

**Disappearing Dividends, Catering Incentives and Agency Costs:
International Evidence***

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Abstract

We examine time-series evidence of dividend policies in several developed financial markets over the period 1989-2002. Consistent with trends in the U.S., our evidence indicates a declining propensity to pay dividends in Canada, the U.K., Germany, France, and Japan. This decline cannot be explained by the changing composition of publicly traded firms in each country. In addition, we test implications of the catering explanation for the declining propensity to pay dividends and fail to find robust support for the hypothesis. Furthermore, we argue that both our evidence and prior evidence supporting the catering hypothesis is consistent with an agency cost explanation for dividends.

* Preliminary and incomplete. Not for quotation.

Disappearing Dividends, Catering Incentives and Agency Costs: International Evidence

1. Introduction

In a recent study, Fama and French (2001) provide evidence of a large change in the dividend policies of U.S. industrial companies. Specifically, Fama and French report a substantial decline in the proportion of firms paying dividends. Although this decline is due in part to changes in the characteristics of firms that are publicly traded (i.e. more firms exhibit characteristics similar to those of non-dividend-paying firms), Fama and French nonetheless report that once they control for these characteristics, they still find a significant decline in the residual propensity to pay dividends. Their findings thus represent an important addition to the ‘dividend puzzle’ literature.

There are several potential explanations for the observed change in dividend policies, including (i) a substitution of repurchases for dividends, (ii) lower transactions costs of selling stock for consumption, (iii) improved corporate governance reducing the need for dividends to control agency problems, (iv) a decline in the information content of dividends, and (v) a desire to cater to the demand for dividend-paying stocks that is driven by investor sentiment. To date, the evidence appears to best fit the catering hypothesis (v). In particular, Baker and Wurgler (2004b) document a significant relation between the propensity to pay dividends and alternative measures of investor sentiment towards dividends.

We extend this literature by examining time-series evidence on the propensity to pay dividends in several different developed financial markets. The advantage of this approach is twofold. First, it provides evidence on the robustness of the disappearing dividend puzzle. Second, it allows us to conduct a further test of the catering hypothesis. As their primary

measure of investor sentiment, Baker and Wurgler (2004b) use the relative market-to-book ratios of dividend payers and non-payers. Because this measure of catering incentives might also be viewed as a measure of the relative growth opportunities of payers and non-payers, their evidence could be viewed as consistent with an agency explanation. That is, as the relative growth opportunities of dividend payers improves, agency theory predicts that these firms will be less inclined to pay dividends.

The use of international data potentially allows us to discriminate between the agency and catering explanations. The reason for this is that the agency explanation predicts a different relation between dividends and growth opportunities for civil law countries than for common law countries. As described in LaPorta, Lopez de Silanes, Shleifer, and Vishny (LLSV) (2000), high-growth firms in countries with good shareholder protection should have lower payout ratios because shareholders in these countries can be confident that when a company's investments pay off, the shareholders will benefit by receiving higher dividends. By contrast, in countries with poor shareholder protection, shareholders cannot be confident that they will ultimately share in the benefits from reinvesting corporate cash flows in high-growth projects. Consequently, shareholders in these countries prefer to receive whatever dividend they can get immediately. As a result, LLSV argue that we would not expect to observe a negative relation between growth opportunities and dividend payout rates in countries with poor investor protection. In fact, the relation might even be positive in these countries if firms with better growth opportunities use dividends to establish a reputation for good treatment of minority shareholders, thereby allowing the firm to raise external capital on more favorable terms. The catering explanation predicts no difference between common and civil law countries in the relation between dividends and the relative market-to-book ratio of payers and non-payers.

Our sample is drawn from the Worldscope database and contains data on the dividend policies of firms in six developed financial markets: the United States (U.S.), Canada, the United Kingdom (U.K.), Germany, France, and Japan between 1989 and 2002. The results indicate that the phenomenon of ‘disappearing dividends’ first reported for U.S. firms in Fama and French (2001) extends to other financial markets as well. In all six countries, the proportion of dividend payers in the population of firms declines over the sample period. This decline is deeper than what would be expected given the time-series changes in the characteristics of the firms that are publicly traded in each country. Moreover, in each country, there is evidence that dividends are ‘sticky’ in the sense that the likelihood of a firm paying a dividend in the current period is significantly associated with whether it did so in the prior period.

