Catering effects in corporate dividend policy: The international evidence

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Abstract

This study tests for the international presence of dividend catering across a sample of twenty-three countries. We find evidence of catering among firms incorporated in common law countries but not for those in civil law nations. Catering persists even after controlling for the effect of the firm's lifecycle. We conclude that when the legal regime and its accompanying set of investor protections permit, investors force dividends from managers, but they also attempt to extract such payouts indirectly by placing a high value on dividend paying firms. The relative failure of civil law firms to cater might be explained by idiosyncratic behaviors in the consumption of the private benefits of control or a lack of interest in responding to temporary market misevaluations of their equity.

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1. Introduction

The catering theory of dividends developed by Baker and Wurgler (2004a) argues that managers will opportunistically modify corporate payout policies when investor sentiment favors the payment of dividends. In a subsequent paper, Baker and Wurgler (2004b) provide a catering explanation for the unexpected reductions in the percent of dividend paying firms within the U.S. Li and Lie (2006) provide further confirmation of catering effects among U.S. firms through an examination of changes in corporate payout ratios and their relation to the market dividend premium.

The evidence regarding the international presence of dividend catering, however, is limited and mixed in its findings. Ferris, Sen and Yui (2006) investigate dividend policy in the U.K. and conclude that a shift in catering incentives most likely explains the declining propensity to pay dividends over the 1998-2002 sub-period. Eije and Megginson (2008) study fifteen European countries over the 1989-2003 period and fail to find evidence of catering in their sample. Yet, their findings are best viewed as inconclusive since their regression specifications are substantially different from those estimated by Baker and Wurgler (2004b). In a study of six countries, Denis and Osobov (2008) report that some of their findings appear inconsistent with dividend catering. Specifically, they report that unexpected reductions in the percent of dividend payers occur in countries where the dividend premium is largely positive. They also find that those reductions are mostly driven by lower rates of dividend initiations by newly listed firms. They do not, however, formally test for the presence of dividend catering.

In this study we attempt a more ambitious analysis of international catering by examining a dataset of 23 countries over the 1995-2004 sample period. The broad cross-section of our sample includes both common and civil law countries which allows us to investigate the extent

to which differences in the level of shareholder protection might influence the supply of dividends provided by corporate managers. Further, the ten years of time-series data permits us to examine changing values of the market dividend premium and thereby determine the extent to which catering might influence global dividend policies.

We find that there are important cross-sectional differences in the ability of dividend catering to explain the decision of firms to pay dividends. Shareholders of firms located in common law countries typically enjoy a wider set of rights and protections, thus making it easier for them to discipline managers who fail to satisfy investors. As a consequence, the managers of firms incorporated in common law regimes must be more responsive to investors if they wish to remain employed. Indeed, the 2003 decision by Microsoft to pay dividends is an outstanding example of the ability of common law shareholders to force the disgorgement of cash by corporate managers. More recently, Comcast announced in early 2008 that it would start paying a $0.25 per share dividend after not paying dividends since 1999 in response to shareholder desire for the return of more cash.

As originally reported by La Porta et al. (1997), shareholders in civil law countries enjoy fewer investor protections than shareholders of firms incorporated in common law countries. La Porta et al. (1999, 2000), Denis and McConnell (2003), and others, observe that this legal enfeeblement of shareholders produces an agency conflict between the firm's large blockholders who are most typically insiders, and minority shareholders. These insiders can both discipline corporate managers and exploit the minority shareholders. The weaker catering we find among civil law firms seems to suggest that these controlling shareholders are less interested in exploring transitory market misvaluations of their firm's stock due to dividend policy. Perhaps

they are unable to exploit these misevaluations because of illiquidity in their home stock market or the presence of a wedge between the block and market prices for their equity.

We organize the remainder of this paper as follows. In section two we review our various data sources and the methodology employed for our sample construction. Section three contains a description of the sample characteristics. In section four we present our major empirical results while section five explores the robustness of our findings. We conclude with a brief summary and discussion of our results in section six.

2. Data and sample construction

The data used in this study are obtained from several sources. We obtain annual financial and accounting data from the Compustat Global databases. Specifically, share price and the number of shares outstanding are from the Compustat Global Issues database and the other financial and accounting data such as assets, equity, dividends paid, etc. are from the Compustat Global Industrial database. The legal regime for our sample countries is identical to the classifications reported by La Porta et al. (1998).

We begin our analysis by selecting as our sample period the 10-year period beginning in 1995 and concluding in 2004. The financial variables included in the regression analyses are based on the fiscal year immediately prior to the year of dividend payment or nonpayment. Therefore, the regression analyses are based on dividend behavior during the 9-year period of 1996-2004.

The construction of our sample set of firms is accomplished in several steps. First we identify our sample countries. Consistent with La Porta et al. (2000), we exclude socialist or former socialist countries, Luxembourg, and countries with mandatory dividend policies as well as Bermuda and the Cayman Islands. We also exclude Japan as Denis and Osobov (2008) find

that unexpected reductions in the percent of dividend-paying firms in Japan can be attributed to transitory earnings problems.

We then apply a number of filters that result in the elimination of some of the firms incorporated within our sample countries. We begin by excluding identifiable state-owned enterprises. Similar to Mahajan and Tartaroglu (2008), we restrict our sample to firms which report consolidated financial statements. Consistent with DeAngelo, DeAngelo and Stulz (2006), we exclude firms with negative total equity as well as those firms operating in the regulated industries of financials, utilities and real estate. We also exclude those firm-year observations for which Compustat Global indicates that the data might not be comparable to data in other periods, and companies with multiple issues of common stock. We also eliminate firm-year observations containing a change in fiscal year.

