

# **DIVIDEND POLICY IN AUSTRALIA**

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**Abstract:** *This study examined the determinants of dividends in an environment where tax was supposedly a main reason for paying dividends. The imputation tax system in Australia had led to the expectation that firms should pay the maximum possible franked dividends. Using panel data from January 1994 to December 2004, I found strong evidence that dividend payout ratio and likelihood of paying dividends were positively related to ownership concentration, profitability, firm size, the presence of dividend reinvestment scheme and tax paid, and were negatively related to leverage, growth opportunity, business risks and investment. My findings supported the conjecture that dividend policy could be explained by tax reasons, residual theory and agency relationship simultaneously.*

**Key words:** *dividend payout ratio, likelihood of paying dividends, determinants, imputation tax system*

This paper examines the determinants of dividend payouts using Australian data. Australia provides an interesting and unique testing ground in which to study the relationship between ownership concentration and dividend policy. The tax system in Australia (known as the imputation system) differs from that of the U.S. (known as the classical tax system). The Australian imputation tax system, introduced in July 1987, removed the double taxation of dividends, which leads to the argument that many resident shareholders will prefer companies to distribute imputation credits by paying the maximum possible franked dividend (Hamson & Ziegler, 1990).

Using panel data on a sample of Australian publicly listed firms over the period 1994-2004, results indicate that dividend payout ratio and likelihood of paying dividends are positively related to ownership concentration, profitability, firm size, the presence of dividend reinvestment scheme and tax paid, and are negatively related to leverage, growth opportunity, business risks and investment. The findings support the conjecture that dividend policy can be explained by tax reasons, residual theory and agency relationships, simultaneously.

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positively by size in Australia and liquidity in Japan, and negatively by risk in Japan only. An industry effect is found to be significant in both countries.

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## **AGENCY THEORY OF DIVIDENDS**

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The finance literature suggests that dividends may help reduce agency problems. The seminal studies of Rozeff (1982) and Easterbrook (1984) provide agency cost explanations of why firms pay dividends. In particular, Rozeff suggests that dividend payments are part of the firm's optimal monitoring mechanism and these payments help to reduce agency costs. In his model, firms choose a dividend payout ratio that minimises their total costs (i.e., agency costs and transaction costs of financing). Agency costs decrease with dividends, while transaction costs increase with dividends. The minimisation of total costs results in a unique optimal dividend payout for a given firm. Meanwhile, Easterbrook argues that dividend payments force managers to raise funds in the capital markets more frequently than they would without dividend payments. Therefore dividends cause managers to be frequently scrutinised by external professionals such as investment bankers, lawyers and public accountants. This in turn forces managers to act in line with shareholders' interests, thereby reducing agency costs of equity.

There has been a substantial number of empirical studies that lend support for the agency costs explanation of dividends. Rozeff (1982) finds that firms with higher firm-specific risks and high growth firms pay smaller dividends, which is consistent with his model. Rozeff's model also receives support from Dempsey & Laber (1992) who replicated Rozeff's analysis using samples from different periods of time and from Crutchley & Hansen (1989) who find that dividends are negatively related to the firm's flotation costs. Meanwhile, Jensen et al. (1992) and Noronha et al. (1996) find that insider ownership, dividends

and debt financing are substitute mechanisms in controlling agency costs which is consistent with Easterbrook's (1984) argument.

## **Residual Theory of Dividends**

The residual theory of dividends is a school of thought that suggests that dividend paid by a firm should be viewed as residual or the amount left over after all acceptable investment opportunities have been undertaken. According to this approach, as long as the firm's equity need exceeds the amount of retained earnings, no cash dividends is paid.

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## **METHOD**

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The research design includes annual panel data over an eleven-year period from January 1994 to December 2004. The sampling frame consists of a population of all companies listed on the Australian Stock Exchange (ASX) in 1994. Of these companies, financial firms were excluded as their dividend decisions are influenced by government regulations. In contrast, I include any firms delisted during this period to avoid survivorship bias, providing that they had data available one year before delisting. The final sample of 829 companies included 696 active companies and 133 delisted companies. After excluding observations with incomplete ownership or accounting data, the final sample has 6,665 firm-year observations.