We further explore the catering and agency explanations by estimating regressions similar to those in Baker and Wurgler (2004a,b). These tests reveal some modest evidence of a positive relation between unexpected proportions of dividend payers and the relative market-to-book ratios of payers vs. non-payers in common law countries, but not in civil law countries. We argue that while the findings for civil law countries are inconsistent with the catering explanation, the findings for both civil law and common law countries are consistent with the agency explanation.

The remainder of the paper is organized as follows. In Section 2, we review the prior literature that forms the background for our study. Section 3 describes our sample selection procedure and provides a description of the sample firms. Section 4 reports evidence on time-series trends in the propensity to pay dividends in our sample countries. Section 5 reports evidence on tests of the catering and agency explanations. Section 6 concludes.

2. Background

Fama and French (2001) report that the proportion of dividend payers among publicly traded, non-financial, non-utility U.S. firms has substantially declined in the last two decades. The proportion of payers in their sample peaks in 1978 reaching 66.5%. It falls sharply thereafter, so that only 20.8% of firms pay dividends in 1999. Moreover, the number of dividend payers declines from 1,988 in 1978 to 1,045 in 1998. Despite a significant increase in the proportion of small firms with low profitability and strong growth opportunities that were never likely to pay dividends, the observed decline in the incidence of dividend payments cannot be fully explained by changes in firm characteristics.¹

Several potential explanations of the declining propensity to pay have been proposed in the literature.² First, Easterbrook (1984) argues that dividends are useful in controlling agency problems between managers and shareholders. If agency costs have been reduced over time, perhaps because of improved corporate governance, this would diminish the need for dividends. Second, it has often been argued that dividends can be used as signals of future profitability.³ If information asymmetries between investors and management have declined over time, this reduces the need for dividends. Third, reduced propensity to pay might be a market response to a corresponding decline in investor demand for dividend-paying stocks driven by equilibrium clientele effects. Fourth, stock options create an incentive for managers not to pay dividends, so the increasing use of stock options in managerial compensation contracts could result in lower incidence of dividend payments. Fifth, managers might have substituted repurchases for

¹ Note that Fama and French's (2001) evidence does not imply a reduction in dividends. Indeed, DeAngelo, DeAngelo, and Skinner (2003) show that aggregate real dividends actually increase over the Fama-French sample period.

² Several of these potential explanations are discussed in greater detail in Baker and Wurgler (2003).

³ See, for example the models of Miller and Rock (1985) and John and Williams (1985).

dividends after learning of the tax disadvantages of dividends. Finally, the catering theory of Baker and Wurgler (2004a) predicts that the decline in dividends could be due to a shift in investor sentiment for dividends versus capital gains.

Existing empirical evidence relevant to evaluating the candidate explanations is somewhat mixed. To our knowledge, the agency explanation has not been directly tested. There is little support for the signaling, clientele, and repurchase substitution explanations and modest support for the stock options explanation. To date, the catering explanation has received the strongest support.

Consistent with a reduced demand for signaling, Amihud and Li (2003) report that the magnitude of stock price reactions to announcements of dividend changes has decreased since the mid 1970s. They attribute this decrease to increased stock ownership by institutional investors. However, DeAngelo, DeAngelo, and Skinner (2003) argue that the fact that dividends are increasingly concentrated among a small number of large payers casts doubt on the view that signaling can be a first-order determinant of dividend policies. They also argue that their evidence of strong concentration of earnings among dividend-paying firms poses a challenge for equilibrium clientele explanations. Similarly, Brav, Graham, Harvey, and Michaely (2003) find no evidence that firms use payout policy as a means of attracting particular investor clienteles.

