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The Dividend Strategy of Indian Companies: An Empirical Assessment

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Abstract

The paper uses firms across different ownership categories to examine the factors influencing dividend policy. The results suggest that bigger, mature and low-leveraged firms tend to pay more dividends. As well, the findings suggest that bigger, less profitable and high-leveraged firms are more likely to initiate a dividend cut.

Key words: dividend strategy; leverage; firm size; manufacturing; India

Introduction

Examining dividend payout decisions is one of the fundamental components of corporate policy. The dividend policy of a company determines the division of earnings between payments to stockholders and reinvestments in the firm. Managers' task is to allocate the earnings to dividends or retained earnings. Retained earnings are one of the most significant sources of funds for financing corporate growth. Corporate growth makes it eventually possibly to get more dividends.

In this paper, we empirically investigate the dividend policy of a sample of Indian firms. The choice of India is based on three main reasons. First, India is one of the largest and fastest growing emerging economies. The findings so obtained may be representative of the factors impacting dividend policy of corporates in other emerging markets as well. Second, over the last decade-and-a-half, India has introduced an extensive set of reforms in the corporate sector, thereby providing an enabling environment for corporates to determine their capital structure and dividend payment decisions. And finally, India has a rich history of corporate database. The availability of a comprehensive and reliable corporate database over an extended time span permits rigorous statistical analysis and enables to clearly discern the important factors influencing corporate dividend policy.

Our study differs from extant ones in a few important ways. First, unlike earlier studies, our focus is on the dividend policy. Accordingly, in addition to exploring the factors influencing dividend decisions, we also examine how the dividend policy of previous years shape a firm's current decision on paying dividends. Second, we focus on a much extended time span spanning firms across various ownership categories than what has been considered in previous research. Third, we use a wide gamut of dividend measures reflecting different facets of dividend payments, to ensure robustness.

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The remainder of the article unfolds as follows. Section II provides a brief overview of the relevant literature. The database and sample are elucidated in Section III. Section IV discusses the results and findings and the final section concludes.

II. Literature

The primary theories why firms pay dividends are signaling theories and agency/ rent extraction theories. The former theories are founded on attracting investors on external capital markets, whereas agency/ rent extraction theories focus on the expropriation of (outside) shareholders.

Signaling theories argue that managers use dividends as a signal of expected future cash flow to outside investors. This signal is reliable because it is costly, so that only companies that actually have a higher expected cash flow are able to render this signal. The cost involved in signaling through dividends can be three-fold: a higher tax rate on dividends than on capital gains (Bhattacharyya, 1979), underinvestment (Miller and Rock, 1985) or the higher cost of external financing (Ofar and Thakor, 1987).

The second set of theories – the agency / rent extraction theories argue that a dividend lowers the amount of free cash flow in the company so that managers cannot employ it out of self-interests (Jensen, 1986; Myers, 2000) or, so that the potential for expropriation of outside shareholders is reducing by leaving less funds at the discretionary use of the controlling shareholder (Gurgler and Yurtoglu, 2002; Kinkki, 2008). The extent of expropriation by managers/ controlling shareholders at the expense of outside shareholders will be determined by (a) alignment of incentives between managers/ controlling shareholders and outside shareholders, and (b) the ability of outside shareholders to observe and take recourse against any expropriation (Michaely and Roberts, 2007).

In the case of India, early studies (Bhat and Pandey, 1994; Mishra and Narender, 1996) uncovered evidence to suggest that dividend payments depend on current and expected earnings. Subsequently, Reddy (2002) examined the dividend behavior and attempted to explain the observed behavior with the help of a trade-off theory and signaling hypothesis. The paper appears to indicate that dividend omissions have information content about future earnings, but does not find any evidence in support of the tax preference theory. Therefore, Manos (2003), using cross-section data from India, estimates the cost minimization model of dividends and finds that government ownership, insider ownership, risk, debt and growth opportunities, have a negative impact on the payout ratio, whereas institutional ownership, foreign ownership and dispersed ownership have a positive impact on the payout ratio. More recent analysis indicates that ownership is one of the important variables that influences the dividend payout policy (Kumar, 2006). Building on these previous studies for India, we examine the determinants of dividend policy for a sample of Indian firms for the period 1999-2008. The analysis indicates that bigger, low-leveraged firms tend to pay higher dividends. We also find significant divergence in dividend policy across firms. More specifically, that the possibility of initiating or paying same dividends in two consecutive years for firms is more likely to happen in an upturn.

