Dividend Policy in the Absence of Taxes

Khamis Al-Yahyaee, Toan Pham*, and Terry Walter

School of Banking and Finance, University of New South Wales

Abstract

We examine dividend policy in Oman, this being a unique environment where firms distribute almost 100% of their profits as dividends, and where firms are highly levered through bank loans, thus reducing the role of dividends in agency cost mitigation. We find that profitability, size and business risk are factors that determine dividend policy of both financial and non-financial firms. Government ownership, leverage and age have a significant impact on the dividend policy of non-financial firms but no effect on financial firms. The factors that influence the probability of paying dividends are the same factors that determine the amount of dividends paid for both financial and non-financial firms. Our results also show that agency costs mitigation is not a critical driver of dividend policy of Omani firms. Finally, we apply the Lintner (1956) model and find that non-financial firms adopt policies that smooth dividends, whereas financial firms do not have stable dividend policies.

JEL Classification: G35

Keywords: dividends, taxes, agency theory

December 2006

* Corresponding author. E-mail address: t.pham@unsw.edu.au. School of Banking and Finance, University of New South Wales, Sydney, 2052 Australia. Phone: +61 2 9385 5869 Fax: +61 2 9385 6347

1. Introduction

"*Although a number of theories have been put forward in the literature to explain their pervasive presence, dividends remain one of the thorniest puzzles in corporate finance*" (Allen, Bernardo, and Welch (2000, p.2499))

The question of "Why do corporations pay dividends?" has puzzled researchers for many years. Despite the extensive research devoted to solve the dividend puzzle, a complete understanding of the factors that influence dividend policy and the manner in which these factors interact is yet to be established. The fact that a major textbook such as Brealey and Myers (2003) lists dividends as one of the "Ten unresolved problems in finance" reinforces Black's (1976, p.5) statement "The harder we look at the dividend picture, the more it looks like a puzzle, with pieces that just don't fit together".

Several rationales for corporate dividend policy are proposed in the literature, but there is little consensus among researchers. On the whole the literature focuses on several strands of hypotheses of dividend policy. The seminal Miller-Modigliani's irrelevance theory has been tested and largely supported by Black and Scholes (1974), Miller and Scholes (1982), Miller (1986), Conroy et al. (2000) while contrary evidence has been reported by Baker and Farrelly (1988) and Baker et al. (2005). Mixed results are also found for the tax hypothesis (Black and Scholes (1974), Litzenberger and Ramaswamy (1980), Miller and Scholes (1982), Poterba and Summers (1984), Keim (1985), and Kalay and Michaely (2000)). The agency cost based hypothesis argues that dividend payout helps align the interest of managers and shareholders by reducing the free cash flow for use at the discretion of managers (Jensen and Meckling (1976), Rozeff (1982), Easterbrook (1984), Jensen (1986), Jensen et al. (1992), Lang and Litzenberger (1989), DeAngelo, DeAngelo and Stultz (2004)). While the literature is voluminous and is still evolving the results continue to be inconclusive. In this context Oman is a unique case to revisit the dividend issue. In Oman, there are no taxes on dividends or on capital gains. The absence of taxes may provide a 'clinical' or uncluttered environment to re-examine the dividend puzzle.

There are four main objectives of this paper which are, first, to identify the factors that determine the amount of dividends, second, to examine the decision to pay dividends, third, to outline the potential differences in dividend policy between financial and non-financial firms, and fourth, to apply the Lintner (1956) model to test the stability of dividend policy.

There are many important motives for this study. First and foremost, Omani firms distribute almost 100% of their profits in dividends which led the Capital Market Authority to issue a circular (number 12/2003) arguing that firms should retain some of their earnings for "rainy days". This practice provides an opportunity to examine the characteristics of firms that pay dividends. Second, the study will be conducted in a unique environment where there are no taxes on dividends and capital gains. Tax differentials are a major part of the dividend puzzle. Third, one explanation for paying dividends is to minimize agency problems. However, Omani firms are highly levered through bank loans, which reduce the role of dividends in alleviating agency problem (Al-Yahyaee, Pham, and Walter (2005)).[1] Fourth, the determinants of dividend policy are controversial and there is no unanimity among researchers on the factors that affect dividend policy. This controversy motivates this research to provide some new evidence as to the factors that affect dividend policy. Fifth, most previous research excludes non-dividend paying firms which may create a selection bias (Kim and Maddala (1992), Deshmukh (2003), among others). We include non-dividend paying firms in our experimental design. Finally, there are some studies that report differences between dividend policy of financial and non-financial firms (Naceur, Goaied, and Belanes (2005)).[2] We examine this issue for Oman. Apart from the fact there has been no study of dividend policy in Oman, this paper contributes additional evidence to contrast the dividend policies in emerging and developed markets.

Our research provides a number of interesting results on dividend policy. First, we show that there are common factors that affect the dividend policy of both financial and non-financial firms, and there are others that affect only non-financial firms. For example, there are six determinants of dividend policy for non-financial firms, while there are only three factors that affect the dividend policy of financial firms. The common factors are profitability, size, and business risk. Government ownership, leverage, and age have a strong influence on the dividend policy of non-financial firms but no effect on financial firms. On the other hand, agency costs, tangibility, and growth factors do not appear to have any impact on the dividend policy of both financial and non-financial firms.

Second, we find that the determinants of the decision to pay dividends are consistent with those reported for the determinants of dividend policy. In particular, we find that the factors that

[1] See Aivazian, Booth, and Cleary (2003a) for a discussion on the role of bank debt in reducing the agency cost.
[2] Sawicki (2002) documents that there are significant differences in dividend payout of different industries using a sample of firms from East Asia.

influence the probability of paying dividends are the same as those that determine the amount of dividends paid.

Third, the empirical results in this paper show that the speed of adjustment differs substantially between financial and non-financial firms. While we find that non-financial firms adopt a policy of smoothing dividends, this is not the case for financial firms. In fact, we find that financial firms do not have stable dividend policies.

The remainder of the paper proceeds as follows. Section 2 briefly discusses the potential determinants of dividend policy and develops testable hypothesis. Section 3 describes the data, develops the regression specifications, presents summary statistics for the payment of dividends, and reports some descriptive statistics for the sample. Section 4 presents the results for the determinants of dividend policy. In section 5 we provide the results for the determinants of the likelihood to pay dividends. In section 6 we examine the stability of dividends using the Lintner model. Section 7 concludes the paper.

2. Factors that Influence Dividend Policy

Based upon the determinants of corporate dividend policy identified by the previous theoretical and empirical studies and the availability of data in the "Share-Holding Guide of Muscat Securities Market (MSM) Listed Companies", Omani Securities Market, in this section we describe the factors that are chosen as determinants of dividend policy.

2.1. Profitability

Profits have long been regarded as the primary indicator of a firm's capacity to pay dividends. Since dividends are usually paid from the annual profits, it is logical that profitable firms are able to pay more dividends. To examine whether the profitability of the firm influences its dividend policy, we use the ratio of earnings before interest and taxes to total assets as our surrogate for profitability. We expect to find a positive relationship between dividends and profitability.

2.2. Firm Size

Variables such as size have the potential to influence a firm's dividend policy. Larger firms have an advantageous position in the capital markets to raise external funds and are therefore less dependent on internal funds. Furthermore, larger firms have lower bankruptcy probabilities and therefore should be more likely to pay dividends. This implies an inverse

relationship between the size of the firm and its dependence on internal financing. Hence, larger firms are expected to pay more dividends. As a surrogate for firm size, we use the natural logarithm of sales.

2.3. Leverage

Leverage may affect a firm's capacity to pay dividends because firms that finance their business activities through borrowing commit themselves to fixed financial charges that include interest payments and the principal amount. Failure to make these payments by the due time subjects the firm to risk of liquidation and bankruptcy. Higher leverage might thus result in lower dividend payments. Furthermore, some debt covenants have restrictions on dividend distributions. Thus we expect a negative relationship between dividends and leverage. We use the debt ratio as our proxy for leverage.

