

Dividend policy and financial incentive of top managers: case in Japan

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Dividend policy and financial incentive of top managers: case in Japan

This paper analyzes the relation between firm's dividend policies and financial incentive of directors. Prior researches have suggested that firms pay dividend when agency problem is mitigated. Instead we conjecture that firms with larger managerial ownership pay more dividends even when it is not appropriate to reduce firms' cash to compensate them. Using sample of 1818 firms during 1990 – 1996, we find that firm with larger managerial ownership are more likely to pay dividend, more likely to increase and less likely to decrease dividends. This result still holds for firms in which it is not appropriate to payout cash. We observe this relationship for firms whose profit is negative and whose Tobin's q is larger than one. Our results imply that managers are paying cash as a way to compensate themselves.

1 . Introduction

There have been a lot of papers on financial incentive of top directors. Many of these papers focus on whether they have financial incentive to maximize shareholders' value. In addition, there are several studies that examine the effect of executive compensation scheme on firm performance. However, there have been relatively fewer studies on how financial incentive affects firms' decisions. In this paper, we focus on the effect of managerial ownership on firms' dividend policy.

Conflict of interest between shareholders and managers have attracted large amount of researches on corporate finance. Shareholders want managers to maximize shareholders' value while managers want to pursue their own interest. Managers want to spend their money into project which is not profitable. For example, they may purchase corporate jet at the expense of shareholders. This agency problem arises when shareholders cannot monitor the behavior of managers. To mitigate this problem, various corporate governance devices, such as outside director, are introduced. One of the most important devices is to align financial incentive of directors with those of shareholders¹. If directors' compensation is determined by performance, top managers may want to maximize shareholders value. There are several mechanisms through which managers' financial incentives can be generated. These are cash compensation, annual bonus and managerial ownership. For example, if managers owns large amount of share, they may want maximize shareholders' value to increase the value of their personal wealth. Previous studies show that managerial ownership plays an important part in generating incentive for managers (Hall and Liebman, 1998, Kubo and Saito, forthcoming). According to above argument, which we call 'incentive alignment hypothesis', agency problem is mitigated by strengthening the tie between executive compensation and performance.

However, as suggested by Morck *et al.* (1988), larger managerial ownership may aggravate the agency problem because managers with large shares are so powerful that

¹ Murphy (1999) provide extensive survey on executive pay. For empirical studies on executive compensation in Japan, see Kaplan (1994), Kato (1997), Abe *et al.*, (2005), Kato and Kubo(2006), Kubo and Saito, forthcoming.

they do not have to consider other small shareholders' interest. As current manager hold a large shareholder, it is very difficult for outside shareholders to dismiss them even when top managers do not maximize shareholders' value. At the same time, top managers are already well-off that they may want to pursue their own goal, such as building an empire, rather than maximizing profit. Then according to this view which we call 'entrenchment hypothesis', top managers may not take into consideration other shareholders' interest when they own larger fraction of the firm.

Dividend policy has been attracted considerable attention by financial economist². One of the main attentions is how agency problem affects firm's dividend policy. The free cash flow hypothesis, which emphasizes the importance of disciplining the manager, has been used to explain firms' dividend policy (Grossman and Hart, 1980, Easterbrook, 1984, Jensen 1986). According to the free cash flow hypothesis, firms pay dividends to reduce free cash flow so that top managers cannot squander resources. By minimizing the free cash through dividend, there is little scope for managers to invest negative NPV project. According to La Porta *et al.*, (2000) which empirically investigate the effect of minority shareholder provision on dividend around the world, dividend is tend to be larger in country where the interest of minority shareholders are protected. Their result is consistent with the idea that dividend is larger when agency problem is mitigated.

This hypothesis implicitly assumes that shareholders want cash to be paid out as dividend while managers want to keep those within the firm so that they can invest those to negative NPV project. According to incentive alignment hypothesis, combined with this assumption, positive correlation between dividend and managerial ownership shows that agency problem is mitigated, because shareholders want larger dividend and managers' interest is aligned with that of shareholders through ownership. Previous empirical studies on the relationship between dividend and corporate governance follow this view (White, 1996, Fenn and Liang, 2001). Fenn and Liang (2001) show positive correlation between managerial ownership and dividend. They interpret that payout is larger because managerial incentive is linked to shareholders through large inside ownership.

As shown above, according to incentive alignment view positive correlations between

² Allen and Michaerly (2003) provide extensive survey on researches on firm's payout policy. For empirical studies on dividend policy in Japan, see Kato and Lowenstein (1995), Dewenter and Warther (1998), Kato and Tsay (2002).

managerial ownership and dividend are considered to indicate that agency problem is not serious. We challenge this view by arguing that correlation between dividend and managerial ownership is positive when agency problem is serious. In particular we show that managers, who have large amount of the firm they manage, want to pay dividend to increase their personal income even when it is not appropriate to pay out cash. Receiving large amount of cash through dividend may be desirable than using them to unprofitable project. Then, our main hypothesis is that managers with large ownership are more likely to pay out dividend even when it is not appropriate do so. Our hypothesis is consistent with entrenchment hypothesis that large shareholding by managers may complicate agency problem. In other words, payout is larger when agency problem is severe. This argument is more important if top executive receive smaller amount of cash compensation because income through dividend constitutes larger proportion of their total income.

