Firm Characteristics and Dividend Payment Choices

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ABSTRACT

This study investigates the relationship between financial measures and dividend payout policy choices of firms. We examine why firms choose to pay dividends continuously, intermittently, or not pay them. Specifically, the findings provide evidence that firms with relatively larger debts tend to pay dividends less frequently than firms with smaller debts. The results also suggest that good financial performers are more likely to pay dividends more regularly. Additionally, the results of this study indicate that highly leveraged firms tend to make less frequent payouts than lowly leveraged firms. Overall, this research adds to our understanding of firms’ dividend payout policy choices. First, evidence on the relationship between the various types of financial and firms’ choice of dividend payout frequencies should be useful to investors. Second, the findings of this study provide financial statement users with useful information about the firm’s dividend payout patterns. Third, in general, it also adds to the accounting literature on dividends.
1. Introduction

Dividends seem to be one of the important factors for investors. Some investors look for dividend-paying stocks (Baker and Wurgler 2004). In general, investors like dividends. Some previous studies identify that investors like to see the same amount of dividends or increase over time. Tse (2005) suggests that dividends are used to signal firms’ future prospects. Dividend payout patterns have been examined in some international business context and managers’ behavioral aspects.

However, none of the prior studies examined the relationship between dividend paying pattern and firm characteristics such as debt to equity ratio, return on assets, investment decision makers and so on.

This study investigates the relationship between financial measures and dividend payout policy choices of firms. We examine why firms choose to pay dividends continuously, intermittently, or not pay them. Specifically, the findings provide evidence that firms with relatively larger debts tend to pay dividends less frequently than firms with smaller debts.

2. Literature Review

The findings of Haw and Kim (1991) are that there is a negative correlation relationship that exists between firm size and the extent of abnormal returns around the dividend announcement date. Higgins (1974) in his research tackles growth and dividend policy along with the capital costs. These are significant and central to modern valuation techniques. He derives and tests a finite growth model for the electric utility industry, in order to precisely reflect that present value of future investment. The results of this study seem to conclude that the primary attention for valuation has to be focused on the cost of capital to the industry. By doing this, his result in his empirical tests showed that there is a correlation between the sizes of the dividend on the cost of capital, which effects overall equity share valuation.
Michel’s study (1979) examines the relationship between dividend policy and the firm valuation. His findings show that industry classification does relate to the level of dividends.

Taksar and Zhou (1998), consider the implications a dividend can have for a firm that has a moderate to high debt liability. Their Optimal Dividend pay-out policy shows that a firm should keep their Dividend Policy to a certain optimal level that is in line with the methodology they used.

For the Biotech Industry, academic research shows dividends account for half of the annual long-term gains for the biotech’s found on the S & P 500. In 2003, the average Biotech slashed their dividends by an average of 68%. This move was in an effort to conserve cash. This move was in part because of two major reasons. The first was because none of the major bio-techs (the largest 10 make up about 90% of the market share) had new any new developments in the pipeline. So in order to increase R & D spending that those majors were forced to slash dividends to come up with the next big Biotech innovation.

Porta, Silanes, Shleifer, Vishny, (2000) in their research go after trying to test two agency models of dividends. They use the “outcome model” to show how minority shareholders pressure the insiders of a corporation to expel cash. The other model they use is that “substitute model,” where interested insiders usually issue equity in the future dividends to establish a reputation for better treatment of the minority shareholders. This study consisted of cross-testing 4000 companies from 33 countries. There were many legal ramifications that both models have, when implemented, and the two views are even in how they are effected the laws. In the end, they find no conclusive evidence on the effect that would favor one method against the other. However, they did find an influencing factor that would favor one vs. the other is the tax policy, but it is also is factored on the region as well.

Dempsey (1993) examines dividends how their relevancy in financial theory. They believe that having a dividend policy is first of irrelevant in a perfect capital market. But because of the presence of taxes and transaction costs the permit of a dividend by a firm is regarded as a solid
return. As you go across Industry, you can see that there is a strong correlation to stable cash flows and the size of the dividend yield. With utilities and telecommunications having the highest dividends yields, but also showing the lowest growth rates. When you look at other industries, for example Bio-Tech Technology, it is apparent that the growth rates have been quite rewarding for the share price, but less than 25% of the firms pay dividends. This has a correlation to where the business is in the lifecycle as well. More mature companies will pay dividends, however, there will relatively be stable and not change much to the upside or downside. Their results, when look at over all, suggest that although dividend policy is a part of finance that is interpreted in many ways, you can see empirical irregularities when crossing industries, but you also do see many regularities when you attribute firms’ age across all industries.

Based on the theoretical discussion in this section, we present our hypotheses in the next section.