2.4. Agency Costs

The separation of ownership and control results in agency problems. Agency costs can be reduced by distributing dividends (Rozeff (1982), Easterbrook (1984), Jensen et al. (1992), among others). In this vein, dividends are paid out to stockholders in order to prevent managers from building unnecessary empires to be used in their own interest. In addition, dividends reduce the size of internally generated funds available to managers, forcing them to go to the capital market to obtain external funds (Easterbrook (1984)). Furthermore, dividend payments are used to reduce the free cash flow problem (Jensen (1986)).

As explained in Rozeff (1982), firms with a larger percentage of outside equity holdings are subject to higher agency costs. The more widely spread is the ownership structure, the more acute the free rider problem and the greater the need for outside monitoring. Hence, these firms should pay more dividends to control the impact of widespread ownership. Consequently, we expect to find a positive association between the number of shareholders and the agency problem. We use the logarithm of the number of shareholders to account for the dispersion of ownership which is used as a proxy for agency costs.

For the case of Oman, where most firms are highly levered, banks play a pivotal financing role, and agency problems should be less severe (Al-Yahyaee et al. (2005)). Jensen (1986) argues that debt could serve as a substitute for dividends in reducing agency problems. This should reduce the importance of dividends in alleviating agency problems.

2.5. Business Risk

Business risk is a potential factor that may affect dividend policy. High levels of business risk make the relationship between current and expected future profitability less certain. Consequently, it is expected that firms with higher levels of business risk will have lower dividend payments. Furthermore, Michel and Shaked (1986), Bar-Yosef and Huffman (1986), and others argue that the uncertainty of a firm's earnings may lead it to pay lower dividends because volatile earnings materially increase the risk of default. In addition, field studies using survey data (e.g., Lintner (1956), Brav et al. (2005)) report compelling evidence that risk can affect dividend policy. In these surveys, managers explicitly cite risk as a factor that influences their dividend choice. As a surrogate for business risk, we use the standard deviation of return on investment. We expect to find a negative relationship between dividends and business risk.

2.6. Ownership Structure

Ownership structure is an important factor that may influence a firm's dividend policy (Maury and Pajuste (2002)). Different types of owners have different preferences for dividends.[3] For example, in family-controlled firms where managers are the owners there is less need for dividends to reduce agency conflicts. In contrast, firms with large government ownership may have greater agency problems, because, in firms where there is large government ownership, there is "*a double* principal-agent problem" (Gugler (2003, p.1301)). Dividend payments can help alleviate the agency problem in these firms. The above analysis implies a positive association between dividends and government ownership. To control for government ownership, we use a dummy variable which is equal to one for firms where the government is the controlling shareholder, and zero otherwise.[4]

2.7. Maturity

Grullon et al. (2002) suggest that as firms mature they experience a contraction in their growth which results in a decline in their capital expenditures. Consequently, these firms have more free cash flow to pay as dividends. Similarly, Brav et al. (2005) suggest that more mature firms are more likely to pay dividends. In contrast, younger firms need to build up reserves to

[3] Some studies find that some types of ownership structure such as insider ownership and institutional ownership affect dividend policy. However, we do not have data on these types of ownership.

[4] We use a 10% threshold level of ownership to identify the ultimate owner of the firm. For instance, if the government owns 10% or more of a firm's shares, that firm is considered government owned. This is the criteria used by the MSM. This approach is also used by La Porta et al. (1999), Faccio et al. (2001), Maury and Pajuste (2002), among others.

finance their growth opportunities requiring them to retain earnings. We use age as a proxy for a firm's maturity. We define age as the difference between the calendar year of the observation and the firm's incorporation date reported in the "Share-Holding Guide of MSM Listed Companies". We expect a positive association between dividends and the age of the firm.

2.8. Tangibility

Asset tangibility may have an effect on dividend policy because firms with high level of tangible assets can use these as collateral for debt (Booth et al. (2001)). Consequently, such firms tend to rely less on retained earnings implying that these firms will have more cash that can be distributed in dividends. This suggests a positive association between asset tangibility and dividends.

In contrast, Aivazian et al. (2003b) find that firms operating in emerging markets with high levels of tangible assets tend to have lower dividends. This is because firms in emerging markets face more financial constraints when short-term bank financing is a major source of debt. Hence, firms with high levels of tangible assets will have fewer short term assets that can be used as collateral to obtain the necessary financing. For Oman, firms are highly levered with short-term bank debt playing a pivotal role in financing (Al-Yahyaee et al. (2005)). In this case, Aivazian et al. (2003b) analysis implies that we should observe a negative association between dividends and tangibility. To test for the above hypothesis, we use the ratio of total assets minus current assets divided by total assets as a surrogate for tangibility. We predict a negative association between dividends and asset tangibility.

2.9. Growth Opportunities

Firms experiencing substantial success and rapid growth require large additions of capital. Consequently, growth firms are expected to pursue lower dividend payout policies. Similarly, the pecking order theory predicts that firms with a high proportion of their market value accounted by growth opportunities should retain more earnings so that they can minimize the need to raise new equity capital. Free cash flow theory also predicts firms with high growth opportunities will have lower free cash flow and will pay lower dividends. To account for growth opportunities, we use the market-to-book ratio. We expect a negative relationship between dividends and growth opportunities.

3. Data

The data for this study are obtained from "Share-Holding Guide of MSM Listed Companies" published by the Muscat Securities Market (MSM). The data set comprise all publicly traded firms listed at the MSM. In the sample, firms come from all four sectors that comprise the MSM namely, financial and banking sector, service sector, industry sector, and insurance sector. We split this sample into financial and non-financial firms. Financial firms include banks, insurance, leasing, and investment holdings while non-financial firms include industrial and service firms such as poultry, fisheries, agriculture, oil, and manufacturing firms.

The number of firms included in the study changes from one year to another, with a range from 14 to 37 for financial firms and a range from 32 to 107 for non-financial firms. This results in a data set of an unbalanced panel containing 413 firm-year observations for financial firms and 1,057 firm-year observations for non-financial firms. The fact that we are using panel data gives "more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency" (Baltagi (2001, p.6)).

These data are time series cross-sectional variables which are collected over the entire life of the MSM from 1989 to 2004. We check the accuracy of the data by comparing the figures from the MSM Guide with the data from the firm's financial statements available on the internet, where possible.

The empirical literature on dividend policy has largely ignored firms that do not pay dividends. If value-maximizing firms choose not to pay dividends, a sample that contains only dividend paying firms will be subject to a selection bias. An econometric analysis of such a sample will yield biased and inconsistent estimates. To address this selection bias, we use both dividend-paying and non-dividend paying firms. In this vein, Kim and Maddala (1992) demonstrate that it is important to allow for zero observations on dividends in the estimation of models of dividend behaviour. Likewise, Deshmukh (2003, p.353) states "If firms find it optimal to not pay dividends, then their exclusion from any empirical analysis may create a selection bias in the sample, resulting in biased and inconsistent estimates of the underlying parameters".

3.1. Estimation Model

Based on the previous description of our proxies for the potential factors that may affect dividend policy, we estimate the following model:

$$DIVYLD = \beta_0 + B_1 PROFIT + \beta_2 LOGS + \beta_3 DR + \beta_4 STOCK + \beta_5 DROI + \beta_6 GOVOWN$$

$$+ \beta_7 AGE + \beta_8 TANG + \beta_9 MB + \varepsilon \qquad (1)$$

Where:

DIVYLD = Dividend yield;

PROFIT = Ratio of earnings before interest and taxes to total assets;

LOGS = Log of sales;

DR = Ratio of total debt to total assets;

STOCK = Natural Log of the number of stockholders;

DROI = Standard deviation of return on investment;

GOVOWN = Dummy equal one if firm owned by government or its agencies and zero otherwise;

AGE = The difference between the current year of the observation and the year of incorporation;

TANG= Total assets minus current assets divided by total assets; and

MB = Ratio of a firm's market value of equity dividend by the book value of its assets.