Consistent with Baker and Wurgler (2004a, b), the dividend premium is calculated as the difference in the logs of the value-weighted average market-to-book ratios of payers and non-payers. To ensure that the dividend premiums are computed based on a minimum number of companies, we require that there are at least ten payers and ten non-payers in a given country for each year for which we compute the dividend premium. For some countries, the above requirement of a minimum number of payers is met in some of our sample years but not in others. We restrict our sample to only those countries for which the requirement is met in at least five years out of the 9-year period of 1996-2004 used in our regression analyses.[1] The resulting sample consists of 28,435 firm-year observations. These observations are drawn from a sample of 23 countries. After allowing for further eliminations due to missing accounting and financial

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[1] We also examine a sample of only those countries for which the requirement is met in at least *seven* years instead of five. We report brief results for this sample in the section on robustness. The results are qualitatively unchanged.

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variables used in our subsequent empirical analysis, the final sample consists of 24,298 firm-year observations.

In addition to the above sample, we construct two additional samples to which we apply a more stringent criterion regarding the minimum annual number of payers and non-payers. The first of these additional samples requires at least 25 payers and 25 non-payers in each year while the second requires at least 40 payers and 40 non-payers annually. We require that a country satisfy these minimum numbers for at least five of the sample years for it to be included. The first additional sample consists of 24,233 observations drawn from 13 countries while the second sample contains 21,847 observations drawn from 10 countries. After eliminating observations with missing accounting and financial variables required in our subsequent empirical analysis, these final samples consist of 20,858 and 18,933 firm-year observations, respectively.

3. Sample characteristics

3.1. Legal and dividend premium characteristics of the countries and sample characteristics by country

In Table 1 we present a list of the countries in our sample and the legal origin of these countries. Of the 23 countries in our sample with at least 10 payers and non-payers each year, 14 observe civil law while the remaining 9 are classified as belonging to a common law regime. Among the civil law regime countries, seven can be further classified as having a French civil law regime, four with a German civil law origin, while the remaining three firms have a legal regime originating in Scandinavian civil law. The table also indicates which of the countries are excluded when a more stringent criterion is applied in regards to the minimum number of payers and non-payers each year. Of the 13 countries with at least 25 payers and non-payers each year, 6 observe civil law while 7 observe common law. Among the civil law regime countries, three

have a French civil law regime, two a German civil law, and one a Scandinavian civil law. Of the 10 countries in our sample with at least 40 payers and non-payers each year, 4 observe civil law while 6 observe common law. Among the civil law regime countries, two each have French and German civil law origins.

We estimate a number of descriptive statistics for our 23 sample countries in Table 2. The statistics are provided separately for dividend payers and non-payers. The variable *Number* is the total number of payers and non-payers. *Paid in previous year* is the number of payers and non-payers in year t who had paid a dividend in the previous year, $t − 1$. The size of a firm is measured by its *market capitalization*, computed as fiscal year closing price times shares outstanding, in millions of US\$. Local currencies are converted to US\$ using fiscal-year end exchange rates. Firm profitability is measured as earnings (operating income) scaled by the book value of total assets, *E/TA*. Growth opportunities of a firm are measured by (1) the firm's market-to-book ratio, *M/*B, defined as book assets minus book equity plus market equity all divided by book value of assets, and (2) the firm's *percentage change in assets*. The lifecycle effect or a firm's maturity is measured as the firm's retained earnings scaled by the book value of assets, *RE/TA*. The numbers of dividend payers and non-payers are totals during the sample period while the other variables are averages of yearly medians.

In Panel A of Table 2 we present the descriptive statistics on an individual country basis. For all the countries except one, the dividend payers are considerably larger than the non-payers. Even for the sole exception, Spain, if we were to look at the yearly medians' median (not included in the table) instead of the yearly medians' mean, the market capitalization of payers (US\$ 365.2 million) is greater than that of non-payers (US\$ 148.3 million). The evidence is quite strong that larger firms are more likely to be dividend payers throughout the world. In terms of

profitability as measured by earnings scaled by total assets, dividend payers are more profitable than non-payers in all of the 23 sample countries. With respect to firm maturity as measured by retained earnings scaled by total assets, dividend payers are more mature than non-payers in all of the 23 sample countries. For growth opportunities, as measured by the market-to-book ratio and the percentage change in assets, the evidence is mixed. In some countries such as the U.S., non-payers have more growth opportunities than payers, but not in some others. The table provides clear evidence that dividends tend to be sticky. For all the countries, most of the dividend payers in year t had also paid a dividend in year $t – 1$ and very few of the non-payers in year t had paid a dividend in year $t – 1$. For example, in Australia, of the 567 payers, 543 had paid a dividend in the previous year whereas of the 278 non-payers, only 47 had paid a dividend in the previous year.

Panel B contains the means and medians of these variables estimated for the aggregate sample as well as for the common and civil law subsamples. For the overall sample as well as common and civil law countries, dividend payers are larger, more profitable, and more mature than non-payers. However, non-payers do not have more growth opportunities than payers.