It should be noted that it may not be easy to distinguish our hypothesis from the argument by incentive alignment hypothesis because both hypotheses predict positive relationship between managerial ownership and dividend, though the interpretation is different. To distinguish these two arguments, we investigate the effect of managerial ownership on dividend policy when it may not appropriate for firm to pay dividend. We focus on firms whose profit is negative and which have a lot of investment opportunity, measured by Tobin's q . As the firm has less cash and has more investment opportunity, it may not be appropriate to pay dividend from the viewpoint of shareholders. Managers with larger fraction of shares may *decrease* dividend because their interest is aligned with those of other shareholders. In contrast, our hypothesis predicts positive relationship because top managers give preference to paying cash for themselves.

We estimate the determinants of firms' payout policy using firm data in Japan. Japan is an ideal country to examine our hypothesis because on average, presidents of large Japanese firms receive relatively smaller amount of compensation than their counterpart in the U.S.³ If they can receive large amount of money through direct pay, such as cash compensation or stock option grant, they do not have to receive money through dividend. However, they receive less compensation and their compensation is largely fixed. Income from dividend can constitute large proportion of their income for some

³ Kubo and Saito (forthcoming) show that the pay-performance sensitivity is lower in Japan and that it is getting lower since late 1977.

directors. Then, top managers may have incentives to transfer cash to them through dividend. Using a panel of 1818 listed firms during the period 1990 -1996, we examine the determinants of firms' dividend policy, trying to distinguish our hypothesis from incentive alignment hypothesis.

Our results can be summarized as follows. The firms with large managerial ownership are more likely to dividend, to increase it. They are less likely to cut dividend. These results show that dividend policy is affected by financial incentive of presidents. In addition, we focus on firms whose profit is negative and which have rich investment opportunity set. As it may not be appropriate to pay dividend in these firms from the viewpoint of managers, dividend is smaller if managers' interest is tied to that of other shareholders. Instead, our hypothesis predicts positive correlation between inside ownership and dividend even in this situation, as higher dividend leads to higher income for presidents. The results confirm our hypothesis. In other words, it is suggested that some presidents use dividend to pay themselves.

Our study contributes to the literature along the following dimensions. First, we show that managerial entrenchment can affect firms' behavior. Previous studies focus on the effect of entrenchment on performance. Second, we show that increasing dividend may not good news for investors. Previous studies suggest that paying dividend is good for the shareholder because firms pay dividend to reduce free cash flow and mitigate overinvestment problem.

The rest of the paper is organized as follows. In next section, we describe the sample and variables, and provide descriptive statistics. Section 3 and 4 provides our main empirical results and section 5 concludes.

2 Data

Our sample comprises of a panel of 1818 listed firms during the period 1990 -1996. We exclude financial institutions and public utility firms. Shares held by presidents and by other directors are collected from *Yuka Shoken Hokokusyo*. Financial data is obtained from Development Bank of Japan database. Stock price is obtained from *Kabuka-CD-ROM* by *Toyokeizai Shinposya*. All variables have been adjusted to 2000 constant yen by using the consumer price index.

Selected descriptive of the sample firms are presented in Table 1. Dividend include both mid-term and year-end dividend. Dividends / Earnings is calculated by dividing dividend by net profit. The median dividends / earnings was 32.1% whereas the mean was 54.3%. Negative dividends /earnings shows that some firms pay dividends when their net profit is negative. 507 firms out of 12606 pay dividends while their net profit is negative. The Median presidents' shareholding was 0.07%, showing that most presidents owns very small portion of the firm. Variable "President Receiving Dividend" shows the amount president receives as dividend from their shares. Variable "Presidents Receiving Bonus" shows the amount of bonus they receive⁴. Information on the total directors' base pay and their bonuses is obtained from the *Nikkei NEEDS* database. To calculate the amount of bonus president receive, we collect information on pay gaps among directors of various ranks and information on the composition of the board. Information on the pay gaps between directors in each rank is obtained from *Seikei Kenkyusyo*, which publishes average salary differences between different ranks within the board. The board's composition is obtained from *Yakuin Shikiho* (Directory of Executives). On average, presidents receive 5.5 million yen as dividend from their stock holding whereas mean value is 220 thousand. These figures show that most presidents receive relatively small amount of dividends. At the same time, some presidents receive large amount from their stockholding. The 90 percentile value is 10.13 million yen and the maximum value is 1.529 billion yen. Considering that the amount of bonus they receive is median 4.74 million yen and that mean is 5.28 million yen, income from dividend is larger than bonus for more than 10 % of the presidents. ROA is the rate of profits before interest payment and corporate tax divided by total assets. Tobin's q is defined as the current market value of a firm's assets (the market