III. Database, sample and empirics

III.1 The database

The data employed for the study is extracted from the *Prowess* database, generated and maintained by the Centre for Monitoring the Indian Economy (CMIE), a leading private think-tank in India. The *Prowess* is a firm-level database, akin to the *Compustat* database for US firms and the Financial Analysis Made Easy (FAME) database for UK and Irish public and private limited companies. This database is being increasingly employed in the literature for firm-level analysis on Indian industry concerning issues like the effect of foreign ownership on the performance of Indian firms (Chibber and Majumdar, 1999), the performance of firms affiliated to diversified business groups (Khanna and Palepu, 2000), the effect of privatization on firm profitability (Gupta, 2005) and the effect of financial liberalization in alleviating financing constraints for manufacturing companies (Ghosh, 2006, 2009).

The present dataset contains financial information on around 9,800 companies (including 4500 services and construction companies), which are listed on the stock exchanges. In addition, if an entity is not listed, it qualifies for inclusion in the database if the average sum of sales and total assets is at least Rs.200 million (\approx US \$4.6 million) as per the latest audited financial results. Accordingly, the firms in the sample generally do not include the smallest firms due to the requirements for firms to be included in *Prowess*.² Thus, in effect, the sample is skewed towards large Indian firms. The database contains detailed information on the financial performance of companies culled out from their profit and loss accounts, balance sheets and stock price data. There is also disaggregated information on the equity holding pattern of the firm as also the ownership type of the firm.

The selection of the sample is guided by the availability of data. We proceed in several stages for the selection of sample firms. In step one, we cull out information on all firms for the period 1999-2008 that are listed on the National Stock Exchange, Mumbai. This, in effect, provided us with aggregate information on 894 firms. In step two, given the focus of our empirical study, we retain firms whose main activity is in manufacturing, but exclude those for which their main activity is in the service sector, including finance. In the third and final stage, to obviate the effect of outliers, we winsorize all observations at 1% at both ends of the distribution. These exclusions leave us with a final sample of 801 firms his classification left us with a total of 696 firms for these two years belonging to 7 industry groups. Owing to the missing data on the concerned dependent variables for several firms, the maximum number of firm-years varies from a low of 6687 to a high of 6985.

The composition of the database is provided in Table 1. On average, roughly 45 percent of the firms have been paying dividends, with a high of just over 50 percent in 2007. Across industries, the highest percentage of dividend-paying companies were in chemicals (an average of roughly 10 percent) and the lowest were in cement (average of roughly 2 percent).

² The small and medium-sized firms (SME), as classified by the Indian Ministry of Small and Medium Enterprises, are those with gross fixed assets less than Rs.100 million (about USD 2 million).

The table also depicts the number of dividend-paying companies by ownership groups. It appears that the highest percentage of dividend-paying companies are typically groups firms: on average, around 32 percent of these firms were paying dividends in any given year. This is consistent with previous evidence that suggests that internal capital markets redistribute funds among group members, so that these firms find it easier to pay dividends as compared to stand-alone companies (DeLoof, 1998; Chang and Hong, 2000; Rajan *et al.*, 2000).

Table 1: Firm composition by industry group and ownership

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
No. of firms paying dividends	349	354	356	375	319	369	367	387	404	399
<i>By industry group</i>										
Food	30	24	31	27	26	29	27	31	37	35
Chemicals	75	76	79	80	69	82	78	77	79	83
Textiles	21	24	22	26	25	29	30	36	37	37
Machinery & equipment	53	55	50	55	43	45	49	47	57	52
Cement	16	14	15	16	15	14	17	17	15	18
Metal & metal products	19	19	18	19	17	23	23	24	22	26
Others	135	142	141	152	124	147	143	155	157	148
<i>By ownership</i>										
State	14	15	16	15	14	13	13	13	14	13
Indian private	40	51	57	69	57	74	73	98	106	112
Foreign	27	25	29	30	21	24	27	23	23	20
Group	268	263	254	261	227	258	254	253	261	254

III.2 List of variables

We consider the following variables for ascertaining the determinants of firm dividend policy.

