Book Company, Singapore, p.p: 12-16*
2. *Baker, H. Kent, Gail E. Farrelly and Richard, B. Edelman. "A Survey of Management Views on Dividend Policy". Financial Management, 14.3 (1985): 78-87.*
3. *Bhat, Ramesh and Pandey, I.M., "Dividend Decision: A Study of Managers' perceptions". Decision, 21(1&2), (1994): 67-86.*
4. *Brittain, J.A., Corporate Dividend Policy, The Brookings Institution, Washington. 1966.*
5. *Darling, P.G., "The Influence of Expectations and Liquidity of Dividend Policy". Journal of Political Economy. 65.3 (Jun., 1957): 209-224.*
6. *Dhameja, N.L., "Corporate Dividend Behavior with Special Emphasis on Growth and Controlled Companies". Unpublished Doctoral Dissertation, Indian Institute of Management, Ahmedabad. 1978.*
7. *Dhrymes, P.J. and M. Kurj, "Investment, Dividends and External Finance Behavior of Firms", In Ferber, R. ed., Determinants of Investment Behavior , Universities National Bureau Conference Series, No.18, Columbia University Press for The National Bureau of Economic Research, New York. 1967.*
8. *Fama, E. and H. Babiak, "Dividend Policy: An Empirical Analysis". Journal of American Statistical Association. 63, (1968): 1132-1161.*
9. *Khurana P.K., "Corporate Dividend Behavior in Selected Indian Industries". Unpublished Ph.D. Thesis University of Delhi, Delhi. 1980.*
10. *Krishnamurthy, K. and D.U. Sastry, Investment and Financing in the Corporate Sector in India. Tata McGraw Hill, New Delhi. 1975.*
11. *Kuh, E., Capital Stock Growth: A Micro-Econometric Approach. Amsterdam, 1963.*
12. *Lintner, J., "Distribution of Incomes of Corporations Among Dividends, Retained Earnings and Taxes". American Economic Review Papers and Proceedings, (1956): 97-113.*
13. *Pandey, I.M. "Corporate Dividend Policy and Behaviour: The Malaysian Evidence". Asian Academy of Management Journal. 8.1, (2003):17-32.*
14. *Pruitt, S.W. and L.J. Gitman. "The Interactions between the Investment, Financing, and Dividend Decisions of Major U. S. Firms", Finance Review. 26, (1991): 409-430.*
15. *Purnanandam,J. and K.S.Hanumantha Rao (1966), 'Corporate Dividends and Target Payout Ratios in the Indian Cotton Textile Industry: 1946-63', Journal of Industrial Economics, Vol. XV, No.1, pp.38-43.*
16. *Sastry, D.U., "Investment Behavior in the Capital Indian Goods Industry". Indian Economic Journal. 23.1. (1975).*
17. *Swamy, D.S. and Rao, V.G., "The Flow of Funds in the Indian Manufacturing Sector". Sankhya. C. 37, (1975): 11-19.*