Of this sample, 2,382 (36.5%) observations have dividend payouts higher than zero (i.e. pay dividends) and 4,283 (63.5%) observations have zero dividend payouts (i.e. do not pay dividends). Of dividend paying observations, 1,830 (77%) are for fully and partially franked dividend payers and 552 (23%) observations are for unfranked dividend payers. In terms of industry, 4,016 (60.2%) observations are industrial firms and 2,649 (39.8%) observations are mining firms.

Accounting data are collected from *Datastream* and *FinAnalysis* databases, respectively. Ownership data are collected manually from companies' annual reports obtained on-line from *DatAnalysis* and *Connect-4* databases. In their annual reports, Australian listed companies have to disclose the end-of-financial-year shareholdings of substantial (block) shareholders and the largest twenty registered shareholders.

**Model and Measurement of Variables**

I utilised a panel study methodology as it provides more robust information, more variability, less collinearity among variables, more degrees of freedom and more efficiency (Baltagi, 1995). The methodology also permits us to control for unobserved firm heterogeneity. Specifically, I use pooled and random effects tobit regressions as around 67 percent of observations in my sample have dividend payout ratios of zero. In a pooled tobit regression, non-spherical disturbances (i.e., serial correlation and heteroskedasticity) are controlled using the Huber-White/Sandwich estimator (clustered) for variance. The random effects panel data tobit regression treats firm specific unobserved characteristics as a random variable and, therefore, they were a part of the error term. As a robustness check, I also use pooled and random effects logit regressions.

The tobit regression used to test the impact of ownership concentration on dividend payouts takes the following form:

$$\text{Dividend Payout Ratio}_{it} = \beta_0 + \beta_1 \text{Ownership concentration}_{it} + \delta_1 \text{Profitability}_{it} + \delta_2 \text{Leverage}_{it} + \delta_3 \text{Firm size}_{it} + \delta_4 \text{Growth-opportunity}_{it} + \delta_5 \text{Business risk}_{it} + \delta_6 \text{Investment}_{it} + \delta_7 \text{Tax paid}_{it} + \delta_8 \text{DRP}_{it} + \delta_9 (\text{Industry}_{it}) + \delta_{10-17} (\text{Year}) + \varepsilon_{it} \quad (1)$$

The subscripts *i* and *t* represent firm and year, respectively. Dividend payout ratio is defined as dividend scaled by net earnings.

*Ownership concentration* is measured by the aggregate ownership of shareholders holding at least five percent of equity (i.e., substantial shareholders). Agency theory (Rozeff, 1982; Easterbrook, 1984) predicts that ownership concentration is negatively related to dividend payouts. Higher ownership concentration will reduce agency conflicts due to better managerial monitoring by large shareholders. In turn, it will reduce the needs to pay higher dividends or the monitoring role of dividends. In Australia, however, firms have an incentive to pay higher dividends in order to distribute franking credits. It can be argued that while managers prefer to preserve cash flows by paying lower dividends, large shareholders may force them to pay higher dividends. Thereby, ownership concentration can be positively related to dividend payouts.

*Profitability* is defined as net profit after tax before abnormal earnings divided by total assets. A positive effect of profitability on dividend payouts is expected as dividends are paid from earnings.

*Leverage* is defined as the book value of total debt divided by total assets. Jensen et al. (1992) indicate that dividends and debt financing are substitute mechanisms to reduce equity agency costs. Debt holders have an aversion to dividends since their payment transfers a firm's asset to shareholders. Thus, a negative relationship between debt and dividend payouts is expected.

*Firm size* is measured by a natural logarithm of total assets. Larger firms tend to have better access to the capital markets, which reduces their dependence on internally generated funding and allows for higher dividend-payout ratios (Aivazian & Cleary, 2003). Therefore, I expect a positive relationship between dividend payouts and firm size.