In Table 3 we estimate the mean (median) and several other descriptive statistics for the dividend premium for each of our sample countries with at least 10 payers and 10 non-payers in at least five sample years. There appears to be a wide variation in the dividend premium across the sample countries. Thirteen (twelve) of the 23 sample countries have a positive mean (median) dividend premium. Indonesia (Sweden) reports the highest mean (median) dividend premium at 0.410 (0.433), while Hong Kong has the lowest mean and median dividend premium with values of -0.623 and -0.890, respectively. These results might be explainable due to the presence of large values for the dividend premium in these countries. Hong Kong, for instance

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has the lowest dividend premium of any of our sample country-year observations (-1.103), while Sweden has the highest dividend premium with a value of 0.887. We note that the standard deviation of the dividend premium demonstrates a relatively narrow range of values. Germany, Malaysia and the U.S. have the lowest standard deviations in the annual dividend premium estimates (0.075, 0.093 and 0.115, respectively) while the highest is observed for the Netherlands, Sweden and Hong Kong (0.494, 0.494 and 0.594, respectively).

4. Empirical results

As discussed above in Section 2, we have constructed three alternative samples based on a minimum of 10, 25, and 40 payers and non-payers each year, respectively. We perform empirical analyses for each of these samples and find the results to be qualitatively similar. For the sake of space, we provide detailed results in this section for the sample based on a minimum of 25 payers and non-payers each year while providing the main results for the other two samples in Section 5, which contains our robustness analysis.

4.1. Logistic regressions with clustered standard errors

We begin our examination of international differences in the ability of catering to explain dividend behavior by examining whether the probability of a dividend payment is related to the dividend premium. We accomplish this by estimating a logistic regression. The dependent variable in these regressions is a binary variable having a value of one for dividend payers and zero otherwise. As we are performing pooled regressions, the standard errors are likely to be biased unless we correct them for both firm effects and time effects in the data. For standard

errors which are robust to within firm and within time correlation, we follow Petersen (2009) to compute standard errors clustered in the two dimensions of firm and year.[2]

The main independent variable of interest in our regressions is the value-weighted dividend premium, discussed earlier in Section 3. The additional regressors include those variables identified by DeAngelo et al. (2006) and Denis and Osobov (2008) as the determinants of dividend decisions. Specifically, we control for firm size, profitability, growth opportunities, maturity, and the stickiness of dividends.

Our regression estimates are contained in Table 4. The financial variables included as independent variables are based on the fiscal year immediately prior to the year of dividend payment or nonpayment. The *z*-statistics reported in the table are computed based on clustered standard errors by firm and time as per Petersen (2009). We begin our estimates with Model (1), which includes firm size, operating income, and the market-to-book ratio as controls. If the market capitalization of a firm is used as the measure of firm size, one might argue that our results are affected by the changing sample size or the distribution of firm size over the sample period. To address these concerns, we adopt the approach of Fama and French (2001) and Denis and Osobov (2008) by measuring the size of a firm in a given year as the percentage of all sample firms that year that have a smaller market capitalization than the firm in question. Stated differently, we use the market capitalization percentile ranking of a firm in a given year among all sample firms that year as the proxy for firm size. This measure neutralizes any effect of the growth in typical firm size through time.

We find that firms are more likely to pay dividends if they are large and profitable as the coefficients for market capitalization and operating income are significantly positive. Further, the

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[2] Several recent studies such as Denis and Osobov (2008) and Rubin and Smith (2009) have followed this approach of using the two-dimensional clustered standard errors.

propensity to pay dividends is significantly negatively related with the market-to-book value of assets, suggesting that firms with more growth opportunities are less likely to pay dividends. More central to this examination of catering is the finding that firms are more likely to pay dividends if the dividend premium is large. The positive and statistically significant coefficient of the dividend premium is indicative of a catering effect in global dividend policies.

We use two alternative proxies to capture a firm's growth opportunities. In Model (1) discussed above, following de Jong, Kabir, and Nguyen (2008), we use the market-to-book ratio as our proxy for corporate growth opportunities. Because this ratio is affected by the market's perception of the firm's value we replace the market-to-book ratio with the change in total assets scaled by the previous year's total assets in model (2). The results using this new proxy confirm our earlier finding that firms with lower growth opportunities have a greater propensity to pay dividends.

Consistent with Denis and Osobov (2008), who use both the market-to-book ratio and the change in total assets in their regression model, we include both these variables in Model (3). We find that while the market-to-book ratio continues to be negative and significant, the change in total assets is negative but no longer statistically significant. This lack of significance is not inconsistent with Denis and Osobov (2008), who find that growth opportunities do not seem to have a homogeneous affect on international dividend policy.

DeAngelo and DeAngelo (2006) and DeAngelo et al. (2006) contend that there is a lifecycle effect on dividends. They show that the maturity of a firm as reflected in the firm's earned/contributed capital mix influences corporate dividend policy. Consequently, following the above studies, in Model (4) of Table 4 we include retained earnings scaled by total assets as a proxy for firm's maturity. We find that as expected, the coefficient of this variable is positive and

significant. Further, the coefficient for the dividend premium remains statistically significant. We conclude that catering remains an important determinant of dividend policy even after controlling for possible lifecycle effects.

The regressions in Table 4 imply a positive association between the decision to pay a dividend and the level of the dividend premium. Such an association would be consistent with the catering theory if firms were quickly adjusting their dividend decisions in response to changes in the dividend premium. However, Lintner (1956) shows that managers are reluctant to terminate the payment of dividends and it is well-established that dividends are sticky. Therefore, it is important to control for the stickiness of dividends in our regression model. To account for this stickiness, we condition the dividend payment in a given year on past dividend decisions by adding a dummy variable that equals one if a firm paid dividends in previous year and zero otherwise. The estimates are included in Model (5). Consistent with the stickiness of dividends, the coefficient on the above dummy variable is positive and statistically significant. Our result regarding dividend premium remains qualitatively unchanged even after the inclusion of this dummy, providing support to catering.