⁴ One of the difficulties in studying executive compensation in Japan is that listed firms are not required to disclose the salaries of individual directors. Rather, they disclose the total amount of base pay and bonuses for directors as a whole. In this study, we calculate presidents' bonuses instead of directors' average bonuses. To calculate the president's bonus we use information on the pay-gap ratio between the directors in each rank, i.e., the proportion of vice-presidents' bonus as compared with the presidents' bonus. We assume that this pay gap is constant across time and firms. Therefore, once we obtain information on the pay-gap ratio and board composition, i.e., from the number of vice-presidents and senior directors, we can calculate the president's bonus by dividing the total amount of board bonus by the number of directors, weighted by their rank.

value of its equity plus debt) divided by the replacement cost of its assets. The variable “Liquid Assets / Assets” is defined as dividing cash plus securities divided by current asset. The “Largest Shareholder is Insurance Firm” is a dummy variable which take a value of 1 if the largest shareholder is insurance firm.

3. Results 1: The determinants of dividend policy (Whole sample)

In this paper, we estimate following equation.

$$\Pr(\text{Div}_{-}\text{Policy}) = f(\text{Inside}_{-}\text{Ownership}, Z)$$

As a dependent variable we use several variables; 1) dummy variables that shows whether the firm pays dividend or not, 2) the amount of dividend, 3) multiple choice from dividend increase, no change, decrease or not pay (among firms that pay dividend previous year), and 4) dummy variable that shows whether the firm start dividend or not (among firms that did not pay dividend previous year). We use Logit analysis to analyze for variable that takes 0-1 value. Multinomial Logit model is employed for multiple choices model. We use Tobit model to examine the amount of dividend.

Independent variables include inside ownership and Z, which represents other variables. As an inside ownership, we use both presidents’ shareholdings ratio and ratio of share owned by all the directors. It is predicted that the coefficients for managers shareholdings be positive. Both incentive alignment hypothesis and our hypothesis argue that firms pay dividend when managers have large fraction of firm’s share. We will distinguish these two alternative hypotheses in the next section. Other variables include ROA, log of total asset, leverage, liquidity ratio (liquid assets / assets), variation of profit over 5 years, dummy variable that shows whether the firm is a subsidiary of other firm, ““Largest Shareholder is Insurance Firm” dummy, firm age, year dummy and industry dummy. We predict that the coefficient for ROA to be positive as it shows firms ability to pay. The coefficient for leverage is predicted to be negative as the firm needs cash to pay back debt and interest. Managers in firms with higher risk are more inclined to hoard cash in case bad situation come along. Therefore, the coefficient for the variation of profit is considered to be negative. The coefficient for firm age is predicted to be negative as younger firms tend to have more investment opportunities.

“Maximum dividend /Asset” is the amount of surplus available for dividend. Variable “Affiliated firm” shows whether the firm is a subsidiary of other firms or not. It is a dummy variable which is assigned the value of 1 if the largest shareholder is a business corporation and ownership is larger than 50%. Similarly, related Firm 1, 2 are dummy variables which take the value of 1 when largest shareholders are operating firm and their ownerships are 15–33% (related firm 1) or 33–50% (related firm 2)⁵.

We estimate above regression using whole sample in this section. In the next section, we divide samples into several groups. Table 2 shows the results of Logit regression. The dependent variable is a dummy variable that shows whether the firm pays dividend or not. Most striking results are that the coefficients for “log of president ownership” and “log of all director ownership” are both positive and significant as predicted. In other words, dividends are more likely to be paid in a firm which is owned by their top managers. The coefficient for ROA, leverage and size (log of assets) are as expected and significant. The coefficients for “largest shareholder is insurance firm” dummy, firm age, related firm dummies and affiliated firm dummy are not significant. Table 3 shows results for Tobit models in which dependent variable is the amount of dividend. As the dependent variable includes many 0s, we use Tobit model. The coefficient for ‘log of president ownership’ in column 2 is not significant. However, the coefficient for ‘log of all director ownership’ is positive and significant, showing that the firms in a firm where directors own large proportion of shares are more likely to pay dividends.

Tables 4 and 5 show the regressions that examine the determinants of firms dividend policy change using Multinomial Logit Model. We divide samples into two groups, the firms that pay dividend previous year and those which did not. This division is made because these firms face different choices. In table 4, three categories of dividend policy changes are identified: increase, decrease and cut (not pay). It is identified as increase if the firm increase dividend per share⁶. Our hypothesis predicts that the firms are inclined to pay dividend if the manager owns larger proportion of shares. The coefficients for ‘log of president ownership’ and ‘log of all director ownership’ are positive and significant as expected for ‘increase’ decision. Similarly they are negative and significant for ‘omit’ decision. In other words, firms with larger managerial ownership

⁵ Firms whose largest shareholder is not an operating corporation, such as founder, are excluded.

⁶ The amount of dividend is divided by the number of shares in previous year for a firm that split shares.

are more likely to increase dividend and less likely to omit it. The coefficients for leverage, variation of profit, asset, firm age are significant while those for “largest shareholder is insurance firm” dummy and subsidiary dummy are not significant.