Evidence in Fenn and Liang (2001) and Lambert, Lanen, and Larcker (1989) supports the view that the decline in dividend payers is linked with the explosion in the use of executive stock options in the U.S. Nonetheless, Baker and Wurgler (2003) argue that they are unable to uncover any evidence that suggests that stock options initiated the decline in the propensity to pay dividends in the post-1978 period. They acknowledge, however, that the growth in option-

based compensation may have helped propagate the decline in the propensity to pay, once it was underway.

Grullon and Michaely (2002) report evidence on the substitution of repurchases for dividends in the U.S. and argue that it is consistent with the observed declines in the propensity to pay. However, they detect a negative relationship between dividend *payouts* and share repurchases, and not between dividend *decisions* and share repurchases. Furthermore, Fama and French (2001) show that firms that repurchase their shares are typically already dividend payers. This leaves unexplained most of the secular decline in the proportion of dividend payers.

The explanation that has received the most empirical support to date is Baker and Wurgler's (2004a) catering theory. Baker and Wurgler (2004b) identify four distinct trends in the propensity to pay dividends between 1963 and 2000. They then show that each of these trends can be connected to a corresponding fluctuation in their proxy for catering incentives, the log difference in the value-weighted average market-to-book ratio of dividend payers and the value-weighted average market-to-book ratio of dividend non-payers.

Although Baker and Wurgler's (2004b) findings are consistent with the catering explanation, we note that their measure of catering incentives might also be viewed as a measure of the market's perception of the relative growth opportunities of dividend payers and non-payers. When this measure is high, the market believes that the growth opportunities of dividend payers are relatively good, while those of non-payers are relatively poor. Under the agency cost hypothesis of Easterbrook (1984), this predicts an increase in the propensity to pay by non-payers. Conversely, when the market-to-book ratio of payers relative to non-payers is low, the agency cost hypothesis predicts that non-payers will be less likely to initiate dividends. The

bottom line, therefore, is that Baker and Wurgler's (2004b) evidence could be viewed as consistent with both the catering and the agency explanations.

Our study yields further insights on the declining propensity to pay dividends by extending the evidence to other developed financial markets. This allows us to first test the robustness of the phenomenon. Second, it allows us to further discriminate between the catering and the agency explanations. The reason for this is as follows. Using agency cost arguments, LLSV (2000) argue that the relation between dividends and growth opportunities will differ in civil law and in common law countries. Specifically, they predict that the relation is negative in common law countries but non-negative in civil law countries. Thus, the agency cost hypothesis implies a difference in the relation between the propensity to pay dividends and the relative market-to-book ratios of dividend payers and non-payers in common law countries than in civil law countries. By contrast, the catering theory implies no such difference.

3. Sample Selection and Data Description

Our sample is constructed using Worldscope data collected via Thomson One Banker Analytics. The initial sample includes all firms for which Worldscope provides information on total assets, common equity, net income, interest expense and either market capitalization at fiscal year-end or the number of outstanding shares and fiscal year-end closing price. We also require (i) total assets to be available both in the current and in the preceding year, (ii) the sample firms have non-missing values for preferred dividends and either common dividends or total cash dividends, (iii) the sample firms have non-missing information on the method of reporting long-term investments in which they have interest in excess of fifty percent. We exclude firms for which the primary outstanding security is not common stock or for which information on the

type of primary outstanding security is missing. Also, following Fama and French (2001), we exclude utilities (SIC codes 4900-4949), financial firms (SIC codes 6000-6999), and firms with negative book equity. Finally, to alleviate distorting effects from off-balance sheet operations that are possible in some countries, we include only those firms that consolidate at least their major subsidiaries.

Although the base year for Worldscope data is 1980, Worldscope acknowledges that its coverage prior to 1985 is limited. In the Appendix, we report the average number of firms that satisfy our data requirements in the countries studied by LLSV (2000). These data confirm the sparse coverage in all countries in the 1981 to 1985 period. In addition, our experimental design requires a sufficient number of dividend payers and non-payers over an approximately fifteen year period. This additional constraint limits the set of countries that we include in the sample to the U.S., U.K., Canada, Germany, France and Japan.