We next focus our attention on comparing the extent to which catering incentives differ between groups of countries based on their legal origin. Our results from this analysis are discussed in the following section.

4.2. An International comparison of the dividend catering effects

In Table 5 we examine the effect of dividend catering on the propensity to pay dividends by comparing the coefficient estimated for the dividend premium from Model (5) of Table 4 across various country groups. This coefficient captures the sensitivity of the dividend payment

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decision to the relative valuation of dividend payers and hence reflects the presence of a catering effect in corporate decisions to pay dividends.

La Porta et al. (2000) find that a country's legal system and the level of dividends in that country are related. Specifically, they find that firms located in countries enjoying greater investor protections pay higher dividends. Consequently, we examine the extent to which catering varies across legal regime. We hypothesize that firms in countries with better legal protections are more responsive to changing investor preferences with respect to dividend policies. Thus we expect that catering will have grater explanatory power for firms located in common law countries with their more comprehensive set of shareholder rights.

We first estimate the model for common law and civil law country groups. We find that the dividend premium coefficient is positive and significant for the common law group (z-statistic = 5.63, p-value < 0.01) and positive but insignificant for the civil law group (z-statistic = 0.34, p-value = 0.73). The coefficient for the common law countries is over 20 times greater than that estimated for the civil law countries. The results suggest that catering occurs only in the set of common law nations.

We continue our analysis of legal regime by decomposing the aggregate civil law regime into French, German, and Scandinavian sub-classifications in Panel B. We observe that catering is insignificant in the French and German civil law countries, but is significant in the Scandinavian civil law countries (z-statistic = 3.21, p-value < 0.01). The relation between dividend premium and payout, as suggested by the catering theory, is the weakest for French civil law firms and the strongest for the Scandinavian civil law firms. This result is consistent

with the conclusion of La Porta et al. (1998) that the French civil law regime offers the fewest protections to minority equity investors.[3]

Of the country groups examined, the dividend premium coefficient is statistically significant in common law and Scandinavian civil law groups. To assess the statistical significance of the difference in this coefficient between these two country groups, we bootstrap the standard error of the difference five hundred times. We find that the difference between the dividend premium coefficients for common law and Scandinavian civil law countries is 1.38, bootstrap standard error is 0.72, z-statistic is 1.92, and p-value is 0.055. Thus, though significant catering occurs in both the country groups, it is much stronger in the common law group than in the Scandinavian civil law group.

The results in this section reveal important cross-sectional differences in the ability of catering to explain a firm's propensity to pay dividends. We find that catering is more likely to occur in common law countries than in civil law countries, especially those operating under French or German civil law.

5. Robustness tests

In this section, we present the results from a series of robustness analyses. First, we examine whether our findings are equally valid across our entire sample period. We do this by estimating our models across three different time-periods. We then examine whether our results are robust to alternative sample selection criteria. In particular, we see whether changing the requirement of a minimum of 25 payers and non-payers per year affects the results. We also examine whether only including those countries in which the above requirement is met for at

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[3] In a similar vein, Chua, Eun, and Lai (2007) find that in the civil law regime, corporate valuations are the highest in the Scandinavian civil law firms and the lowest in the French civil law firms.

least seven years instead of five affects the result. We look at the affect that largest national equity market in our sample might exert on our findings by excluding the U.S. from our analysis. Finally, we examine whether our results are valid when we use alternative proxies for size and growth opportunities.

5.1. Logistic regressions with clustered standard errors for three sub-periods

In Panel A of Table 6, we present the estimates of Model (5) from Table 4 for three, three-year sub-periods. Our choice of time intervals divides the sample period into three non-overlapping sub-periods of equal length. We observe that the coefficient for the dividend premium remains significantly positive across each of the three sub-periods. Further, the control variables used in the analysis continue to maintain their sign and statistical significance as originally observed in Table 4 except that the market-to-book value of assets is not significant in the third sub-period. Dividend catering appears to be a continuing behavior rather than a phenomenon driven by more transitory considerations.

In Panel B we test for the equality of the dividend premium coefficients across the three sub-periods. We use a bootstrap analysis to test for statistically significant differences in the coefficients. We find that the coefficients do not statistically differ between 1996-98 and 1999-01 and between 1996-98 and 2002-04. However, the coefficient in 2002-04 is significantly greater than the coefficient in 1999-01, suggesting greater catering in 2002-04. We conclude from the combined findings of Panels A and B that catering is a persistent effect and represents a continuing influence on global dividend policies but catering seems to have increased in 2002-04 as compared with the previous three-year period.

5.2. The influence of the requirement regarding minimum number of payers and non-payers

We now test to see if changing the requirement that there be a minimum number of 25 payers and non-payers per year affects our findings. First, in Panel A of Table 7, we relax the above requirement from 25 to 10 payers and non-payers per year. This results in an increase in the number of countries in the sample from 13 to 23. Then, in Panel B of Table 7, we make the above requirement more stringent to a minimum of 40 payers and non-payers per year. This results in a decrease in the number of countries in the sample to 10. We find no qualitative change in our results in both Panels A and B. The coefficient of dividend premium continues to be positive and statistically significant for the overall sample of all countries and for the sub-sample of countries with a common law origin and positive but insignificant for the sub-sample of countries with a civil law origin. Thus, catering is present in common law countries but is insignificant in civil law countries. All the other variables have the expected signs and significance, except that the change in assets continues to be insignificant. Thus, the evidence regarding growth opportunities is mixed as the market-to-book ratio is negative and significant but the change in assets is not.