We use dividend yield as the dependent variable. As a robustness check, we also employ the same measure of dividend policy used by Fama and French (2002), Aivazian et al. (2003b), and Barclay et al. (2006), which is dividend-to-asset ratio.[5]

The distribution of dividends is truncated with a zero dividend the lower bound. This necessitates the use of Tobit analysis which is a robust method for dealing with a truncated distribution. Furthermore, in Oman as well as in other countries, there are some firms that do not pay dividends. Even those that pay dividends do not pay them continuously. This creates a censoring problem (Kim and Maddala (1992)) and requires the use of Tobit (Anderson (1986), Kim and Maddala (1992), and Huang (2001a, 2001b)). Tobit regression has been used extensively in previous research (i.e., Kim and Maddala (1992), Barclay et al. (1995), Dickens et al. (2002), among others).

[5] We did not use the payout ratio to avoid the problems of negative payout ratios that results from negative earnings or excessively high payout ratios when income is close to zero (Schooley and Barney (1994)). In Fact, Aivazian et al. (2003a, p.378) state that "the dividend payout ratio is highly unstable and non-normal as earnings get close to zero; consequently, it is not useful as a dependent variable in cross-sectional regressions".

3.2. Payment of Dividends

Omani firms tend to attract investors by distributing large dividends. Most of the profitable Omani firms distribute dividends as a means of rewarding investors for holding their securities. Stock repurchase is a rare phenomenon in Oman; however some firms supplement their cash dividends distributions with stock dividends.

In Oman, most profitable companies distribute 100% of their profits as cash dividends. As with other Arab countries, Omani investors seem to prefer to receive periodic income in the form of dividends (Bolbol and Omran (2004)). For the entire sample, Panel A of Table 1 shows that the average payout ratio is around 46%. When the zero dividend observations are removed, the average payout ratio increases significantly to 122% (Panel B). This is considerably higher than the payout ratio reported by Fazzari, Hubbard, and Petersen (1988), Kaplan and Zingales (1997), and Aivazian et al. (2006) samples of US firms. It is also higher than 23.3% reported by Chen and Dhiensiri (2005) for New Zealand. Note also that the payout ratio for non-financial firms is higher than that for financial firms. The standard deviation of the payout ratio exhibits a similar pattern.

3.3. Descriptive Statistics[6]

Table 2 provides summary statistics for two measures of dividend policy for non-financial firms. As in Aivazian et al. (2003b), we report the ratio of aggregate dividend to total assets to avoid the problems that may exist with the divided yield.

As can be seen in Table 2, Omani firms have an average dividend yield of 3.18%[7] and a market-to-book ratio of 155%. The profitability of non-financial Omani firms as reflected in the ratio of earnings before interest and taxes to total assets is around 11.37%. Consistent with Al-Yahyaee et al. (2005), the figures reported show that non-financial Omani firms are highly levered with a debt ratio of around 63.80%. This is much higher than the debt ratio for most of the countries reported in Aivazian et al. (2003b) including the U.S. However, business risk (standard deviation for return on investment) in Oman is similar to the emerging countries reported in Aivazian et al. (2003b).

---

[6] We calculate the Variance Inflation Factors (VIF) for both financial and non-financial firms and find that all the VIFs are less than the standard cutoff value of 10, indicating that multicollinearity does not appear to be a significant factor.

[7] The dividend yield is calculated from a sample that contains both dividend paying and non-dividend paying firms which may underestimate it.

Table 3 describes the sample for financial firms. The figures reported show that the dividend yield is slightly higher for financial firms with a value of 3.39%. Similarly, the standard deviation of return on investment is larger for financial firms. However, government ownership in financial firms is smaller than that for non-financial firms. Likewise, the profitability and growth of financial firms is less than that for non-financial firms. The results also show that financial firms are highly levered with a debt ratio of 62.66% which is similar to that reported for non-financial firms.

Table 4 reports summary statistics on cash dividends for non-financial firms for each year from 1989-2004. In most cases, the number of non-financial firms that pay cash dividends changes from one year to the next with the highest number of firms paying cash dividends in 2004 and the lowest in 1990. Overall, around 50% of the firm-year observations have zero dividends.

Table 5 presents summary statistics on cash dividends for financial firms. There are some notable differences to those reported for non-financial firms. For instance, most financial firms distribute dividends. The percentage of financial firms that pay dividends (62%) is higher than that for non-financial firms (50%). While the lowest percentage of firms-year observations that pay dividends for non-financial firms occur in 1998, the lowest for financial firms is in 1992. The highest percentage occurs in 2003.

4. Determinants of Dividend Policy

We employ a Tobit regression to examine the determinants of dividends policy using dividend yield as the dependent variable. As a robustness check, we re-estimate our Tobit model using the ratio of the aggregate dividend to total assets instead of the dividend yield. The results are insensitive to this measure of dividend policy.[8]

4.1. Non-Financial Firms

Table 6 reports the results for the factors that explain dividend policy for the non-financial firms. We find that all of the variables are statistically significant except for agency costs, tangibility, and growth factors.

[8] As a robustness check, we estimate a random effects Tobit regression. The results are qualitatively similar to those obtained using Tobit regression.

Profitable firms are hypothesized to be more able to pay dividends. Our results are in line with our hypothesis. In particular, the coefficients on profitability (*PROFIT*) are positive and statistically significant at the one percent level whether we use dividend yield or dividend-to-asset ratio. Larger firms have easier access to capital markets and face lower transaction costs compared to smaller firms. Accordingly, we hypothesized a positive relationship between dividends and size. Our results are consistent with this prediction. Highly levered firms depend on external financing to a greater extent than those with lower leverage ratios, because leverage produces fixed charge requirements. Consequently, levered firms should pay fewer dividends. As predicted, the coefficients on leverage (*DR*) are negative and statistically significant at the one percent level.

Risky firms should pay fewer dividends. To test this hypothesis, we utilize the standard deviation of return on investment as proxy for business risk. Our results are consistent with this prediction.

In Oman, there are many firms where the government is a controlling shareholder. We use a dummy variable which is equal to one in firms where government has 10% or more of the shares. We predict a positive association between dividends and government ownership. As predicted, the estimates of government ownership (*GOVOWN*) are positive and significant.

Mature firms experience a contraction in their growth which may result in a decline in capital expenditure. As a result, these firms should have more free cash flow to pay in dividends. Hence, we should observe a positive association between dividends and maturity. Consistent with our predictions, the coefficients for age are positive and significant.

4.2. Financial Firms

Table 7 presents the results for the factors that influence dividend policy of financial firms. There are three significant determinants of dividend policy of financial firms, these being profitability, size, and business risk. Other factors such as leverage, agency costs, government ownership, age, tangibility, and growth do not have any significant impact on dividend policy of financial firms. The three significant factors have the hypothesized signs.

5. Determinants of the Decision to Pay Dividends

In this section, we examine the likelihood that a firm will pay dividends. In order to do so we estimate Probit regressions, where the dependent variable is binary variable equal to one if

the firm pays dividends and zero otherwise.[9, 10] As regressors, we employ the same variables as described in Section 4.

Our results for the determinants of the decision to pay dividends are consistent with those reported for the determinants of dividend policy. In particular, we find that the factors that influence the probability to pay dividends are the same factors that determine the amount of dividends paid.

5.1. Non-Financial Firms

The results presented in Table 8 shows that all the factors considered for examination are significant except for agency costs, tangibility, and growth. The six factors that we find previously influencing the amount of dividends paid are the same factors that affect the likelihood to pay dividends. For example, the coefficient on size is significant at all reasonable levels with a positive sign indicating that larger firms are more likely to pay dividends. Likewise, factors including profitability, government ownership, and age are all significant with a positive sign. On the other hand, risky firms and firms with high debt ratios are less likely to pay dividends.