Dividend policy: We consider four different measures of dividend policy. *Dividend paid* is a dummy variable that equals one when a company pays dividend in year t and zero, otherwise. The *dividend-to-cash flow* ratio is defined as total dividends paid in year t to cash flow in year $t-1$. La Porta *et al.* (2000) argue that dividend-to-cash flow ratio has the economically meaningful interpretation because it the ratio of cash distributed to cash generated in a period. We also use the *dividend-to-earnings* ratio, defined as total dividends paid in year t over net income in year $t-1$, and the *dividend-to-total-asset* ratio, defined as dividends paid in year t over total assets in year $t-1$. For each of these dependent variables, we look strictly at total dividends paid in year t , since information on stock repurchases is not readily available.

Independent variables: The core set of independent variables include size, profits, leverage, age, tangible assets and sales growth.

Size is a control variable that measures the firm size, defined as the log of total assts. On the one hand, large firms face relatively lower costs of raising finance, presumably owing to scale economies. At the same time, larger firms are likely to have more dispersed ownership structure and in that sense face

higher potential for agency problems. The lower transaction costs and the higher potential for agency problems, imply a positive correlation between firm's size and the dividend payments. On the other hand, large firms also tend to have highly traded stock and are thus likely to be subject to continuous market monitoring. In addition, such firms tend to have easier access to the alternative agency cost control mechanism, namely debt. There is therefore less need for managers of large firms to induce monitoring through the payment of dividends. This implies a negative correlation between firm size and dividend payments.

Profits are defined as earnings before interest and taxes in year $t-1$, divided by total assets in year t . Profitability is expected to relate positively to dividends, as higher earnings lead to more internal funds and therefore, provide more room for dividends, *ceteris paribus*.

Leverage is defined as total borrowings over total assets, both variables pertaining to period $t-1$. Jensen and Meckling (1976), Jensen (1986) and Stulz (1988) argue that financial leverage has an important role in monitoring managers, thereby reducing agency costs arising from the shareholder-manager conflict. A negative relation is therefore to be expected.

Age is defined as number of years since the incorporation of the firm. Mature firms are expected to be informationally less opaque and therefore, rely less on internal funds for funding asset growth. Besides, age is also a proxy for firm reputation. If reputed firms pay higher dividends, this would entail a positive sign on the dependent variable.

Asset tangibility is measured as the ratio of plant, property and equipment to total assets, both in year $t-1$. Higher amount of tangible assets imply less informational opacity and therefore, it seems likely that such firms are more reputed. If that is the case, firms with higher tangible assets are more likely to pay higher dividends.

Sales growth, which is a proxy for growth opportunities, is expected to relate negatively to dividends, as companies with good growth opportunities retain their earnings to finance their growth.

Besides, we include dummies for firm ownership. Based on *Prowess* categorization, we classify a firm as *public* if the majority equity is with the government; *group* if the firm belongs to a business group, *Indian private* and *foreign private*, depending on whether the firm is majority-owned by Indian or foreign private interests.

Table 2 provides the summary statistics of the relevant variables. Public companies (63.6%) are more likely to pay dividends as compared to other companies. Compared to public companies, Indian private companies appear to have lower dividend-to-cash flow ratio (0.02 vs. 0.01), although these numbers are higher for foreign and group companies. Most of these differences are statistically significant at the 0.01 level.