5.3. Other robustness tests

In this section we first examine if our findings are driven by the inclusion of the U.S., the largest developed capital market, which might *a priori* be expected to be more responsive to investor sentiments. So, we test to determine if the exclusion of the U.S. impacts the ability of the dividend premium to contribute towards an explanation of the decision to pay dividends in the overall sample and in the sample of countries with a common-law origin.

In Panel C of Table 7, we exclude the U.S. from the sample of all the countries in Model (1) and from the sample of common law countries in Model (2). We re-estimate our logistic regressions and our results show that the coefficient for the dividend premium remains positive

and significant. Except for the coefficient on the change in assets, all other control variables continue to be significant and maintain their signs. These results indicate that the existence of international catering effects is not due to the presence of the U.S., but is a more generalized phenomenon.

In the next two models, we examine alternative proxies for firm size and growth opportunities. In Model (3), we measure the size of a firm in a given year as the percentage of sample firms that year from the same country as the firm in question that have a smaller market capitalization than that firm. In this proxy, the benchmark population consists of firms from the same country in that year and there is no need to convert local currencies into U.S. dollars using the fiscal-year end exchange rates. Our results are robust to the use of the alternative measure for firm size. The coefficient of market capitalization percentile ranking within the country in a given year is significantly positive and confirms our earlier result that larger firms have a greater propensity to pay dividends. The coefficient of dividend premium remains significantly positive.

We have earlier used the change in assets as a proxy for growth opportunities. La Porta et al. (2000) argue for using the change in sales as a proxy for growth opportunities because it is less affected by accounting rules. Therefore, in Model (4) we replace the change in total assets with the change in sales scaled by previous year's sales. We find that the coefficient on the change in sales is negative but is not statistically significant. The relationship between the propensity to pay dividends and the other variables remains significant.

The regression results reported in Table 4 are for a sample of countries with a minimum of 25 payers and non-payers per year for at least five years. We now examine the effect of changing this to the requirement that there are a minimum of 25 payers and non-payers per year for at least *seven* years. Three out of 13 countries that meet the requirement of five years do not

meet the requirement of seven years. These countries are the Netherlands, Sweden, and Taiwan. We re-estimate the regression for the remaining 10 countries and the results are reported in Model (5). We do not find any qualitative change in results.

For the purpose of this study, the main point that emerges from the analysis in this section is the fact that the dividend premium is positive and statistically significant. We conclude that catering is a robust effect and not driven by the sample selection criteria such as the minimum number of payers and non-payers in a year or the minimum number of years for which this requirement must be met, or by the choice of proxies for control variables.

6. Conclusion

This study examines the dividend policies of a large sample of firms representing 23 different countries. Using a sample of almost 25,000 firm-year observations, we find a substantial global variation in the propensity to pay dividends. We find that firms in common law countries cater more to their investors' preference for dividends than those in civil law jurisdictions, especially French civil law regimes. These findings suggest the importance of legal protections on the willingness and ability of managers to align their firms' dividend policy with investor preferences. Because of the extensive set of rights and protections provided to shareholders in common law countries, managers must be more responsive to investor preferences for dividends, hence resulting in a catering effect in these countries. The managers in civil law countries are disciplined by the controlling insider blockholders and have little if any interest in pleasing minority shareholders. Our results suggest that these insiders in civil law firms have less interest in dividend catering. This might be due to the idiosyncratic nature by which they enjoy their private benefits of control or an unwillingness to respond to what they perceive as temporary market misevaluations in their firm's equity due to investor preferences.

We also identify a number of cross-sectional determinants of the propensity to pay dividends. We determine that larger firms, firms with higher profitability, firms with low growth opportunities as measured by the market-to-book ratio, and firms that paid dividend previously have a greater propensity to pay dividends. Further, we find that as the dividend premium increases, the likelihood that a firm pays a dividend rises as suggested by catering theory.

Recent research by DeAngelo and DeAngelo (2006) and DeAngelo et al. (2006) presents evidence indicating the existence of a lifecycle effect in the decision to pay dividends. Although we observe evidence consistent with a lifecycle influence, we find that catering persists as an explanatory factor in the payment of dividends even when we control for the lifecycle effect.

The theory of corporate finance maintains that shareholders prefer the dividend policy that maximizes the value of their equity. That value primarily depends on the preferences of outside investors. Our results suggest that outside investors' demand for dividends will be influenced by their level of legal protection. The valuation effects of their demands can entice managers to provide dividends.

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Table 1
Country characteristics

This table presents a list of the 23 countries in our sample with at least 10 payers and non-payers each year and the legal origin of these countries. The legal origin of the countries, including a breakdown of the civil law countries, is from La Porta et al. (1998). The table also indicates which of the countries are excluded when a more stringent criterion is applied in regards to the minimum number of payers and non-payers each year.