In Table 6, we report the results of Logit analysis using samples of firms that did not pay dividend previous year. The dependent variable is a dummy variable indicating whether the firm starts paying dividend or not. Independent variables are same as in table 5. Again, the coefficients for president ownership and director ownership imply that there is a positive relationship between managerial ownership and dividend. In other words, the firms with larger managerial ownership are more likely to start paying dividends.

4 . Results-2 the determinants of dividend policy (limited sample)

Results in previous section show positive and significant relationship between managerial ownership and dividend, which is consistent with previous studies. However, there are two interpretations for this positive correlation because both incentive alignment hypothesis and our hypothesis predict same results. To distinguish these two, we focus firms in which it is not appropriate to pay dividend. According to incentive alignment hypothesis, the coefficient for managerial ownership on dividend would be negative because it is not appropriate to pay dividend. As agency problem is mitigated by large managerial ownership, they consider the interest of shareholders and pay fewer dividends. In contrast, according to our hypothesis, the coefficient for managerial ownership is positive. As managers are so powerful that they may not be dismissed even though they do not take into account the interest of shareholders. Therefore, they pay more dividends to increase their personal wealth.

In this section, we divide samples into several groups. Firstly, we divide samples into two groups: firms with positive profit and those with negative one. In addition, we estimate these regressions using firms whose profit is negative and whose Tobin’s q is larger than one as a sample. Tobin’s q is used as a proxy for firm’s investment opportunity. Therefore, these firms are considered to be less likely to pay dividend. Table 6, 7 shows the results of Logit analysis and Tables 8, 9 reports the results of Tobit

analysis.

In table 6 reports results of Logit analysis for firms with positive profit and those with negative one. In negative profit sample, the coefficients for managerial ownership are positive and significant. It may be the case that they are not supposed to pay dividend when negative profit. The positive coefficients show that firms with larger managerial ownership, are inclined to pay dividend even if profit is negative. One interpretation is that managers with larger ownership pay dividend because they can obtain large amount of money through dividend. In other words, managers are paying dividend when it is not appropriate for them to do so. Smaller stockholders may want re-invest these cash, instead of gorging them. Another interpretation is that the firms have excess cash and have no investment opportunity. If this is the case, other shareholders may want firms to pay dividend. To distinguish these two different arguments, we focus on firms with negative profit and whose Tobin's q is larger than 1. It is considered to be not appropriate for these firms to pay dividend because these firms have less cash and rich investment opportunity set. Instead, from the view point of other shareholders, it is appropriate to re-invest those cash. In contrast, managers may want to dividend because they can obtain large amount of cash. As is often the case in Japan, managers want cash because their salaries are much lower than their counterparts in the US.

Table 7 shows the results. Most striking feature in this table is that the coefficients for managerial ownerships are positive and significant. In other words, firms with larger managerial ownership are more likely to pay dividends even when it is not appropriate to do so. In particular, the coefficients for 'log of president ownership' and 'log of all director ownership' are larger in table 7 than in table 6.

Table 8, 9 shows the results of similar regressions using Tobit model. Dependent variable is the amount of dividends. As the dependent variable include many '0' observations, we use Tobit models. In table 8, again, sample is divided into positive profit group and negative profit group. Important result here is that the coefficients for managerial ownerships are positive only in a negative profit sample. This result is consistent with our hypothesis that managers are paying dividend to compensate them. Table 9 reports the results for firms with negative profit and rich investment opportunity. The coefficient for 'all director ownership' is positive and significant, although that for 'president ownership' is not.

5 . Conclusion

This paper analyzes the relation between firm's dividend policies and financial incentive of directors. Prior researches have suggested that firms pay dividend because agency problem is mitigated. Instead we conjecture that firms with larger managerial ownership pay more dividends even when it is not appropriate to reduce firms' cash.

Using sample of 1818 firms during 1990 – 1996, we find that firm with larger managerial ownership are more likely to pay dividend, more likely to increase and less likely to decrease dividends in firms in which it is not appropriate to payout cash. Our results imply that managers are paying cash because they want to increase their personal wealth.

Dividend may not be the best way for managers to compensate themselves considering tax. However, in Japan, presidents receive far smaller amount of compensation compared with the US (Kubo and Saito, forthcoming). It is very difficult to increase the amount of direct compensation. Under Japanese company law, directors' compensation is approved by shareholders at their annual general meeting⁷. As dividend is the only way for managers to pay out large amount of cash even there is a tax disadvantage of dividends relative to direct compensation⁸.

⁷ Amendments to the company law in 2003 enabled large companies to choose US type corporate governance systems with nomination committees, compensation committees and audit committees. If a company chooses this US type committee system, the board of directors can delegate substantial management authority to executive officers.

⁸ For the relationship between dividend and tax policy, see Black (1976) and Peterson *et al.*, (1985).