3. Research Methods

3.1. Hypotheses

Dividend payments give rise to firms’ financial burden as they require additional cash outflows. Accordingly, companies with a higher debt equity ratio are more likely to pay dividends less frequently (or less regularly) than those with a lower ratio, which can be hypothesized as follows (stated in the alternative form):

H1: Firms with greater debt equity ratios are less likely to pay dividends regularly.

It is expected that the better a firm’s financial performance, the more likely it is to pay dividends continuously. This argument leads to the following hypothesis:

H2: The firms with better financial performances are more likely to pay dividends continuously.
Return on equity (ROE) is used as a proxy for a firm’s financial performance, or more directly as a measure of a firm’s ability to internally finance its funding needs.

External stockholders’ pressures on continuous dividend payments due to their expectation on regular cash inflows leads to the following hypothesis:

H3: The higher number of stockholders the firm has, the more likely it pays dividends regularly.

The higher market value to book value of the firm is, the more frequently and consistently pay dividends since the firm is more likely to satisfy the investors in the stock markets.

H4: The higher market to book value firm has, the more likely it pays dividends regularly.

The higher the sales are, the firm is more likely to pay dividends regularly as it has more financial resources.

H5: The higher the firm’s sales are, the more likely it pays dividends regularly.

Institutional investors play more significant roles than individual investors in the financial markets. The management may feel more pressure from these institutional investors on their dividend payout policy choices. Hence, the following hypothesis is form, accordingly.

H6: The higher number of institutional investors, the more likely the firm choose continuous dividend payout policies.

3.2. Empirical Models

The primary focus of our research is the investigation of underlying determinants of firms’ dividend payout policies and practices. To test our hypotheses, we use factor analysis model and/or N-probit analyses to determine the association between the choice of dividend policy and
firm variables when all variables are considered simultaneously. The coefficients of independent variables from the model (presented below) and their significance levels are used to test our hypotheses.

Examining their financial statements identifies firms’ dividend payout policy choices. Their policy choices are coded on a weighted basis. More specifically, the choices are classified as follows:

0 --- No dividend payout
1 --- Irregular dividend payouts
2 --- Less regular dividend
3 --- Continuous payments

To examine the relationship between dividend payout choices and firm characteristics, the following equation is employed in the analysis.\(^5\)

\[
\text{LEVEL}_{it} = a_0 + a_1 \text{DE}_{it} + a_2 \text{ROE}_{it} + a_3 \text{CSH}_{it} + a_4 \text{MB}_{it} + a_5 \text{SALES}_{it} + a_6 \text{INSTO}_{it} \quad (1)
\]

(predicted signs) (-) (+) (+) (+) (+) (+)

where:

\(\text{LEVEL}_{it}\) = a firm’s dividend payout choices,
\(\text{DE}_{it}\) = leverage (debt/equity),
\(\text{ROE}_{it}\) = financial performance measured by ROE,
\(\text{CSH}_{it}\) = the number of common stockholders,
\(\text{MB}_{it}\) = market to book value of the firm
\(\text{INSTO}_{it}\) = the number of institutional investors,

3. Sample Selection and Data Collection

To be included in the sample all of the following conditions must have been satisfied:

1. The firm must be included in Fortune 500 companies in the year of 1985.
2. Financial data for the firm must be available on COMPUSTAT database for the years 1985-2005.

The time period of 1988-1994 is chosen due to the availability of the databases.

4. Empirical Results

4.1. Descriptive Statistics

Panel A in Table 1 presents the sample selection procedures which resulted in a final sample of 124 firms based on the availability of data items for this study. Initially, Fortune 500 companies are selected as they are representing most of the industries. There are 348 companies whose dividend payment data is available for the time period of 1986-2005. Research Insight data availability further limits the sample to 124.

Table 2 shows descriptive statistics for the dependent and independent variables used in the N-probit analysis for hypotheses H1 to H4. Two hundred twenty six firm/year observations are excluded from the sample. These firms have negative equity which produces negative return on equity and debt/equity ratios used in equation (1). The firm’s debt to (DE) ranges from 0 to 30282. The mean score for DE is 91.963 indicating that most sample firms depend on debt financing. The dependent variable, level, has a mean of 2.56 which indicates most companies pay dividends regularly every year.

The Pearson correlation coefficients for the variables in model (1) are reported in Table 3. The coefficient values range from -0.3452 to 0.1760. This indicates that multicollinearity is not a problem.
The largest correlation is between DE and ROE (-0.34825), which is quite normal considering that both of these measures include the same variable, equity.

4.2. Probit Analysis for Hypotheses (H1-H4)

The relationship between the firm’s choices for paying dividends annually and its characteristics is examined using N-Probit analysis. Probit analysis is a statistical procedure that analyzes binary response variables within the linear regression framework. N-Probit allows the dependent variable to take multiple (N) discrete values. One of the advantages of N-Probit analysis is that it provides a direct statistical test of the coefficients of the individual independent variables (Zmijewski and Hagerman 1981). Table 4 reports the results from estimating equation (1) on the sample firms.