Country	Legal Origin	Civil Origin Breakdown	Included in 25 Payers & Non-Payers Sample	Included in 40 Payers & Non-Payers Sample
Australia	Common	–	Yes	Yes
Belgium	Civil	French	No	No
Canada	Common	–	Yes	Yes
Denmark	Civil	Scandinavian	No	No
France	Civil	French	Yes	Yes
Germany	Civil	German	Yes	Yes
Hong Kong	Common	–	No	No
Indonesia	Civil	French	Yes	Yes
Italy	Civil	French	No	No
Korea	Civil	German	No	No
Malaysia	Common	–	Yes	Yes
Mexico	Civil	French	No	No
Netherlands	Civil	French	Yes	No
Norway	Civil	Scandinavian	No	No
Singapore	Common	–	Yes	No
South Africa	Common	–	No	No
Spain	Civil	French	No	No
Sweden	Civil	Scandinavian	Yes	No
Switzerland	Civil	German	No	No
Taiwan	Civil	German	Yes	Yes
Thailand	Common	–	Yes	Yes
U.K.	Common	–	Yes	Yes
U.S.A.	Common	–	Yes	Yes

Table 2
Sample characteristics

Number is the total number of payers and non-payers. *Paid in previous year* is the number of payers and non-payers who had paid a dividend in the previous year. The other variables are averages of yearly medians. *Market capitalization* is in million US$ based on fiscal-year end exchange rates. *E/TA* is Earnings/Total Assets, *M/B* is the market-to-book ratio, and *RE/TA* is Retained Earnings/Total Assets.

Panel A: Sample characteristics by country

Country	Payers / Non-payers	Number	Paid in prev. year	Market Cap.	E/TA	M/B	Ch. in Assets	RE/TA
Australia	Payers	567	543	201	7.1%	1.28	8.1%	10.5%
	Non-payers	278	47	29	-4.9%	1.15	5.5%	-30.3%
Belgium	Payers	56	46	189	8.8%	1.24	6.9%	6.3%
	Non-payers	40	3	52	5.0%	1.10	10.7%	-1.5%
Canada	Payers	316	286	474	10.0%	1.24	8.4%	25.4%
	Non-payers	601	13	118	0.9%	1.51	10.6%	-5.8%
Denmark	Payers	118	110	217	8.1%	1.05	7.8%	25.3%
	Non-payers	93	16	27	1.4%	1.08	2.2%	6.2%
France	Payers	847	778	275	8.5%	1.20	8.0%	1.6%
	Non-payers	538	28	30	2.3%	1.10	5.1%	-4.5%
Germany	Payers	654	576	350	8.0%	1.25	6.8%	5.8%
	Non-payers	587	71	49	0.5%	1.40	16.9%	0.2%
Hong Kong	Payers	123	112	251	4.9%	0.96	3.0%	24.2%
	Non-payers	107	14	35	-2.6%	0.82	-8.6%	-3.8%
Indonesia	Payers	309	224	42	11.3%	1.03	17.7%	20.3%
	Non-payers	389	98	21	3.1%	0.97	14.9%	-3.8%
Italy	Payers	133	116	256	6.9%	1.21	7.6%	1.9%
	Non-payers	84	13	69	0.5%	1.16	-0.3%	0.2%
Korea	Payers	258	239	279	8.0%	0.91	11.8%	0.1%
	Non-payers	91	21	99	1.3%	0.97	5.3%	0.0%
Malaysia	Payers	1,156	1,061	55	6.8%	1.10	5.7%	21.8%
	Non-payers	754	147	16	0.8%	1.03	-2.6%	1.4%
Mexico	Payers	86	63	81	11.2%	1.06	16.6%	39.6%
	Non-payers	104	19	47	6.0%	0.95	15.0%	29.0%
Netherlands	Payers	249	229	260	10.1%	1.36	7.3%	0.0%
	Non-payers	126	17	47	0.9%	1.30	4.2%	0.0%
Norway	Payers	136	110	160	7.7%	1.20	8.1%	8.4%
	Non-payers	126	15	89	-0.2%	1.24	9.7%	4.0%
Singapore	Payers	581	520	69	4.9%	1.04	6.5%	15.9%
	Non-payers	352	74	21	-0.7%	1.09	-2.4%	-2.8%
S. Africa	Payers	109	103	346	12.8%	1.39	12.2%	30.0%
	Non-payers	43	11	133	6.6%	1.36	37.1%	12.5%
Spain	Payers	170	160	344	7.8%	1.23	10.2%	1.2%
	Non-payers	51	4	735	4.8%	1.35	22.8%	0.5%
Sweden	Payers	199	179	153	10.9%	1.43	11.7%	11.2%
	Non-payers	205	17	23	-9.3%	1.65	8.2%	-1.1%
Switzerland	Payers	384	335	265	7.5%	1.26	5.6%	12.3%
	Non-payers	138	36	123	3.8%	1.16	3.7%	2.7%
Taiwan	Payers	310	233	441	7.3%	1.44	16.2%	9.2%
	Non-payers	243	18	245	2.1%	1.20	9.2%	2.7%
Thailand	Payers	604	514	33	8.6%	0.97	7.5%	18.9%
	Non-payers	499	48	12	2.1%	0.94	3.9%	-11.5%
U.K.	Payers	2,294	2,240	167	10.5%	1.37	7.4%	24.2%
	Non-payers	749	111	41	-6.0%	1.29	5.0%	-31.3%
U.S.A.	Payers	2,748	2,619	807	11.2%	1.51	6.7%	38.8%
	Non-payers	5,693	106	214	5.1%	1.70	11.2%	4.3%