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Table 1. Descriptive Statistics

Sample All Firm: 1990 - 1996

Variable	Mean	Standard deviation	Percentile						
			Minimum	10th	25th	50th	75th	90th	Maximum
1.Dividends Data									
Dividends (1,000yen)	1063205	3454646	0	0	91702.21	265567.9	754274.3	2185879	82000000
Dividends / Earnings (%)	54.30	245.73	-3675	0	15.30	32.07	60.28	92.96	14000
Dividends / Sales (%)	0.75	0.72	0	0	0.28	0.61	1.02	1.52	7.305393
Dividends / Capital (%)	1.59	1.06	0	0	0.82	1.57	2.12	2.81	12.70374
2.Management Data									
President Ownership (%)	1.37	3.61	0	0.01	0.02	0.07	0.81	4.12	77.45
Chairman & President Ownership (%)	2.07	4.48	0	0.01	0.04	0.16	1.99	6.18	77.45
All Directors Ownership (%)	3.50	6.08	0	0.11	0.22	0.75	4.19	10.73	77.88
President Receiving Dividends (1,000yen)	5509.36	33383.20	0	0	55.12	224.66	1755.01	10133.55	1529374
Chairman & President Receiving Dividends (1,000yen)	10042.04	52331.13	0	0	84.63	511.67	4723.96	18695.53	1529374
All Directors Receiving Dividends (1,000yen)	16257.62	64072.18	0	0	531.31	2458.32	9620.35	30796.72	1529472
President Receiving Bonus (1,000yen)	5278.58	5051.21	0	0	0	4737.14	8090.81	11677.56	56021.67
All Directors Receiving Bonus (1,000yen)	36755.21	44939.43	0	0	0	26293.7	53184.3	86555.02	573229.1
3.Financial Data									
Cash Flow / Assets (%)	3.43	4.34	-91.95	0.40	1.83	3.38	5.08	7.04	158.90
Earnings / Assets (%)	1.18	3.54	-82.23	-0.78	0.44	1.18	2.33	3.80	76.93
Earnings before Taxes and Interest / Assets (%)	4.67	3.59	-17.66	1.30	2.82	4.34	6.34	8.76	43.28
Extraordinary Gain / Assets (%)	-0.18	3.01	-117.94	-0.86	-0.35	-0.08	0.01	0.40	59.46
Tobin's Q	1.04	0.50	0.22	0.61	0.75	0.92	1.18	1.57	7.13
Volatility of Earnings before Taxes and Interest / Assets	1.69	1.39	0.03	0.48	0.78	1.30	2.15	3.33	14.08
Beta	0.94	0.38	-0.61	0.42	0.69	0.96	1.21	1.42	2.39
Assets (1,000,000yen)	211000	637000	1833	13700	27200	59700	154000	420000	16700000
Sales	203000	930000	787	9796	20300	49600	127000	321000	18900000
Sales Growth over three years (%)	1.03	2.36	-4.49	-2.51	-1.61	2.01	2.81	3.43	9.58
Leverage (%)	24.33	16.35	0	3.32	11.96	22.81	34.71	46.05	246.76
(Liquid Assets - Earnings) / Assets (%)	15.62	10.60	0.02	4.76	8.00	13.04	20.84	29.99	77.35
Maximum Dividends / Assets (%)	14.88	14.39	-321.99	2.20	6.62	13.30	21.58	31.82	96.92
(Maximum Dividends - Earnings) / Assets (%)	13.79	12.91	-323.17	2.22	6.04	12.02	19.72	29.32	90.79
Largest Shareholder Ownership (%)	16.63	15.77	0.73	4.53	5	8.33	24.71	44.304	72.03
Largest Shareholder is Insurance Firm (Dummy)	0.17	0.38	0	0	0	0	0	1	1
Firm Age from Foundation	65.82	38.18	1	36	45	59	77	98	535

Table 2. Determinants of Dividend Payout– Logit Model

Sample = All Firm 1990 - 1996

Dependent Variable 1 = Pay Dividend / 0= Not Pay

	Dependent Variable: Dividend Dummy	
	(1)	(2)
Intercept	-12.649 *** (1.572)	-13.703 *** (1.628)
Log of President Ownership	0.255 *** (0.043)	
Log of All Directors Ownership		0.400 *** (0.057)
ROA (%)	0.654 *** (0.038)	0.645 *** (0.038)
Log of Assets	0.655 *** (0.076)	0.696 *** (0.076)
Leverage (%)	-0.041 *** (0.007)	-0.041 *** (0.007)
Tobin's <i>q</i>	0.525 ** (0.229)	0.533 ** (0.235)
Maximum Dividend / Assets (%)	0.196 *** (0.017)	0.187 *** (0.016)
Volatility of Operating Income / Assets over 5 years t-1	-0.361 *** (0.055)	-0.373 *** (0.054)
Log of Firm Age from Foundation	0.181 (0.183)	0.169 (0.183)
Largest Shareholder is Insurance Firm	-0.143 (0.191)	-0.096 (0.189)
Related Firm 1	0.278 (0.183)	0.352 * (0.182)
Related Firm 2	0.339 (0.223)	0.406 * (0.215)
Affiliated Firm	0.213 (0.329)	0.425 (0.355)
Year dummy	Yes	Yes
Industry dummy	Yes	Yes
Log likelihood	-2099.639	-2173.632
Observations	12109	12297