5.2. Financial Firms

We estimated the Probit model of the likelihood to pay dividends on our sample of financial firms. The results are presented in Table 9 and show that there are three factors that influence the likelihood to pay dividends, i.e., profitability, size, and business risk. These factors are the same as the one reported for the determinants of the amount of dividends. The coefficients on leverage, agency costs, government ownership, age, tangibility, and growth variables are not statistically significant.

A comparison between the factors that influence the probability of paying dividends in the financial and non-financial firms reveal that there are three common factors. These factors are profitability, size, and business risk. Leverage, government ownership, and age have a strong impact on the decision to pay dividends for non-financial firms and no effect on financial firms. On the other hand, agency costs, tangibility, and growth do not appear to have any impact on both financial and non-financial firms. As mentioned previously, the fact that we find agency

[9] Probit models do not lend themselves to the inclusion of fixed effects. In this vein, Baltagi (1995) notes that "... the Probit model does not lend itself to a fixed effects treatment." Similarly, Maddala (1987, p.285) states that "the fixed effects Probit model is difficult to implement computationally."

[10] We also estimate a random effects Probit regression and find similar results to those obtained using Probit regression.

cost is not important driver of Omani firm's dividend policy is not surprising since Omani firms have high bank loans which reduce the role of dividends in alleviating agency problems.

In sum, the factors that influence the amounts of dividends are the same factors that drive the decision to pay dividends for both financial and non-financial firms.

6. The Lintner Model[11]

In a well cited study, Lintner (1956) develops a quantitative model to test for the stability of dividend policy where he hypothesizes the following relationship between dividends and earnings:

$$D^*_t = rE_t, \quad (2)$$

Where:

D^*_t = Target level of dividends for any year *t*;

r = Target payout ratio; and

E_t = Firm's net earnings in year *t*.

In addition, Lintner (1956) also predicts that a firm will only partially adjust to the target dividend level in any given year, so the change in dividend payments from year *t-1* to year *t* is given by:

$$D_t - D_{t-1} = \alpha + c(D^*_t - D_{t-1}) + u_t \quad (3)$$

Where:

c = Speed of adjustment coefficient;

D^*_t = Target dividend payment in period *t*; and

D_t = Actual dividend payment in period *t*.

Substituting rE_t for the target dividend payment (D^*_t) in equation (3), we arrive at the following model,

$$D_t - D_{t-1} = \alpha + \beta_1 E_t + \beta_2 D_{t-1} + u_t \quad (4)$$

[11] Linter (1956) studies the dividend patterns of 28 well-known, established companies in the U.S. He reports evidence that firms maintain target dividend payout ratio and adjust their dividend policy to this target. He also documents that firms pursue a stable dividend policy and gradually increase dividends given the target payout ratio. Recently, Brav et al. (2005) survey 384 financial executives and conduct in-depth interviews with an addition 23 to determine the factors that influence dividend policy and share repurchase decisions. Their results "indicates that maintaining the dividend level is a priority on par with investment decisions…In contrast to Lintner's era, we find that the target payout ratio is no longer the preeminent variable affecting payout decisions".

Where:

$\beta_1 = cr$; and

$\beta_2 = -c$.

The constant term (α) is expected to have a positive sign "to reflect the greater reluctance to reduce than to raise dividends" Lintner (1956, p.107). The speed of adjustment coefficient (c) reflects that stability of dividends and measures the speed of adjustment toward the target payout ratio (r) in response to earnings changes. The value c reflects the dividend smoothing behaviour of firms to changes in the level of earnings. A higher value of c indicates less dividend smoothing and vice versa. Thus, a conservative firm will have a lower adjustment rate, while a less conservative firm will have a higher adjustment rate.

As shown by Lintner, equation (4) can be rewritten as:

$$D_t = \alpha + crE_t + (1-c)D_{(t-1)} + u_t \qquad (5)$$

This model implies that firms set their dividends in accordance with current level of earnings, and that changes in dividends do not correspond exactly with the changes in earnings.

To test whether dividend policy in Oman is stable, we follow Fama and Babiak (1968) and use earnings per share (EPS) and dividends per share (DPS) rather than total earnings as follows:

$$DPS_t = \alpha + \beta_1 DPS_{t-1} + \beta_2 EPS_t + u_t \qquad (6)$$

Where:

DPS_t = Dividend per share for period t, and

EPS_t = Earnings per share for period t.

Fama and Babiak argue that per share data are more appropriate for this test than the aggregate data used by Lintner. Indeed, almost all studies conducted since Lintner's study employ per share data rather than aggregate data. This model has been used by many scholars to examine the stability of dividends such as Brittan (1964, 1966), Fama and Babiak (1968), Fama (1974), Dewnter and Warther (1998), Adaoglu (2000), Aivazian et al. (2003a), Omet (2004), Naceur et al. (2005), among others.

Omani firms frequently change their dividends (Al-Yahyaee et al. (2006)). In this section, we examine the stability of dividend behaviour in Oman using the Lintner model. Since there are some firms in Oman that do not pay dividends, a censoring problem arises, which we

address by using a Tobit model (as in Anderson (1986), Kim and Maddala (1992), and Huang (2001a, 2001b)).[12]

6.1. Empirical Results for the Lintner Model[13]

We estimated the Lintner model for both financial and non-financial firms.[14] For both, we find the lagged *DPS* and *EPS* are statistically significant with a positive sign. The constant term for both financial and non-financial firms is negative and significant indicating that Omani firms are not reluctant to cut dividends.[15] The major results obtained from the analysis are that the speed of adjustment differs substantially between financial and non-financial firms. While we find that non-financial firms adopt a policy of smoothing dividends, this is not the case for financial firms. In fact, we find that financial firms do not have a stable dividend policy.[16] We evaluated the explanatory power of the model via the Wald test and we find that for both financial and non-financial firms the chi-square is significant at the 1 percent level. We next review the Lintner model for financial and non-financial firms in more detail.

6.1.1. Non-Financial Firms

The results presented in Table 10 show that both the coefficients on lagged *DPS* and *EPS* are statistically significant with a positive sign. But the generally higher coefficient and the associated *t*-statistic of the lagged *DPS* imply the greater importance of past dividend in deciding the dividend payment. These results are consistent with Lintner and suggest that the lagged *DPS* and *EPS* are important factors that affect the decision to pay dividends. The coefficient on the

[12] We also use a random effects Tobit regression. The Tobit and random effects Tobit results are very similar for financial firms. For non-financial firms, the random effects Tobit regression shows a more rapid speed of adjustment than the Tobit. Still, the results indicate that the lagged dividend per share is more important than the current earnings per share in determining the current dividend per share.

[13] Several studies report evidence that supports Lintner's (1956) behavioural model such as Fama and Babiak (1968), Baker et al. (1985), Baker and Powell (1999). Benartzi et al. (1997, p.1032) conclude that "…Lintner's behavioral model of dividends remains the best description of the dividend setting process available".

[14] Lintner's model has been used by many studies in different countries including Chateau (1979) in Canada, Shevlin (1982) in Australia, McDonald et al. (1975) in France, Leither and Zimmermann (1993) in West Germany, UK, France, and Switzerland, Ariff and Johnson (1994) in Singapore, Lasfer (1996) in UK, Dewenter and Warther (1998) in Japan and US, Adaoglu (2000) in Turkey, Pandey (2003) in Malaysia, Stacescu (2004) in Switzerland, Naceur et al. (2005) in Tunisia, and Al-Malkawi (2005) for Jordan.

[15] The negative constant reported in this paper is consistent with the results documented by Kim and Maddala (1992), Huang (2001a, 2001b), and Al-Malkawi (2005) who utilize Tobit regression to estimate the Lintner model.

[16] Aivazian et al. (2006) show that the type of corporate debt plays an important role in determining a firm's dividend policy. In particular, they find that firms with access to public debt market are more likely to pay dividends and subsequently to follow a smoothing dividend policy than firms that rely on bank debt.

constant is also statistically significant with a negative sign. This indicates that Omani firms are not reluctant to cut dividends, inconsistent with Lintner (1956).