*Growth opportunity* is defined as market to book value ratio. A negative relationship between *dividend* and *growth opportunity* is expected as high growth firms may pay lower dividends due to their larger investment requirements and a tendency to retain funds to avoid external financing with its attendant costs (Rozeff, 1982; Fama & French, 2001).

*Business risk* is measured by the standard deviation of EBIT in the previous 5 years. Greater business risk makes the expected direct relationship between current and expected future profitability less certain (Jensen et al., 1992). Thus, a negative relationship between dividend payouts and business risk is expected.

*Investment* is defined as capital expenditure divided by total assets. Miller & Modigliani (1961) argue that a firm's investment decisions are not affected by its dividend decisions. The residual dividend theory suggests that a firm will pay dividends only when its internally generated funds are not completely utilized for investment purposes (Alli et al., 1993), whereas the pecking order theory (Myers & Majluf, 1984) suggests that internally generated funds are the least expensive forms of finance. Accordingly, *investment* is expected to be negatively associated with *dividend*.

*DRP* is a dummy variable with one for firms with dividend reinvestment plans and zero otherwise. Australian firms can use DRPs to fulfil the necessity of paying larger dividends while at the same time maintaining their investment policy (Bellamy, 1994). A DRP scheme allows firms to pay out a greater proportion of their earnings in dividends, as a portion of these funds will be

returned to the firm via the issue of new shares to participants. It is expected that firms with DRPs will pay higher dividends or will demonstrate a greater likelihood of paying dividends.

*Tax paid* is defined as tax paid divided by total assets. The imputation system requires a franking account to be maintained by each company. Credits to a company's franking account arise from two sources: payment of company Australian income tax and receipt of Australian franked dividends from other companies. For each dollar of company income tax paid, the credit to the franking account is:  $\$((1-t_c)/t_c)$ , where  $t_c$  is the Australian company tax rate. The balance in a company's franking account at any time shows the maximum amount that it can pay as a franked dividend (see Peirson et al., 2006). Under the Australian imputation tax system, firms may seek to raise their dividend payouts because of the increased incentive to distribute taxed profits (Hamson & Ziegler, 1990). Hence, a positive relationship between *tax paid* and *dividend* is expected.

To account for variation in dividend payouts due to industry differences, I incorporated an industry dummy variable that takes the value of one if the firm is in the mining sector and zero otherwise (i.e. industrial). Year dummy variables are also included in the model to remove secular effects among the independent variable. Ten dummy variables are used to cover the eleven year data.

Table 1 summarise the potential relationship between firm's characteristics and dividends according to tax motive, agency theory and residual theory.



**Table 2. Descriptive Statistics**

Variable	Definition	Mean	Std. Dev.	Min.	Max.
Dividend payout ratio	Dividends / net profit after tax before abnormal earnings	0.2167	0.3423	0	1.99
Ownership - concentration	The aggregate ownership of shareholders holding at least five percent of equity	0.4064	0.2439	0	1
Profitability	Net profit after tax before abnormal earnings / total assets	-0.1862	0.9010	-35.58	6.70
Leverage	Book value total debt / total assets	0.1791	0.3073	0	9.66
Firm size	Ln (total assets)	17.3737	2.1851	10.09	25.17
Growth opportunity	Market to book value ratio	1.6290	2.6182	0.06	71.88
Business risk	Standard deviation of EBIT in the previous 5 years	9.0x10 <sup>6</sup>	30.1x10 <sup>6</sup>	1,605	8.0 x10 <sup>8</sup>
Investment	Capital expenditure / total assets	0.1028	0.1973	0	6.78
Tax paid	Tax paid / total assets	0.0136	0.0285	0	0.90
DRP	Dummy variable. 1 for firms with div. reinvestment plans, 0 otherwise	0.1130	0.3165	0	1

Table 3 presents the dynamic of dividend payout ratio of Australian firm during the period of 1994 – 2004.