Table 3. Determinants of Dividend Payout– Tobit Model

Sample = All Firm 1990 - 1996

	Dependent Variable: Dividend / Capital	
	(1)	(2)
Intercept	-3.623 *** (0.436)	-4.218 *** (0.378)
Log of President Ownership	-0.002 (0.007)	
Log of All Directors Ownership		0.039 *** (0.013)
ROA (%)	0.099 *** (0.003)	0.098 *** (0.013)
Log of Assets	0.173 *** (0.027)	0.188 *** (0.019)
Leverage (%)	-0.002 (0.001)	-0.003 *** (0.001)
Tobin's q	-0.010 (0.026)	-0.008 (0.025)
Maximum Dividend / Assets (%)	0.025 *** (0.002)	0.023 *** (0.002)
Volatility of Operating Income / Assets over 5 years t-1	-0.099 *** (0.007)	-0.102 *** (0.007)
Log of Firm Age from Foundation	0.398 *** (0.057)	0.403 *** (0.049)
Largest Shareholder is Insurance Firm	0.043 (0.041)	0.064 (0.041)
Related Firm 1	0.070 (0.056)	0.077 (0.055)
Related Firm 2	0.091 (0.073)	0.138 ** (0.062)
Affiliated Firm	0.022 (0.126)	0.129 (0.081)
Year dummy	Yes	Yes
Industry dummy	Yes	Yes
Log likelihood	-13107.005	-13344.025
Observations	12109	12297

Table 4. Determinants of Changing Dividend Policy – Multinomial Logit Model

Dependent Variable Dividend Increase /Cut /Omit (Not Pay)

Sample=dividends was paid in last year. 1990 - 1996

	Dependent variables: Dividends Stay, Increase, Cut or Omit					
	Increase	Cut	Omit	Increase	Cut	Omit
Intercept	-0.328 *** (0.711)	-2.301 *** (0.715)	5.182 *** (1.432)	-3.409 *** (0.704)	-2.468 *** (0.733)	6.105 *** (1.489)
Log of President Ownership	0.075 *** (0.019)	0.014 (0.018)	-0.164 *** (0.038)			
Log of All Directors Ownership				0.105 *** (0.027)	0.026 (0.027)	-0.270 *** (0.056)
Change in ROA	0.293 *** (0.023)	-0.305 *** (0.022)	-0.534 *** (0.038)	0.290 *** (0.022)	-0.305 *** (0.021)	-0.523 *** (0.040)
Lagged Change in ROA	0.234 *** (0.021)	-0.170 *** (0.020)	-0.382 *** (0.042)	0.231 *** (0.021)	-0.172 *** (0.020)	-0.370 ** (0.043)
Log of Assets	0.214 *** (0.033)	0.030 (0.033)	-0.421 *** (0.070)	0.211 *** (0.033)	0.038 (0.033)	-0.472 *** (0.073)
Leverage (%)	-0.019 *** (0.003)	0.007 ** (0.003)	0.058 *** (0.008)	-0.019 *** (0.003)	0.006 ** (0.003)	0.059 *** (0.008)
Tobin's q	0.498 *** (0.085)	-0.464 *** (0.140)	-2.652 *** (0.466)	0.487 *** (0.083)	-0.486 *** (0.140)	-2.690 *** (0.459)
Maximum Dividend / Assets (%)	-0.010 ** (0.005)	0.001 (0.004)	-0.077 *** (0.014)	-0.011 ** (0.005)	0.002 (0.004)	-0.070 *** (0.014)
Volatility of Operating Income / Assets over 5 years t-1	-0.003 (0.032)	0.032 (0.035)	0.223 *** (0.071)	-0.003 (0.032)	0.035 (0.034)	0.226 *** (0.071)
Log of Firm Age from Foundation	-0.413 *** (0.087)	-0.050 (0.084)	0.019 (0.167)	-0.405 *** (0.087)	-0.058 (0.084)	0.074 (0.162)
Largest Shareholder is Insurance Firm	-0.112 (0.093)	-0.048 (0.010)	0.041 (0.187)	-0.103 (0.092)	-0.095 (0.093)	0.004 (0.187)
Related Firm 1	-0.194 * (0.100)	-0.048 (0.103)	-0.160 (0.175)	-0.177 * (0.100)	-0.049 (0.103)	-0.161 (0.176)
Related Firm 2	-0.009 (0.132)	-0.203 (0.139)	-0.284 (0.222)	0.002 (0.133)	-0.203 (0.139)	-0.241 (0.209)
Affiliated Firm	-0.069 (0.145)	-0.259 (0.159)	-0.359 (0.374)	-0.037 (0.147)	-0.211 (0.162)	-0.482 (0.387)
Year dummy		Yes			Yes	
Industry dummy		Yes			Yes	
Log likelihood		-8723.244			-8834.103	
Observations		10521			10631	