The objective of using the Lintner model in this paper is to examine whether Omani firms follow stable dividend policies. Consequently, we are interested in the speed of adjustment. The speed of adjustment reflects how quickly the firms adjust dividends towards the target ratio; the higher the speed of adjustment, the less the smoothness, and the less stability in dividends. In our case, the speed of adjustment is 0.2535 which indicates that Omani *non-financial firms* do smooth their dividends. This is close to the value of 0.30 obtained by Lintner for the U.S. Recently, Brav et al. (2005) find that the mean speed of adjustment for US companies with valid Compustat data is 0.67, 0.4, and 0.33 for the 1950-1964, 1965-1983, and 1984-2002 periods, respectively. Our estimate is lower than that for the first period and close to those reported for the other two periods in Brav et al.[17]

Our result of a stable dividend policy is consistent with the results reported in several studies including Shevlin (1982), Roy and Cheung (1985), Thomson and Watson (1989), Annuar and Shamsher (1993), Leither and Zimmermann (1993), Ariff and Johnson (1994), Papaioannou and Savarese (1994), Kato and Lowentein (1995), Kester and Isa (1996), Lasfer (1996), Chiang et al. (1997), Dewenter and Warther (1998), Aivazian et al. (2003b), and Bancel et al. (2005).

Another variable of interest is whether Omani non-financial firms have a target payout ratio or not. Lintner (1956) hypothesizes that firms set a long-term target payout ratio and move gradually towards the target. We calculated the target payout ratio and find that Omani non-financial firms have a target payout ratio of 0.6970.[18] This value is higher than the 0.50 reported by Lintner for the U.S. It is also higher than the 0.459 documented by Fama and Babiak (1968).

6.1.2. Financial Firms

We re-estimate the Lintner model on our sample of financial firms. The results are reported in Table 11. Similar to the results obtained for non-financial firms, we find that the coefficient on the lagged *DPS* and *ESP* are statistically significant with a positive sign. The

[17] Likewise, our speed of adjustment is similar to the 0.25 documented by Goergen, Renneboog, and Correia da Silva (2004) for Germany. However, it is lower than the 0.66 reported by Stacescu (2004) for Switzerland. For emerging markets, our speed of adjustment is much lower than the 0.71 obtained by Pandey and Bhat (2004) for India. It is also considerably lower than the 0.52 documented by Omet (2004) for Jordan and the 1.00 reported by Adaoglu (2000) for Turkey.

[18] We calculate the target payout ratio as (the coefficient on EPS divided by the speed of adjustment).

coefficient on the constant is also significant and negative indicating that firms are not reluctant to cut dividends. However, the speed of adjustment is much higher for financial firms with a value of 0.9412. This indicates that Omani *financial firms* do not smooth their dividends. Rather, they change their dividends frequently. In short, Omani financial firms do not follow a stable dividend policy. With regard to the target payout ratio, it is around 0.5668. This finding indicates that financial firms do have a target dividend payout ratio that they move quickly towards.

In sum, there is a major difference concerning the stability of dividends between financial and non-financial firms. Financial firms do not follow a stable dividend policy while non-financial firms smooth their dividends. Regarding the reluctance to cut dividends, both financial and non-financial firms are not reluctant to cut dividends.

7. Conclusion

We investigate dividend policy in a unique environment where firms distribute almost 100% of their profits in dividends and firms are highly levered. We use a panel data on a sample of Omani firms and take account of the zero observations using Tobit and Probit models. Our study has four main objectives, namely (1) to identify the factors that determine the amount of dividends, (2) to examine the likelihood that firm's pay dividends, (3) to apply the Lintner model to test the stability of dividend policy, and (4) to outline the potential differences in dividend policy between financial and non-financial firms.

Our results show that there are some common factors that determine dividend policy for both financial and non-financial firms and there are other factors that affect only non-financial firms. Specifically, there are six determinants of dividend policy for non-financial firms, while there are only three factors that influence the dividend policy of financial firms. The common factors are profitability, size, and business risk. Government ownership, leverage, and age have a strong impact on the dividend policy of non-financial firms but no effect on financial firms. Agency costs, tangibility, and growth do not appear to have any effect on the dividend policy of either financial or non-financial firms. The fact that agency costs is not an important determinant of dividend policy is not surprising given that Omani firms are highly levered via bank debt where the role of dividends in alleviating the agency problems is less important.

Our findings for the determinants of the decision to pay dividends are consistent with those reported for the determinants of dividend policy. In particular, we find that the factors that influence the probability to pay dividends are the same factors that drive the amount of dividends paid.

With respect to the stability of dividend policy, we find that the speed of adjustment differs substantially between financial and non-financial firms. While we find that non-financial firms adopt a policy of smoothing dividends, this is not the case for financial firms. In fact, financial firms do not have stable dividend policies.

References

Adaoglu, C., 2000. Instability in the dividend policy of the Istanbul Stock Exchange (ISE) corporations: Evidence from an emerging market. Emerging Market Review 1, 252-270.

Aivazian, V., Booth, L., Cleary, S., 2003a. Dividend policy and the organization of capital markets. Journal of Multinational Financial Management 13, 101-121.

Aivazian, V., Booth, L., Cleary, S., 2003b. Do emerging markets firms follow different dividend policies from the U.S. firms? Journal of Financial Research 26, 371-387.

Aivazian, V., Booth, L., Cleary, S., 2006. Dividend smoothing and debt ratings. Journal of Financial and Quantitative Analysis 41, 439-453.

Allen, F., Bernardo, A., Welch, I., 2000. A theory of dividends based on tax clienteles. Journal of Finance 55, 2499-2536.

Al-Malkawi, H., 2005. Dividend policy of publicly quoted companies in emerging markets-The case of Jordan. Unpublished Ph.D. Dissertation, University of Western Sydney, Australia.

Al-Yahyaee, K., Pham, T., Walter, T., 2005. What are the determinants of capital structure dynamics? Evidence from a country with unique financing arrangements. Proceeding of the 18th PhD in Economics and Business Conference, University of Western Australia, Perth, Australia.

Al-Yahyaee, K., Pham, T., Walter, T., 2006. The information content of cash dividend announcements in a unique environment. Working Paper, University of New South Wales.

Anderson, G., 1986. An application of the Tobit model to panel data: Modelling dividend behavior in Canada. Working Paper No. 85-22, McMaster University.

Annuar, M., and Shamsher, M., 1993. Earnings and dividend behaviour. Journal of Social Science and Humanities 1, 171-177.

Ariff, M., and Johnson, L., 1994. Securities markets and stock pricing: Evidence from a developing market in Asia, Singapore, Sydney, and London. Journal of Social Science and Humanities 1, 171-177.

Baker, H., Farrelly, G., 1988. Dividend achievers: A behavioral look. Akron Business and Economic Review 19, 79-92.

Baker, H., Farrelly, G., Edelman, R., 1985. A survey of management views on dividend policy. Financial Management 14, 78-84.

Baker, H., and Powell, G., 1999. How corporate managers view dividend policy. Quarterly Journal of Business and Economics 38, 17-35.

Baker, H., Mukherjee, T., Paskelian, O., 2005. How Norwegian managers view dividend policy. Working Paper, University of New Orleans.

Baltagi, B., 1995. Econometric Analysis of Panel Data. John Wiley & Sons.

Baltagi, B., 2001. Econometric Analysis of Panel Data. Second Ed., John Wiley & Sons.

Bancel, F., Bhattacharyya, N., Mittoo, U., 2005. Cross-country determinants of payout policy: A survey of European firms. Working Paper, University of Manitoba.

Barclay, M., Holderness, C., Sheehan, D., 2006. Dividends and corporate shareholders. Working Paper, University of Rochester.

Barclay, M., Smith, C., Watts, R., 1995. The determinants of corporate leverage and dividend policies. Journal of Applied Corporate Finance 7, 4-19.