Table 2: Summary statistics

Variable	Dividend paid	Dividend/Cash flow	Dividend/Earnings	Dividend/Asset	Size	Profits	Leverage	Age	Tangible asset	Sales growth
All	0.448	0.022	0.002	0.002	5.589	0.044	0.356	3.129	0.516	0.134

Public	0.636	0.020	0.001	0.0008	7.781	0.024	0.308	3.688	0.600	0.094
Indian private	0.246	0.014	0.001	0.0010	4.731	0.049	0.381	2.750	0.457	0.198
Foreign	0.553	0.026	0.004	0.0003	5.767	0.083	0.151	3.478	0.432	0.117
Group	0.562	0.026	0.003	0.002	5.959	0.039	0.365	3.313	0.556	0.102
<i>t-test of difference</i>										
Public vs. Indian pvt.	11.682***	1.137	-1.079	-0.864	28.656***	-3.736***	-4.471***	28.695***	5.238***	-5.887***
Public vs. foreign	2.071**	-0.934	-11.295***	-6.481***	16.982***	-7.729***	9.088***	4.991***	5.648***	-1.242
Public vs. group	2.219**	-1.104	-6.565***	-4.403***	17.271***	-2.234**	-3.698***	11.845***	1.631*	-0.502
Indian pvt. vs. foreign	12.434***	-2.401***	-5.809***	-0.688	-16.636***	-7.221***	24.334***	-22.255***	1.699*	5.867***
Indian pvt. vs. group	29.401***	-6.171***	-7.809***	-5.374***	-39.417***	4.055***	2.441***	-33.249***	-12.104***	-9.812***
Foreign vs. group	0.367	-0.177	-2.543***	-4.533***	3.137***	-9.729***	25.294***	-5.206***	8.592***	-1.273

III.3 Empirical strategy

We control for these factors in a multivariate regression framework. More specifically, in order to assess the impact of firm characteristics on dividends, while controlling for industry characteristics and the macroeconomic environment, we estimate regressions of the following form:

$$Dividend_{s,t} = \varphi_0 + \varphi_1 F_{s,t} + \varphi_2 OD_t + \varphi_3 ID_t + \varepsilon_{s,t} \quad (1)$$

where s indexes firm and t denotes year; φ s' are the parameters to be estimated.

In (1), the dependent variable (*Dividend*) is assumed to be a function of firm-specific controls (F), ownership dummies (OD) and industry dummies (ID). All equations control for the business year by including year fixed effects. Furthermore, it may be inappropriate to assume independence of firm-level observations over time. Consequently, standard errors are adjusted for firm-level clustering.

IV. Results and discussion

We use the Probit regression model to investigate the factors correlated with the probability that a company pays dividend. The fixed effects model is used to examine the factors that determine the dividend-cash flow ratio. Finally, the Tobit model, which takes into account the fact that the dependent variables is censored (Greene, 2000) is used to investigate the factors correlated with dividend payout.

The results indicate that *size* and *age* are positive in our dividend measures, consistent with the expectations that bigger and mature companies pay more dividends. As expected, the probability of dividends is significantly and negatively related to leverage in all regressions. More leveraged companies need cash to pay higher interest and the possibility that creditors limit the dividend company is allowed to pay in order to restrict their risk (Brockman and Unlu, 2009). Profitability is expected to relate positively to dividends, consistent with the argument that higher earnings lead to more internal funds and therefore, provide greater leeway for dividends. Wherever significant, sales growth exhibits a negative sign, which supports the fact that companies with higher good prospects retain their earnings to finance growth.

Table 3: Determinants of dividend policy

Variable	(1)	(2)	(3)	(4)
Estimation method	Probit	Fixed effects	Tobit	Tobit
Dependent variable	Dividend paid	Dividend/ Cash flow	Dividend/ Asset	Dividend/ Net income
Constant	-3.998 (0.443)***	-0.014 (0.019)	-0.064 (0.007)***	-0.093 (0.008)***
Size	0.420 (0.037)***	0.003 (0.001)***	0.003 (0.0004)***	0.006 (0.0005)***
Age	0.391 (0.059)***	0.009 (0.003)***	0.005 (0.0009)***	0.007 (0.001)***
Profit	0.254 (0.336)	0.024 (0.011)**	0.051 (0.007)***	0.025 (0.009)***
Leverage	-1.657 (0.209)***	-0.027 (0.007)***	-0.053 (0.004)***	-0.066 (0.007)***
Tangible asset	-0.062 (0.127)	-0.029 (0.005)***	-0.015 (0.002)***	-0.017 (0.003)***
Sales growth	-0.059 (0.055)	-0.005 (0.002)**	-0.003 (0.001)*	0.001 (0.002)
Dy_Group	0.890 (0.263)***	0.014 (0.012)	0.018 (0.004)***	0.025 (0.005)***
Dy_Indian pvt.	0.651 (0.279)**	0.009 (0.013)	0.014 (0.004)***	0.019 (0.005)***
Dy_Foreign	0.379 (0.293)	0.004 (0.013)	0.016 (0.004)***	0.021 (0.004)***
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Pseudo R-squared	0.219	0.052		
Chi-squared			662.08***	395.19***
Period	1999-2008	1999-2008	1999-2008	1999-2008
Clustering level	Firm	Firm	Firm	Firm
Firms, N.Obs	801; 6985	795; 6687	801; 6985	801; 6985