Table 5. Determinants of Changing Dividend Policy – Logit Model

Dependent Variable Dividend Initiation /Not

Sample=dividends was not paid in last year. 1990 - 1996

	Dependent variables: Dividends Initial Dummy	
	(1)	(2)
Intercept	-7.726 *** (1.913)	-7.989 *** (1.957)
Log of President Ownership	0.204 *** (0.052)	
Log of All Directors Ownership		0.286 *** (0.061)
Change in ROA	0.268 *** (0.065)	0.257 *** (0.062)
Lagged Change in ROA	0.268 *** (0.065)	0.254 *** (0.033)
Log of Assets	0.481 *** (0.096)	0.482 *** (0.095)
Leverage (%)	-0.041 *** (0.007)	-0.041 *** (0.007)
Tobin's <i>q</i>	0.838 *** (0.231)	0.684 *** (0.230)
Maximum Dividend / Assets (%)	0.071 *** (0.015)	0.068 *** (0.015)
Volatility of Operating Income / Assets over 5 years t-1	-0.374 *** (0.086)	-0.353 *** (0.083)
Log of Firm Age from Foundation	-0.308 (0.233)	-0.313 (0.231)
Largest Shareholder is Insurance Firm	-0.012 (0.254)	0.069 (0.250)
Related Firm 1	-0.098 (0.260)	-0.016 (0.260)
Related Firm 2	0.324 (0.254)	0.350 (0.259)
Affiliated Firm	-0.496 (0.390)	-0.231 (0.376)
Year dummy	Yes	Yes
Industry dummy	Yes	Yes
Log likelihood	-455.195	-474.906
Observations	1526	1599

Table 6. Determinants of Dividend Payout– Logit Model

Dependent Variable 1 = Dividend Pay / 0=Not Pay

Left sample = Negative profit; Right sample = Positive profit; 1990 - 1996

	Dependent Variable: Dividend Dummy			Dependent Variable: Dividend Dummy	
	(1)	(2)		(1)	(2)
Intercept	-10.605 *** (2.051)	-14.796 *** (2.178)	Intercept	-13.476 *** (1.957)	-13.917 *** (2.041)
Log of President Ownership	0.204 *** (0.049)		Log of President Ownership	0.291 *** (0.062)	
Log of All Directors Ownership		0.442 *** (0.067)	Log of All Directors Ownership		0.421 *** (0.079)
ROA (%)	0.353 *** (0.040)	0.352 *** (0.039)	ROA (%)	0.431 *** (0.061)	0.417 *** (0.060)
Log of Assets	0.417 *** (0.091)	0.571 *** (0.096)	Log of Assets	0.798 *** (0.098)	0.812 *** (0.098)
Leverage (%)	-0.036 *** (0.007)	-0.040 *** (0.007)	Leverage (%)	-0.022 *** (0.009)	-0.021 ** (0.008)
Tobin's <i>q</i>	0.889 *** (0.340)	1.053 *** (0.347)	Tobin's <i>q</i>	0.325 (0.221)	0.226 (0.222)
Maximum Dividend / Assets (%)	0.130 *** (0.018)	0.129 *** (0.017)	Maximum Dividend / Assets (%)	0.308 *** (0.030)	0.294 *** (0.028)
Volatility of Operating Income / Assets over 5 years t-1	-0.100 (0.067)	-0.124 * (0.064)	Volatility of Operating Income / Assets over 5 years t-1	-0.395 *** (0.078)	-0.403 *** (0.076)
Log of Firm Age from Foundation	0.400 (0.247)	0.366 (0.249)	Log of Firm Age from Foundation	-0.211 (0.227)	-0.228 (0.227)
Largest Shareholder is Insurance Firm	-0.308 (0.259)	-0.305 (0.262)	Largest Shareholder is Insurance Firm	-0.050 (0.252)	0.028 (0.247)
Related Firm 1	-0.005 (0.236)	0.180 (0.232)	Related Firm 1	0.482 ** (0.236)	0.537 (0.233)
Related Firm 2	0.152 (0.311)	0.327 (0.319)	Related Firm 2	0.270 (0.277)	0.334 (0.271)
Affiliated Firm	-0.522 (0.524)	-0.088 (0.505)	Affiliated Firm	0.413 (0.388)	0.688 (0.427)
Year dummy	Yes	Yes	Year dummy	Yes	Yes
Industry dummy	Yes	Yes	Industry dummy	Yes	Yes
Log likelihood	-596.059	-597.046	Log likelihood	-1150.694	-1196.596
Observations	1508	1576	Observations	10288	10414

Table 7. Determinants of Dividend Payout– Logit Model

Dependent Variable 1 = Pay/ 0=Not Pay

Sample=Negative Profit and Tobin's Q > 1 ; 1990 - 1996

	Dependent Variable: Dividend Dummy	
	(1)	(2)
Intercept	-12.849 ** (5.377)	-25.776 *** (5.949)
Log of President Ownership	0.338 *** (0.118)	
Log of All Directors Ownership		0.988 *** (0.161)
ROA (%)	0.409 *** (0.084)	0.495 *** (0.102)
Log of Assets	0.748 *** (0.265)	1.302 *** (0.292)
Leverage (%)	-0.067 *** (0.015)	-0.092 *** (0.166)
Tobin's <i>q</i>	-0.552 (0.466)	-0.375 (0.644)
Maximum Dividend / Assets (%)	0.142 ** (0.054)	0.167 *** (0.051)
Volatility of Operating Income / Assets over 5 years t-1	-0.340 ** (0.157)	-0.364 ** (0.150)
Log of Firm Age from Foundation	0.582 (0.497)	0.691 (0.496)
Largest Shareholder is Insurance Firm	-0.777 (0.539)	-0.631 (0.567)
Related Firm 1	0.772 (0.599)	1.011 (0.664)
Related Firm 2	-0.321 (0.891)	0.468 (0.790)
Affiliated Firm	0.725 (0.975)	2.772 ** (1.206)
Year dummy	Yes	Yes
Industry dummy	Yes	Yes
Log likelihood	-107.956	-93.764
Observations	392	412