Bar-Yosef, S., Huffman, L., 1986. The information content of dividends: A signaling approach. Journal of Financial and Quantitative Analysis 21, 47-58.

Benartzi, S., Michaely, R., Thaler, R., 1997. Do changes in dividends signal the future or the past? Journal of Finance 52, 1007-1034.

Black, F., 1976. The dividend puzzle. Journal of Portfolio Management 2, 5-8.

Black, F., Scholes, M., 1974. The effects of dividend yield and dividend policy on common stock prices and returns. Journal of Financial Economics 1, 1-22.

Booth, L., Aivazian, V., Demirguc-Kunt, A., Maksimovic, V., 2001. Capital structure in developing countries. Journal of Finance 56, 87-130.

Bolbol, A., Omran, M., 2004. Arab stock markets and capital investment. Working Paper, Arab Monetary Fund.

Brav, A., Graham, J., Harvey, C., Michaely, R., 2005. Payout policy in the 21st century. Journal of Financial Economics 77, 483-527.

Brealey, R., Myers, S., 2003, Principles of Corporate Finance. McGraw-Hill Inc., New York, 7th ed.

Brittain, J., 1964. The tax structure and corporate dividend policy. American Economic Review 54, 272-287.

Brittain, J., 1966. Corporate dividend policy. Washington, DC: Brookings Institution.

Chateau, J., 1979. Dividend policy revisited: Within- and without-of-sample tests. Journal of Business Finance and Accounting 6, 355-372.

Chen, J., Dhiensiri, N., 2005. Determinants of dividend policy: The evidence from New Zealand. Working Paper, Massey University.

Chiang, R., Davidson, I., Ckunev, J., 1997. Some further theoretical and empirical implications regarding the relationship between earnings, dividends and stock prices. Journal of Banking and Finance 21, 17-45.

Conroy, R., Eades, K., Harris, R., 2000. A test of the relative pricing effects of dividends and earnings: Evidence from simultaneous announcements in Japan. Journal of Finance 3, 1199-1227.

DeAngelo, H., DeAngelo, L., Stulz, R., 2004. Dividend policy, agency costs, and earned equity. Working Paper, University of Southern California.

Dewenter, K., and Warther, V., 1998. Dividends, asymmetric information, and agency conflicts: Evidence from a comparison of the dividend policies of Japanese and U.S. Firms. Journal of Finance 53, 879-904.

Deshmukh, S., 2003. Dividend initiations and asymmetric information: A hazard model. Financial Review 38, 351-368.

Dickens, R., Casey, K., Newman, J., 2002. Bank dividend policy: Explanatory factors. Quarterly Journal of Business and Economics 41, 3-12.

Easterbrook, F., 1984.Two agency costs explanations of dividends. American Economic Review 74, 650-659.

Faccio, M., Lang, L., Young, L., 2001. Dividend and expropriation. American Economic Review 91, 54-78.

Fama, E., 1974. The empirical relationship between the dividend and the investment decisions of firms. American Economic Review 64, 304-318.

Fama, E., and Babiak, H., 1968. Dividend policy: An empirical analysis. Journal of American Statistical Association 63, 1132-1161.

Fama, E., French, K., 2002. Testing the trade-off and pecking order predictions about dividends and debt. Review of Financial Studies 15, 1-33.

Fazzari, S., Hubbard, R., Petersen, P., 1988. Financing constraints and corporate ınvestment. Brookings Paper for Economic Activity 1, 141-95.

Goergen, M.., Renneboog, L., Correia da Silva, L., 2004, Dividend policy of German firms: a dynamic panel data analysis of partial adjustment models. Working paper, Tilburg University.

Grullon, G., Michaely, R., Swaminathan, B., 2002. Are dividend changes a sign of firm maturity? Journal of Business 75, 387-424.

Gugler, K., 2003. Corporate governance, dividend payout policy, and the interaction between dividends, R&D, and capital investment. Journal of Banking and Finance 27, 1297-1321.

Huang, H., 2001a. Bayesian analysis of the dividend behavior. Applied Financial Economics 11, 333-339.

Huang, H., 2001b. Bayesian analysis of SUR Tobit model. Applied Economics Letters 8, 617-622.

Jensen, M., 1986. Agency costs of free cash flow, corporate finance, and takeovers. American Economic Review 76, 323-329.

Jensen, M., and Meckling, W., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of Financial Economics 3, 305-360.

Jensen, G., Solberg, D., Zorn, T., 1992. Simultaneous determination of insider ownership, debt, and dividend policies. Journal of Financial and Quantitative Analysis 27, 247-264.

Kalay, A., and Michaely, R., 2000. Dividends and taxes: A reexamination. Financial Management 29, 55-75.

Kaplan, S., Zingales, L., 1997. Do financing constraints explain why investment is correlated with cash flow? Quarterly Journal of Economics 112, 169-215.

Kato, K., and Loewenstein, U., 1995. The ex-dividend-day behavior of stock prices: The case of Japan. The Review of Financial Studies 8, 817-847.

Keim, D., 1985. Dividend yields and stock returns: Implications of abnormal January returns. Journal of Financial Economics 14, 473-489.

Kester, G., and Isa, M., 1996. Dividend policy in Malaysia: A comparative analysis. Malaysian Journal of Economic Studies 33, 33-48.

Kim, B., Maddala, G., 1992. Estimation and specification analysis of models of dividend behavior based on censored panel data. Empirical Economics 17, 111-124.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. Journal of Finance 54, 471-517.

Lang, L., Litzenberger, R., 1989. Dividend announcements: Cash flow signaling vs. free cash flow hypothesis. Journal of Financial Economics 24, 181-191.

Lasfer, M., 1996. Taxes and dividends: The UK evidence. Journal of Banking and Finance 20, 455-472.

Leither, S., and Zimmerman, H., 1993. Market value and aggregate dividends: A reappraisal of recent tests and evidence from European markets. Swiss Journal of Economics and Statistics 129, 99-119.

Lintner, J., 1956, Distribution of incomes of corporations among dividends, retained earnings, and taxes. American Economic Review 46, 97-113.

Litzenberger, R., and Ramaswamy, K., 1980. Dividends, short selling restrictions, tax-induced investor clienteles and market equilibrium. Journal of Finance 35, 469-482.

Maddala, G., 1987. Limited dependent variable models using panel data. Journal of Human Resources 22, 307-338.

Maury, C., Pajuste, A., 2002. Controlling shareholders, agency problems, and dividend policy in Finland. The Finnish Journal of Business Economics 51, 15-45.

McDonald, J., Jacquillat, B., Nussenbaum, M., 1975. Dividend, investment and financing decisions: Empirical evidence on French firms. Journal of Financial and Quantitative Analysis 10, 741-755.

Michel, A., Shaked, I., 1986. Country and industry influence on dividend policy: Evidence from Japan and the U.S.A. Journal of Business Finance and Accounting 13, 365-381.

Miller, M., 1986. Behavioral rationality in finance: The case of dividends. Journal of Business 59, 451-468.

Miller, M., and Modigliani, F., 1961. Dividend policy, growth, and the valuation of shares. Journal of Business 34, 411-433.

Miller, M., and Scholes, M., 1982. Dividend and taxes: Some empirical evidence. Journal of Political Economy 90, 1118-1141.

Naceur, S., Goaied, M., Belanes, A., 2005. A re-examination of dividend policy: A dynamic panel data analysis. Working Paper, Institut des Etudes Commerciales.

Omet, G., 2004. Dividend policy behavior in the Jordanian capital market. International Journal of Business 9, 287-299.

Pandey, I., 2003. Corporate dividend policy and behaviour: The Malaysian evidence. Asian Academy of Management Journal 8, 17-32.

Pandey, I., and Bhat, R., 2004. Dividend behaviour of Indian companies under monetary policy restrictions. Working Paper, Indian Institute of Management.

Papaioannou, G., and Savarese, C., 1994. Corporate dividend policy response to the Tax Reform Act of 1986. Financial Management 23, 56-63.