Panel B: Averages and medians of country-wise sample characteristics

Countries	Payers / Non-payers	Number	Paid in prev. year	Market Cap.	E/TA	M/B	Ch. in Assets	RE/TA
All: Averages	Payers	539	495	248	8.6%	1.21	9.0%	15.4%
	Non-payers	517	41	99	1.0%	1.20	8.1%	-1.6%
All: Medians	Payers	309	233	251	8.1%	1.23	7.8%	12.3%
	Non-payers	205	19	47	1.3%	1.16	5.5%	0.0%
Common law:	Payers	944	889	267	8.5%	1.21	7.3%	23.3%
Averages	Non-payers	1,008	63	69	0.1%	1.21	6.6%	-7.5%
Common law:	Payers	581	520	201	8.6%	1.24	7.4%	24.2%
Medians	Non-payers	499	48	35	0.8%	1.15	5.0%	-3.8%
Civil law:	Payers	279	243	237	8.7%	1.20	10.2%	10.2%
Averages	Non-payers	201	27	118	1.6%	1.19	9.1%	2.3%
Civil law:	Payers	224	202	258	8.0%	1.22	8.1%	7.3%
Medians	Non-payers	106	18	50	1.7%	1.16	8.7%	0.2%

Table 3
Descriptive statistics of national dividend premiums

This table presents national statistics regarding annual dividend premiums over the sample period, 1995-2004. Dividend premium is calculated as the difference in the logs of the value-weighted average market-to-book ratios of payers and non-payers. N is the number of years during the sample period for which the dividend premium is available for a country with at least 10 payers and 10 non-payers in each year.

Country	N	Mean	Median	Minimum	Maximum	Std. Dev.
Australia	9	–0.031	–0.057	–0.243	0.222	0.148
Belgium	6	–0.092	–0.015	–0.772	0.404	0.428
Canada	10	–0.180	–0.198	–0.439	0.072	0.168
Denmark	7	0.111	0.327	–0.481	0.402	0.387
France	10	0.151	0.148	–0.024	0.374	0.126
Germany	10	–0.010	–0.005	–0.120	0.082	0.075
Hong Kong	5	–0.623	–0.890	–1.103	0.259	0.594
Indonesia	8	0.410	0.381	0.186	0.628	0.148
Italy	9	0.221	0.242	0.064	0.374	0.116
Korea	6	0.144	0.095	0.035	0.399	0.132
Malaysia	9	0.125	0.129	0.013	0.251	0.093
Mexico	8	0.001	–0.134	–0.225	0.352	0.249
Netherlands	9	–0.110	–0.095	–0.950	0.421	0.494
Norway	9	–0.096	–0.099	–0.643	0.125	0.227
Singapore	9	0.093	0.049	–0.225	0.322	0.187
South Africa	5	0.213	0.251	–0.309	0.611	0.344
Spain	8	–0.132	–0.150	–0.470	0.323	0.248
Sweden	8	0.304	0.433	–0.377	0.887	0.494
Switzerland	10	0.176	0.254	–0.253	0.547	0.271
Taiwan	8	–0.062	–0.178	–0.488	0.352	0.317
Thailand	9	0.070	0.056	–0.215	0.328	0.169
U.K.	10	0.189	0.164	–0.027	0.459	0.168
U.S.A.	10	–0.166	–0.139	–0.356	–0.022	0.115

Table 4
Logistic regressions with clustered standard errors

The dependent variable is a binary variable with a value of one for dividend payers and zero otherwise. Dividend premium is calculated as the difference in the logs of the value-weighted average market-to-book ratios of payers and non-payers. The financial variables are based on the fiscal year immediately prior to the year of dividend payment or nonpayment. Firm size is the market capitalization percentile ranking of a firm in a given year among all sample firms that year. Operating income, change in assets and retained earnings are scaled by the book value of assets. Two-tailed statistical significance at the 1% level is indicated by ***. z-statistics are computed based on standard errors clustered with firm and year following Petersen (2009).

Model	(1)		(2)		(3)		(4)		(5)	
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat
Intercept	−1.06***	−15.39	−1.34***	−11.96	−1.00***	−13.45	−1.16***	−14.65	−3.23***	−25.36
Dividend premium	2.06***	4.76	2.55***	7.30	2.31***	6.39	2.80***	6.79	1.80***	6.62
Size	2.59***	15.63	1.94***	9.10	2.58***	13.22	2.44***	11.37	1.51***	11.16
Operating income	10.00***	15.35	7.26***	10.14	9.68***	13.65	6.60***	8.78	5.73***	9.30
Market-to-book	−0.54***	−10.02			−0.53***	−10.67	−0.49***	−9.18	−0.21***	−4.50
Change in assets			−0.60***	−2.63	−0.34	−1.51	−0.17	−0.96	0.00	0.08
Retained earnings							2.62***	16.89	1.31***	11.25
Payer in previous year									4.55***	30.65

Table 5
Comparison of catering between groups of countries

This table reports the estimates of Model (5) of Table 4 for various groups of countries. Two-tailed statistical significance at the 1%, 5%, and 10% levels is indicated by ***, **, and *, respectively.