**Table 3. Dividend Policy in Australia: 1994-2004**

Year	Sample size	Dividend payout ratio (%)	Paying dividend firms (%)*
1994	335	22.64	43.28
1995	560	22.03	40.36
1996	616	22.38	39.61
1997	656	24.66	40.10
1998	683	25.76	40.70
1999	686	22.95	38.34
2000	664	21.03	34.94
2001	655	18.84	32.21
2002	657	19.07	30.29
2003	641	19.23	31.67
2004	512	19.48	32.42

\* This indicates proportion of firms, rather than the mean proportion for associated variables.

It can be seen in Tables 2 and 3, on average, Australian firms distributed 21.67 percent of their earnings as dividends. Interestingly, dividend payouts of Australian firms increase in 1997 and 1998, but tend to decrease after that period. Interestingly, the proportion of firm paying dividends also decreases over time in Australia.

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## Empirical Results

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Table 4 presents pooled and random effect tobit regression estimates of the determinants of dividend payouts based on Equation 1 using dividend payout ratio as dependent variable.



**Table 5. Determinants of Dividends: Logit Regression**

Variable	Pooled	Random Effects
Ownership concentration	0.756*** (4.20)	0.644 (1.37)
Profitability	4.325*** (4.85)	4.022*** (12.15)
Leverage	-1.343*** (-4.06)	-3.129*** (-6.59)
Firm size	0.849*** (22.71)	1.798*** (17.75)
Growth opp.	-0.228*** (-3.12)	-0.080 (-1.13)
Business risks	-0.000*** (-2.60)	-0.000*** (-2.86)
Investment	-0.863* (-1.86)	0.153 (0.21)
Tax	29.798*** (10.31)	27.344*** (11.47)
DRP	1.714*** (10.78)	1.402*** (5.40)
Industry dummy	-1.921*** (-17.18)	-4.047*** (-11.40)
Year dummy	Included	Included

- \*\*\* significant at the 0.01 level
- \*\* significant at the 0.05 level
- \* significant at the 0.10 level

The result shows that the likelihood of firm paying dividends is positively related to profitability, firm size, DRP and tax paid, and negatively related to leverage, growth opportunity, business risk and investment. The results are consistent with those presented in Table 4.

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**ADDITIONAL CHECK FOR ROBUSTNESS**

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I have conducted several additional sensitivity analyses which suggest that the results reported earlier in this paper are insensitive to various alternative specifications. I explore alternative proxies for the explanatory variables. For example, effective tax rate (tax paid divided by pre-tax income) is used instead of tax paid scaled by assets, total market capitalization is used as a measure of firm size, and EBIT scaled by total assets is used as a proxy for profitability. I also run the

tobit regression using an alternative ownership concentration measure such as the largest shareholdings (TOP1) and the five largest shareholdings (TOP5) which is collected from the Top 20 list in firms' annual reports. The results are generally consistent with my earlier analyses.

I use six-digit GICS Industry Classifications to control for industry differences instead of a dummy variable for mining versus industrial sector. Although the number of observations in some six-digit GICS Industry Classifications is relatively small, the results are similar to those reported in Table 3. I also test for robustness in the presence of outliers and influential observations by truncating the largest one to five percent probability levels for each tail of the distribution for the model variables. The results again are consistent. Finally, I repeat my analysis for a subset of firms that have non-negative net earnings to remove the possibility that firms with positive retained earnings, but negative net earnings, are unable to pay dividends due to cash shortages. I generally find similar results.

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**CONCLUSION**

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This study investigated the determinants of dividend policy for a sample of Australian listed firms over the period January 1994 to December 2004. The Australian imputation tax system, introduced in July 1987, removed the double taxation of dividends, which leads to the argument that firms should distribute imputation credits by paying the maximum possible franked dividend. The overall findings support the conjecture that dividend policy of Australian firms is driven by tax reasons (i.e., to distribute franking credits). But both tobit and logit regression results also suggest that dividend policy of Australian firms is also influenced by profitability, leverage, firm size, growth opportunity, business risk and investment.

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