Poterba, J., and Summers, L. 1984. New evidence that taxes affect the valuation of dividends. Journal of Finance 39, 1397-1415.

Roy, S., and Cheung, J., 1985. Target payout and the association between dividends and share prices. Accounting and Finance 25, 57-76.

Rozeff, M., 1982. Growth, beta, and agency costs as determinants of dividend payout ratios. Journal of Financial Research 5, 249-259.

Sawicki, J., 2002. An investigation into the dividend of firms in East Asia. Working Paper, Nanyang Technological University.

Schooley, D., Barney, L., 1994. Using dividend policy and managerial ownership to reduce agency costs. Journal of Financial Research 17, 363-373.

Shevlin, T., 1982. Australian corporate dividend policy: Empirical analysis. Accounting and Finance 22, 1-22.

Stacescu, B., 2004. Dividend policy in Switzerland. Working Paper, Swiss Banking Institute.

Thomson, L., and Watson, R., 1989. Historic cost earnings, current cost earnings and the dividend decision. Journal of Business Finance and Accounting 16, 1-24.

Table 1. Dividend Payout Ratio for All, Financial, and Non-Financial firms over the period 1989-2004

This table presents the mean and the standard deviation for firms listed at the MSM for each year from 1989-2004. The table also shows the mean and standard deviation for financial and non-financial firms during the same period. In panel A, we present the results for all firms including both dividend paying and non-paying firms. In panel B, we report the results for dividend paying firms.

Panel A: All Firms

	All		Financials		Non-Financials	
Year	Mean	StDev	Mean	StDev	Mean	StDev
1989	42%	44%	47%	30%	40%	48%
1990	66%	205%	94%	279%	36%	42%
1991	43%	43%	49%	47%	39%	41%
1992	47%	82%	32%	39%	55%	96%
1993	134%	701%	46%	35%	171%	837%
1994	52%	85%	45%	34%	56%	98%
1995	41%	55%	49%	49%	39%	58%
1996	39%	75%	37%	35%	40%	87%
1997	32%	46%	19%	30%	37%	51%
1998	29%	177%	20%	31%	32%	206%
1999	29%	162%	25%	59%	30%	186%
2000	63%	400%	24%	49%	76%	466%
2001	35%	181%	15%	30%	42%	209%
2002	49%	249%	33%	52%	54%	289%
2003	34%	142%	60%	142%	25%	141%
2004	57%	262%	58%	139%	56%	295%
Overall period	46%	182%	41%	67%	48%	197%
Observations	1514		437		1077	

Panel B: Dividend Paying Firms

	All		Financials		Non-Financials	
Year	Mean	StDev	Mean	StDev	Mean	StDev
1989	70%	35%	60%	19%	76%	41%
1990	117%	263%	149%	343%	72%	30%
1991	71%	33%	80%	32%	66%	33%
1992	86%	94%	72%	18%	91%	111%
1993	225%	902%	65%	20%	312%	1121%
1994	90%	95%	62%	22%	106%	115%
1995	76%	54%	70%	44%	80%	60%
1996	73%	90%	58%	26%	81%	110%
1997	63%	48%	43%	32%	70%	51%
1998	159%	394%	55%	25%	281%	571%
1999	185%	378%	96%	81%	258%	504%
2000	256%	787%	70%	62%	371%	991%
2001	130%	333%	49%	37%	166%	396%
2002	122%	385%	55%	58%	166%	492%
2003	86%	218%	123%	187%	69%	232%
2004	151%	412%	138%	189%	157%	481%
Overall period	122%	283%	78%	75%	151%	334%
Observations	806		261		545	

Table 2. Descriptive Statistics for Non-Financial Firms

The table presents descriptive statistics for all non-financial firms listed at the MSM for the years 1989-2004. The observations are 1057. The variables are dividend yield (DIVYLD), dividend-to-asset ratio (DIV/TA), profitability (PROFIT), firm size (LOGS), leverage (DR), agency costs (STOCKS), business risk (DROI), government ownership (GOVOWN), maturity of the firm (AGE), tangibility (TANG), and growth opportunities (MB).

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
DIVYLD	0.0318	0.0000	0.0779	0.0000	0.7565
DIV/TA	0.0226	0.0000	0.0423	0.0000	0.2903
PROFIT	0.1137	0.0647	0.2623	-1.2994	3.4059
LOGS	6.3180	6.3845	0.7677	2.6532	8.5063
DR	0.6380	0.5641	0.5975	0.0003	8.1240
STOCKS	2.5045	2.4829	0.5877	0.6990	4.4273
DROI	0.0599	0.0208	0.1315	0.0000	1.5080
GOVOWN	0.1608	0.0000	0.3676	0.0000	1.0000
AGE	9.7133	8.0000	7.1324	0.0000	30.0000
TANG	0.3591	0.2816	0.4415	0.0000	0.9521
MB	1.5475	1.2844	4.2188	-33.2831	49.2872

Table 3. Descriptive Statistics for Financial Firms

The table presents descriptive statistics for all financial firms listed at the MSM for the years 1989-2004. The observations are 413. The variables are dividend yield (DIVYLD), dividend-to-asset ratio (DIV/TA), profitability (PROFIT), firm size (LOGS), leverage (DR), agency costs (STOCKS), business risk (DROI), government ownership (GOVOWN), maturity of the firm (AGE), tangibility (TANG), and growth opportunities (MB).

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
DIVYLD	0.0339	0.0000	0.0582	0.0000	0.6940
DIV/TA	0.0178	0.0000	0.0296	0.0000	0.1694
PROFIT	0.0519	0.0450	0.2299	-1.1177	3.1833
LOGS	6.3609	6.4294	0.8510	2.5855	8.0593
DR	0.6266	0.5982	0.8276	0.0010	9.1872
STOCKS	2.7932	2.8633	0.5521	1.1139	4.4760
DROI	0.0769	0.0134	0.2837	0.0000	5.0525
GOVOWN	0.1501	0.0000	0.3576	0.0000	1.0000
AGE	9.4165	7.0000	7.1388	0.0000	31.0000
TANG	0.0365	0.0033	0.1316	0.0000	0.9273
MB	1.4082	1.0848	2.3499	-14.7437	31.3345

Table 4. Number and Fraction of Non-Financial Firms Paying Dividends

The table presents the number of firms that pay dividends (and the percentage of firms that pay dividends) as well as the number of firms that do not pay dividends (and the percentage of firms that do not pay dividends) for all non-financial firms listed at the MSM for each year from 1989-2004.

Year	No Dividend	Percentage	Dividend	Percentage	Total
1989	16	0.4848	17	0.5152	33
1990	16	0.5000	16	0.5000	32
1991	14	0.4118	20	0.5882	34
1992	14	0.4000	21	0.6000	35
1993	18	0.4500	22	0.5500	40
1994	21	0.4773	23	0.5227	44
1995	29	0.5179	27	0.4821	56
1996	30	0.5085	29	0.4915	59
1997	23	0.3651	40	0.6349	63
1998	60	0.6522	32	0.3478	92
1999	60	0.6000	40	0.4000	100
2000	59	0.5900	41	0.4100	100
2001	51	0.5313	45	0.4688	96
2002	50	0.5319	44	0.4681	94
2003	35	0.3846	56	0.6154	91
2004	30	0.3409	58	0.6591	88
Observations	526		531		1057

Table 5. Number and Fraction of Financial Firms Paying Dividends

The table presents the number of firms that pay dividends (and the percentage of firms that pay dividends) as well as the number of firms that do not pay dividends (and the percentage of firms that do not pay dividends) for all financial firms listed at the MSM for each year from1989-2004.