Standard errors within brackets

***, ** and * denote statistical significance at 1, 5 and 10%, respectively

Looking at the ownership dummies, the evidence indicates that group and Indian private companies are more likely to pay dividends (regression 1), whereas all these companies (group, Indian private and foreign) pay much higher dividends than public ones (regressions 3 and 4).

Next, we examine how dividend policy varies across firm ownership. *Cut* is a dummy variable that equals one if dividend in year t is lower than in year $t-1$; *increase* is a dummy variable that equals one when dividend in year t is higher than in year $t-1$; *initiation* is a dummy variable that equals one when the company pays dividend in year t , but not in year $t-1$; *omission* is a dummy variable that equals one if the company did not pay any dividend in year t , but did so in year $t-1$; *continuation (positive)* is a dummy if the firm paid the same (positive) dividend both in year t and $t-1$ and finally, *continuation (zero)* is a dummy if the firm paid zero dividend both in year t and $t-1$.

Table 4: Dividend policy – across firm ownership

	Cut	Increase	Initiation	Omission	Continuation (positive)	Continuation (zero)
Public	0.277	0.345	0.050	0.950	0.377	0.309
Indian private	0.109	0.154	0.067	0.933	0.736	0.711
Foreign	0.262	0.329	0.066	0.933	0.409	0.369
Group	0.275	0.306	0.066	0.934	0.419	0.369
<i>t-test of difference</i>						
Public vs. Indian pvt.	5.443***	5.825***	-1.103	1.103	-10.638***	-14.432***

Public vs. foreign	0.409	0.425	-0.849	0.886	-0.787	-1.545
Public vs. group	0.075	1.194	-1.041	1.048	-1.243	-1.873*
Indian pvt. vs. foreign	7.086***	-7.758***	-0.079	0.024	-13.326***	-14.106***
Indian pvt. vs. group	18.894***	15.977***	-0.205	0.188	-29.143***	-31.193***
Foreign vs. group	0.582	-0.979	-0.016	0.065	0.415	0.012

Table 4 reports the dividend changes during the period considered. The results indicate significant differences in dividend policies across firm ownership. Consider, by way of example, the issue of continuation of dividends (*continuation - positive*). On average, 38 percent of public companies paid the same dividend in two consecutive years. The corresponding numbers for Indian private companies was nearly 74 percent. The difference between these two groups was statistically significant. In other words, the dividend policy of Indian private firms seems to be less flexible than other companies: in any year, group Indian private firms are more likely to have the same dividend policy as in previous year.

We take this argument further and explore what firm-factors influence the dividend policy. Table 5 reports the relevant results.

Bigger, less profitable and high-leveraged firms are more likely to initiate a dividend cut (see Col. 1). Combined with our previous findings, this suggests that although bigger firms might pay higher dividends, they are also more likely to cut dividends, pointing to the flexibility in their dividend policy. The results also suggest the existence of asymmetry in dividend policy: if GDP growth declines below its own average growth rate, there is more likely to be a dividend cut ($\alpha - \delta$ positive and significant), whereas the reverse is not true ($\alpha - \delta$ is not significant).