Table 8. Determinants of Changing Dividend Policy –Tobit Model

Left sample = Negative profit; Right sample = Positive profit; 1990 - 1996

	Dependent Variable: Dividend / Capital			Dependent Variable: Dividend / Capital	
	(1)	(2)		(1)	(2)
Intercept	-6.436 *** (1.338)	-8.667 *** (1.396)	Intercept	-3.269 *** (0.338)	-3.227 *** (0.356)
Log of President Ownership	0.109 *** (0.032)		Log of President Ownership	-0.014 ** (0.006)	
Log of All Directors Ownership		0.241 *** (0.047)	Log of All Directors Ownership		-0.001 (0.012)
ROA (%)	0.205 *** (0.023)	0.204 *** (0.023)	ROA (%)	0.062 *** (0.003)	0.061 *** (0.003)
Log of Assets	0.221 *** (0.063)	0.302 *** (0.063)	Log of Assets	0.134 *** (0.017)	0.154 *** (0.017)
Leverage (%)	-0.020 *** (0.005)	-0.022 *** (0.005)	Leverage (%)	0.005 *** (0.001)	0.004 *** (0.001)
Tobin's <i>q</i>	0.723 *** (0.194)	0.736 (0.183)	Tobin's <i>q</i>	0.022 (0.022)	0.014 (0.022)
Maximum Dividend / Assets (%)	0.073 *** (0.007)	0.069 *** (0.007)	Maximum Dividend / Assets (%)	0.025 *** (0.002)	0.024 *** (0.002)
Volatility of Operating Income / Assets over 5 years t-1	-0.161 *** (0.039)	-0.160 *** (0.038)	Volatility of Operating Income / Assets over 5 years t-1	-0.079 *** (0.007)	-0.081 *** (0.007)
Log of Firm Age from Foundation	0.456 *** (0.162)	0.443 *** (0.160)	Log of Firm Age from Foundation	0.399 *** (0.054)	0.414 *** (0.057)
Largest Shareholder is Insurance Firm	0.061 (0.181)	0.086 (0.179)	Largest Shareholder is Insurance Firm	0.072 ** (0.035)	0.085 ** (0.037)
Related Firm 1	0.065 (0.177)	0.157 (0.176)	Related Firm 1	-0.034 (0.042)	0.007 (0.044)
Related Firm 2	-0.340 (0.237)	-0.243 (0.237)	Related Firm 2	0.136 ** (0.065)	0.193 *** (0.069)
Affiliated Firm	-0.301 (0.295)	-0.078 (0.293)	Affiliated Firm	-0.032 (0.072)	0.038 (0.081)
Year dummy	Yes	Yes	Year dummy	Yes	Yes
Industry dummy	Yes	Yes	Industry dummy	Yes	Yes
Log likelihood	-1290.972	-1312.794	Log likelihood	-10315.393	-10491.680
Observations	1526	1595	Observations	10583	10702

Table 9. Determinants of Changing Dividend Policy – Random Effect Tobit ModelSample = Negative profit and Tobin's $Q > 1$; 1990 - 1996

	Dependent Variable: Dividend / Capital	
	(1)	(2)
Intercept	-5.119 ** (2.564)	-7.030 *** (2.508)
Log of President Ownership	0.087 (0.060)	
Log of All Directors Ownership		0.272 *** (0.079)
ROA (%)	0.220 *** (0.044)	0.220 *** (0.043)
Log of Assets	0.188 (0.115)	0.275 ** (0.110)
Leverage (%)	-0.024 *** (0.008)	-0.026 *** (0.008)
Tobin's q	0.038 (0.313)	0.107 (0.284)
Maximum Dividend / Assets (%)	0.076 *** (0.013)	0.073 *** (0.012)
Volatility of Operating Income / Assets over 5 years t-1	-0.285 *** (0.077)	-0.295 *** (0.076)
Log of Firm Age from Foundation	0.347 (0.278)	0.354 (0.272)
Largest Shareholder is Insurance Firm	0.392 (0.345)	0.534 (0.346)
Related Firm 1	0.278 (0.312)	0.370 (0.309)
Related Firm 2	-0.966 ** (0.485)	-0.674 (0.483)
Affiliated Firm	0.390 (0.549)	0.876 * (0.516)
Year dummy	Yes	Yes
Industry dummy	Yes	Yes
Log likelihood	-319.733	-1312.794
Observations	412	434