The coefficient for the dividend payment level (LEVEL) and debt to equity ratio (DE) is significant (H1). The coefficient for financial performance (FNPERM) proxied by ROE is significant at p=0.003 but in the opposite direction (H2). The coefficient for common stock outstanding (CSH) is not significant (H3) and the coefficient for market to book ratio (MB) is not significant although they are in the proper direction (H4). The coefficient for sales (SALES) is significant and in the proper direction (H5). The institutional investors variable (INSTO) is significant with its coefficient sign in the proper direction (H6).

5. Conclusions
The results of our study provide some support for the proposed hypotheses regarding the relationship between firm characteristics and dividend payment patterns. Specifically, our findings provide evidence that firms having a higher amount of debts tend to pay less dividends (H1).

Our study indicates that companies whose return on equity (ROE) are high tend to make less frequent dividend payouts than those with low ROE (H2). It is also suggested that firms with higher sales tend to make more frequent dividend payouts than those with lower sales (H5). Additionally, the results indicate that the more the number of institutional stockholders, the more frequently they are to pay dividends. The evidence is in agreement with the notion that managers are concerned with stock market participants’ expectations on dividends.

Finally, the lack of support for hypotheses H3 and H4 could reflect that, in general, the number of common stockholders and market to book ratio variables are too broad to impact a firm’s choice of dividend payment frequency. More refined measures could potentially capture the impact of these variables on a firm’s dividend policy choices. To summarize the testing of the hypotheses, hypotheses 1, 2, 5 and 6 have strong support from the empirical results whereas hypothesis 4 and 5 are not supported.

Overall, our research adds to the understanding of firms’ dividend policy choices. Our study documents the association between firms' dividend payment decisions and their firm characteristics. The findings are important for several reasons. First, evidence on the relationship between various types of financial and dividend paying patterns, and a firm’s choice of dividend payment frequencies should be useful to policy makers and investors interested in assessing the incremental relevance of firm characteristics.

Second, our study provides financial statement users with useful information about firm characteristics. By understanding which characteristics influence a firm’s choice of dividend payment policies, investors should be able to make more relevant and reliable investment
decisions. It also may enable investors to make better judgments regarding the future performance of the firm. Finally, our study adds to the body of knowledge about dividend payout.

**Future Research and Limitations**

The results provide strong support for most of the proposed hypotheses and suggest that additional research in the area of stock market-related data items is warranted. The use of more refined data about the number of common stockholders and market value vs. book value along with extended analyses periods would increase the external reliability of the findings. Extensions also could include more data items such as industry effects, managers’ incentives, and corporate structure.

The limitations of our study are related primarily to the assumptions on which the models are based and the measurement error associated with variables.
References


Table 1. Sample Selection

<table>
<thead>
<tr>
<th>SELECTION CRITERION</th>
<th>Firm/Year Observations</th>
</tr>
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<tbody>
<tr>
<td>Fortune 500 companies</td>
<td>500</td>
</tr>
<tr>
<td>Availability of 20 years’ dividend data</td>
<td>348</td>
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<td>Availability of COMPUSTAT data</td>
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<td><strong>Total</strong></td>
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### Table 2. Descriptive Statistics

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<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
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<td>3.0000</td>
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**Variable Definitions**

- **LEVEL** = level of dividend payout frequency
- **DE** = leverage (debt/equity)
- **ROE** = financial performance measured by ROE
- **CSH** = the number of common stockholders
- **MB** = market to book value
- **SALES** = total sales
- **INSTO** = the number of institutional investors
### Table 3. Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>DE</th>
<th>ROE</th>
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<th>MB</th>
<th>SALES</th>
<th>INSTO</th>
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<td>-0.03436</td>
<td>0.03089</td>
<td>0.00213</td>
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<tr>
<td></td>
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<td>0.6178</td>
<td>.1490</td>
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<td>-0.03579</td>
<td>-0.12199</td>
<td>1.00000</td>
</tr>
</tbody>
</table>

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Table 4. N-Probit Analysis

Panel A:

<table>
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<tr>
<th>Variable</th>
<th>Expected Sign</th>
<th>0.7447**</th>
<th>0.0003**</th>
<th>-0.0033**</th>
<th>0.0006</th>
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<th>0.0031*</th>
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<td>INTERCEPT</td>
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Pseudo $R^2 = 0.0744$

Probit Analysis $\chi^2$ (d.f. = 12) = 80.0416**

Chi-squares are shown in parentheses.
*** Statistically significant at p < 0.01 (one-tailed)
** Statistically significant at p < 0.05 (one-tailed)
* Statistically significant at p < 0.10 (one-tailed)

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