Table 5: Determinants of dividend policy

	(1)	(2)	(3)	(4)	(5)
Dependent variable	Cut	Increase	Initiation	Continuation (positive)	Continuation (zero)
Estimation method	Probit	Probit	Probit	Probit	Probit
Constant	-2.01 (0.249)***	-2.541 (0.222)***	-1.695 (0.238)***	3.079 (0.354)***	3.004 (0.406)***
Size	0.187 (0.020)***	0.226 (0.019)***	-0.005 (0.019)	-0.413 (0.034)***	-0.423 (0.039)***
Profit	-1.069 (0.266)***	1.127 (0.282)***	0.379 (0.280)	-0.119 (0.314)	0.069 (0.340)
Leverage	-0.682 (0.124)***	-1.091 (0.144)***	-0.374 (0.137)***	1.573 (0.210)***	1.583 (0.222)***
Age	0.254 (0.038)***	0.159 (0.036)***	-0.072 (0.040)*	-0.384 (0.054)***	-0.429 (0.062)***
Tangible asset	-0.169 (0.072)***	0.033 (0.074)	0.073 (0.079)	0.111 (0.104)	0.118 (0.116)
Sales growth	-0.253 (0.056)***	0.053 (0.054)	0.255 (0.074)***	0.176 (0.055)***	0.158 (0.059)***
Dy_Group	0.521 (0.159)***	0.436 (0.152)***	0.149 (0.144)	-0.949 (0.237)***	-0.941 (0.279)***
Dy_Indian pvt.	0.323 (0.174)*	0.303 (0.163)*	0.221 (0.154)	-0.736 (0.252)***	-0.675 (0.295)***
Dy_Foreign	0.307 (0.177)*	0.205 (0.178)	0.118 (0.176)	-0.534 (0.269)**	-0.464 (0.311)
GDPGR (α)	-8.693 (0.921)***	2.508 (0.896)***	4.443 (1.174)***	6.351 (1.126)***	7.054 (1.182)***
GDPGR less avg. GDPGR (δ)	0.359 (1.814)	-5.600 (1.733)***	1.254 (2.419)	5.155 (1.667)***	6.754 (1.687)***
<i>Test asymmetric impact</i>					
$\alpha + \delta = 0$; $\alpha - \delta = 0$ (p-Values)	0.16; 0.00	0.13; 0.00	0.04; 0.21	0.00; 0.41	0.19; 0.82
Industry dummies	Yes	Yes	Yes	Yes	Yes

Pseudo R-squared	0.086	0.102	0.023	0.214	0.230
Period	1999-2008	1999-2008	1999-2008	1999-2008	1999-2008
Clustering level	Firm	Firm	Firm	Firm	Firm
Firms, N.Obs	801; 6985	801; 6985	801; 6985	801; 6985	801; 6985

Standard errors within brackets

***, ** and * denote statistical significance at 1, 5 and 10%, respectively

Similar results are echoed across the other categories of dividend policy, as well. For instance, *size* and *age* bear positive sign under “*Increase*”, suggesting that big and mature firms display greater flexibility in their dividend policy. Across all cases, the coefficient on *leverage* is negative, which would mean that firms with higher debt burden are the ones with the least flexibility in their dividend policy. As well, firms with growth opportunities are more likely to cut dividends as also likely to increase or even initiate dividend payments. More importantly, the possibility of initiating or paying equal dividends in two consecutive years is more likely to happen in an upturn [$\alpha+\delta$ positive and significant under both Cols. (3) and (4)] of the economic cycle, although the reverse is much less compelling.

5. Concluding remarks

In this paper, we study the dividend policy of a sample of Indian firms, spanning across ownership categories for the period 1999-2008. Our results suggest that bigger and established firms tend to pay more dividends. On the other hand, dividends are significantly and negatively related to leverage, attesting to the fact that high debt is an important constraining factor for firms in paying dividends. Across ownership, the evidence indicates that public companies typically pay the lowest dividends. This seems consistent with the conjecture that public companies typically have various social responsibilities, which could be an important factor influencing their dividend payment decisions. In sum, our results appear to indicate that dividend policy of firms is not irrelevant as argued by Modigliani and Miller (1961), but rather a response to firm-level factors and business cycle considerations.

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