Sub-group	Common law		Civil law: All		Civil law: French		Civil law: German		Civil law: Scandinavian	
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat
Intercept	–3.52***	–18.42	–2.62***	–22.22	–2.52***	–7.53	–2.40***	–8.73	–3.45***	–4.23
Dividend premium	2.12***	5.63	0.10	0.34	–0.48	–1.27	1.67	1.14	0.75***	3.21
Size	1.63***	19.78	1.41***	4.48	1.38***	3.92	1.60***	4.23	2.00***	2.00
Operating income	5.25***	7.32	10.73***	9.59	10.69***	15.67	11.48***	5.63	15.59**	2.33
Market-to-book	–0.23***	–3.47	–0.15***	–5.81	–0.13***	–3.35	–0.26***	–2.62	–0.12*	–1.65
Change in assets	–0.01	–0.38	0.00	0.01	–0.52	–1.39	0.05***	3.34	–0.49	–1.50
Retained earnings	1.49***	8.37	3.88***	5.04	4.04***	5.77	5.03***	4.59	5.26***	2.91
Payer in previous year	4.88***	31.29	3.27***	21.42	3.37***	10.87	3.05***	13.17	2.65***	4.85

Table 6
Logistic regressions with clustered standard errors for three sub-periods

Panel A of the table presents logistic regressions with clustered standard errors for Model (5) of Table 4 for three 3-year sub-periods. Panel B presents the tests of equality of the dividend premium coefficient for the three sub-periods. To assess the statistical significance of the difference in the dividend premium coefficients between sub-periods, we bootstrap the standard error of the difference five hundred times. The standard error and z-statistic included in Panel B for the difference in coefficients are the bootstrapped measures. Two-tailed significance at the 1% level is indicated by ***.

Panel A: Logistic regressions

Period	1996-98		1999-01		2002-04	
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat
Intercept	−3.66***	−27.39	−3.20***	−16.00	−3.03***	−24.42
Dividend premium	1.84***	4.14	1.43***	4.53	2.29***	5.90
Size	2.06***	9.65	1.38***	9.36	1.15***	16.02
Operating income	4.49***	3.43	5.93***	5.87	6.80***	8.84
Market-to-book	−0.24***	−3.50	−0.19***	−4.89	−0.15	−1.02
Change in assets	−0.27	−1.07	0.01	0.94	−0.06	−0.47
Retained earnings	1.09***	11.38	1.54***	5.54	1.29***	12.70
Payer in previous year	5.12***	13.80	4.28***	20.88	4.50***	42.86

Panel B: Tests of equality of the dividend premium coefficient for the three sub-periods

	Difference in Coefficients	Bootstrapped Std. Error of Difference	z-statistic
Sub-period 2 v. 1	−0.41	0.45	0.90
Sub-period 3 v. 2	0.86***	0.32	2.72
Sub-period 3 v. 1	0.45	0.49	0.92

Table 7
Robustness of regression results

Two-tailed significance at the 1% and 5% levels is indicated by *** and **, respectively. z-statistics are computed based on standard errors clustered with firm and year following Petersen (2009)

Panel A: Countries with minimum 10 payers and non-payers each year for at least five years

Period	All countries		Common law		Civil law	
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat
Intercept	–3.01***	–33.83	–3.47***	–19.62	–2.34***	–24.34
Dividend premium	1.07***	4.67	1.55***	6.66	0.15	0.80
Size	1.42***	13.11	1.58***	23.18	1.22***	6.42
Operating income	5.58***	8.51	5.05***	7.76	9.61***	7.46
Market-to-book	–0.19***	–5.40	–0.22***	–3.94	–0.13***	–4.71
Change in assets	–0.02	–0.20	–0.03	–0.47	–0.03	–0.27
Retained earnings	1.11***	11.36	1.43***	7.88	1.42***	3.79
Payer in previous year	4.34***	42.33	4.86***	38.17	3.22***	26.00

Panel B: Countries with minimum 40 payers and non-payers each year for at least five years

Period	All countries		Common law		Civil law	
	Coeff.	z-stat	Coeff.	z-stat	Coeff.	z-stat
Intercept	–3.37***	–24.95	–3.53***	–18.49	–2.88***	–13.95
Dividend premium	2.16***	8.08	2.21***	5.69	0.01	0.03
Size	1.59***	13.50	1.58***	19.59	1.84***	5.28
Operating income	5.81***	9.47	5.53***	7.12	10.83***	7.60
Market-to-book	–0.22***	–3.55	–0.23***	–3.07	–0.17***	–5.24
Change in assets	0.01	0.28	–0.01	–0.39	0.02	0.44
Retained earnings	1.29***	8.25	1.37***	7.40	3.29***	4.66
Payer in previous year	4.71***	24.79	4.99***	23.32	3.32***	16.83

Panel C: Additional robustness tests

Model	(1)		(2)		(3)		(4)		(5)	
Description	U.S. excluded (All countries)		U.S. excluded (Common law)		Alternate measure of size		Alternate proxy for growth opp.		At least 7 years in each country	
	Coeff.	*z*-stat	Coeff.	*z*-stat	Coeff.	*z*-stat	Coeff.	*z*-stat	Coeff.	*z*-stat
Intercept	–2.69***	–35.29	–2.79***	–22.90	–2.80***	–20.56	–3.23***	–25.29	–3.35***	–28.07
Dividend premium	0.60**	2.50	1.03***	3.93	1.72***	7.50	1.79***	6.73	2.03***	8.69
Size	1.43***	10.44	1.49***	16.37			1.52***	11.25	1.58***	12.26
Operating income	8.31***	13.10	7.22***	9.14	6.17***	9.92	5.72***	9.55	5.62***	10.15
Market-to-book	–0.11***	–4.38	–0.10***	–2.77	–0.15***	–3.41	–0.21***	–4.51	–0.22***	–4.14
Change in assets	–0.01	–0.16	–0.03***	–0.46	0.00	0.14			0.00	0.12
Retained earnings	2.60***	9.64	2.50***	7.61	1.34***	12.12	1.29***	11.14	1.42***	10.34
Payer in previous year	3.50***	32.30	3.60***	26.02	4.64***	30.76	4.56***	31.00	4.62***	31.63
Alt. measure: Size					0.31**	1.97				
Change in sales							–0.04	–1.18		