Year	No Dividend	Percentage	Dividend	Percentage	Total
1989	3	0.2143	11	0.7857	14
1990	5	0.2941	12	0.7059	17
1991	7	0.3889	11	0.6111	18
1992	10	0.5556	8	0.4444	18
1993	5	0.2941	12	0.7059	17
1994	5	0.2778	13	0.7222	18
1995	6	0.2727	16	0.7273	22
1996	10	0.3846	16	0.6154	26
1997	13	0.4643	15	0.5357	28
1998	12	0.3529	22	0.6471	34
1999	15	0.4054	22	0.5946	37
2000	17	0.4857	18	0.5143	35
2001	18	0.5294	16	0.4706	34
2002	8	0.2424	25	0.7576	33
2003	6	0.2000	24	0.8000	30
2004	16	0.5000	16	0.5000	32
Observations	156		257		413

Table 6. Tobit Regression for the Determinants of Dividend Policy for Non-Financial Firms

We estimate Tobit regressions for all non-financial firms listed at the MSM during 1989-2004. The dependent variables are the dividend yield and the dividend-to-asset ratio. The explanatory variables are the profitability (PROFIT), firm size (LOGS), leverage (DR), agency costs (STOCKS), business risk (DROI), government ownership (GOVOWN), maturity of the firm (AGE), tangibility (TANG), and growth opportunities (MB). The table shows the variable, their coefficients, and their corresponding *t*-statistics.

Variable	Dividend Yield		Dividend-to-Asset Ratio	
	Coefficient	T-Statistic	Coefficient	T-Statistic
C	-0.5147***	-7.8937	-0.2648***	-7.8420
PROFIT	0.1128***	2.7588	0.0947***	4.5006
LOGS	0.0898***	7.8297	0.0434***	7.3029
DR	-0.0823***	-3.9707	-0.0677***	-5.9694
STOCKS	-0.0338	-1.4866	-0.0052	-0.8543
DROI	-0.4370***	-4.6890	-0.2529***	-5.2399
GOVOWN	0.0008**	2.0981	0.0003*	1.6406
AGE	0.0016*	1.7280	0.0015***	3.1758
TANG	-0.0199	-1.2222	-0.0116	-1.3573
MB	-0.0008	-0.4706	0.0010	1.2529
No of Observations		1,057		1,057
Log Likelihood		-102.8745		123.5742
Wald Test [χ^2 (9)][a]		214.3100		291.7900
P-value		0.0000		0.0000

*, **, and *** represents significance at the 10, 5, 1 percent levels, respectively.

[a] The number in parenthesis is the degrees of freedom.

Table 7. Tobit Regression for the Determinants of Dividend Policy of Financial Firms

We estimate Tobit regressions for all financial firms listed at the MSM during 1989-2004. The dependent variables are the dividend yield and the dividend-to-asset ratio. The explanatory variables are the profitability (PROFIT), firm size (LOGS), leverage (DR), agency costs (STOCKS), business risk (DROI), government ownership (GOVOWN), maturity of the firm (AGE), tangibility (TANG), and growth opportunities (MB). The table shows the variable, their coefficients, and their corresponding t-statistics.

Variable	Dividend Yield		Dividend-to-Asset Ratio	
	Coefficient	T-Statistic	Coefficient	T-Statistic
C	-0.2621***	-4.8914	-0.1003***	-3.3994
PROFIT	0.1958***	3.3637	0.2004***	5.6068
LOGS	0.0446***	4.5957	0.0191***	3.6007
DR	-0.0035	-0.5396	0.0002	0.0459
STOCKS	-0.0110	-0.9763	-0.0090	-1.4456
DROI	-0.2298***	-2.8843	-0.1384***	-3.0355
GOVOWN	0.0001	0.2748	-0.0001	-0.3533
AGE	0.0009	1.0127	-0.0006	-1.2642
TANG	-0.0733	-1.3227	-0.0449	-1.4645
MB	-0.0009	-0.3848	0.0027	1.2238
No of Observations		413		413
Log Likelihood		75.8372		158.1734
Wald Test [χ^2 (9)][a]		97.0100		101.2400
P-value		0.0000		0.0000

*, **, and *** represents significance at the 10, 5, 1 percent levels, respectively.

[a] The number in parenthesis is the degrees of freedom.

Table 8. Probit Regressions to Explain Which Non-Financial Firms Pay Dividends

We estimate Probit regressions for all non-financial firms listed at the MSM during 1989-2004. The dependent variable is a binary variable that equals to one if the firm pays dividends and zero otherwise. The explanatory variables are the profitability (PROFIT), firm size (LOGS), leverage (DR), agency costs (STOCKS), business risk (DROI), government ownership (GOVOWN), maturity of the firm (AGE), tangibility (TANG), and growth opportunities (MB). The table shows the variable, their coefficients, and their corresponding *t*-statistics.

Variable	Coefficient	T-Statistic
C	-4.0045***	-8.9004
PROFIT	0.7110**	2.5546
LOGS	0.6858***	8.5343
DR	-0.9218***	-6.0088
STOCKS	-0.1319	-1.5297
DROI	-3.6518***	-5.4014
GOVOWN	0.0054*	1.7301
AGE	0.0222***	3.3317
TANG	-0.1523	-1.3056
MB	-0.0003	-0.0234
No of Observations		1,057
Log Likelihood		-537.3487
Wald Test [χ^2 (9)][a]		295.3000
P-value		0.0000

*, **, and *** represents significance at the 10, 5, 1 percent levels, respectively.

[a] The number in parenthesis is the degrees of freedom.

Table 9. Probit Regressions to Explain Which Financial Firms Pay Dividends

We estimate Probit regressions for all financial firms listed at the MSM during 1989-2004. The dependent variable is a binary variable that equals to one if the firm pays dividends and zero otherwise. The explanatory variables are the profitability (PROFIT), firm size (LOGS), leverage (DR), agency costs (STOCKS), business risk (DROI), government ownership (GOVOWN), maturity of the firm (AGE), tangibility (TANG), and growth opportunities (MB). The table shows the variable, their coefficients, and their corresponding *t*-statistics.

Variable	Coefficient	T-Statistic
C	-2.6748***	-4.1903
PROFIT	2.2372***	3.4718
LOGS	0.5411***	4.6679
DR	0.0644	0.6742
STOCKS	-0.2596	-1.5432
DROI	-2.2082***	-2.6152
GOVOWN	0.0087	1.1521
AGE	-0.0055	-0.4975
TANG	-0.9364	-1.4410
MB	0.0041	0.1552
No of Observations		413
Log Likelihood		-238.4264
Wald Test [χ^2 (9)][a]		95.5700
P-value		0.0000

*, **, and *** represents significance at the 10, 5, 1 percent levels, respectively.

[a] The number in parenthesis is the degrees of freedom.

Table 10. Lintner Model Estimates for Non-Financial Firms

We estimate Tobit regression for all non-financial firms listed at the MSM over the period 1989-2004. The dependent variable is the dividend per share. The explanatory variables are the lagged DPS and the current EPS. The table shows the variable, their coefficients, and their corresponding *t*-statistics.

Variable	Coefficient	T-Statistic
C	-0.4121***	-13.1435
DPS_{-1}	0.7465***	14.6388
EPS	0.1767***	6.4442
No of Observations		969
Log Likelihood		-579.9871
Wald Test [χ^2 (2)][a]		238.0600
P-value		0.0000

*, **, and *** represents significance at the 10, 5, 1 percent levels, respectively.
[a] The number in parenthesis is the degrees of freedom.

Table 11. Lintner Model Estimates for Financial Firms

We estimate Tobit regression for all financial firms listed at the MSM over the period 1989-2004. The dependent variable is the dividend per share. The explanatory variables are the lagged DPS and the current EPS. The table shows the variable, their coefficients, and their corresponding *t*-statistics.

Variable	Coefficient	T-Statistic
C	-0.1457***	-7.3644
DPS_{-1}	0.0588***	2.7855
EPS	0.5335***	46.8658
Observations		377
Log Likelihood		-142.8506
Wald Test [χ^2 (2)][a]		509.3700
P-value		0.0000

*, **, and *** represents significance at the 10, 5, 1 percent levels, respectively.
[a] The number in parenthesis is the degrees of freedom.