Figure 1 shows the annual number of firms in the sample for each of the six sample countries. Due to the expanding coverage of Worldscope, these counts grow significantly between 1981 and 2002 in all countries. Moreover, particularly steep increases in firm counts are observed between 1987 and 1989 for Canada, the U.K., Germany and France. In all countries, the numbers of firms in the 1981 to 1987 period that satisfy the data requirements represent a small fraction of those in the 1990s. In order to minimize the sample selection issues associated with increasing Worldscope coverage over time, we, therefore choose to study dividend policies in the selected countries over the 1989 to 2002 time period.

Figure 1 also displays the number of dividend payers and non-payers in each of the countries. As is evident in the figures, the proportion of dividend-paying firms declines over time in all six countries. The steepest declines are observed in the U.S. and Canada (from 61.0 to

19.0% and from 69.2% to 19.9%, respectively), while the smallest reduction in the proportion of payers is observed in Japan (from 89.1% to 83.8%). One concern is that these declines could be an artifact of expanding coverage of Worldscope. For example, perhaps the firms that are first added to the database are those that are more likely to pay dividends, while those that are added later are less likely to be dividend payers. This concern is mitigated somewhat by the observation from Figure 1 that the raw number of dividend payers declines between 1998 and 2002 in all countries except Germany and Japan. Nonetheless, it is still possible that the decline is due to a shift in the composition of publicly traded companies listed on Worldscope.

To explore this issue further, Table 1 reports average characteristics of dividend payers and non-payers. Fama and French (2001) report that dividend payers tend to be more profitable, have less valuable growth opportunities, and are larger firms than are non-payers. We measure profitability (E_t/A_t) as the ratio of earnings before interest (net income + interest expense if available + deferred taxes if available) to the book value of total assets and as the ratio of after-tax earnings to the book value of equity (Y_t/BE_t), where book equity is defined as common equity plus non-equity reserves if available. Growth opportunities are measured as the ratio of the market value of total capital (book value of total assets – book value of equity + market value of equity) to the book value of total assets (V_t/A_t) and the percentage change in total assets over the year (dA_t/A_t). The market value of equity is measured as the market capitalization for non-U.S. firms and for U.S. firms with fiscal year ending in December if available. Alternatively, market equity is measured as the closing stock price at fiscal year-end times the number of shares outstanding. Finally, firm size is measured as the book value of total assets (A_t).

Consistent with the findings in Fama and French (2001), we find that dividend payers tend to be larger and more profitable firms. However, the relation between dividend payments

and growth opportunities is not uniform across countries. In the common law countries (U.S., Canada, and the U.K.), dividend payers tend to have less valuable growth opportunities. In Civil Law countries, however, the evidence is much more mixed. If anything, it appears that dividend payers tend to have more valuable growth opportunities. These findings confirm similar evidence on dividend payouts in LLSV (2000).

Table 2 reports the evolution of firm characteristics through time in each country. We report averages of annual medians in three sub-periods: 1989 to 1993, 1994 to 1998, and 1999 to 2002. In general, it appears that within each country, firms become more likely to exhibit characteristics of firms that are less likely to pay dividends in that country. That is, each country exhibits a trend towards smaller and less profitable firms. In the common law countries (U.S., Canada, and the U.K.), there is a trend towards higher growth opportunities, as measured by the market-to-book ratio. This trend is less evident in the civil law countries. While France exhibits an increase in V_t/A_t over time, Germany and Japan do not. The bottom line is that the data in Tables 1 and 2 reinforce the importance of controlling for changing firm characteristics in our tests of the change in the propensity to pay dividends in each country.

4. International Evidence on the Declining Propensity to Pay Dividends

In this section, we quantify the roles of changing characteristics and a declining propensity to pay dividends in explaining the reduction in the proportion of dividend payers in each of the sample countries. We do so in three steps. First, we estimate logit models that relate the probability of paying dividends to firm size, growth opportunities, and profitability. Second, using coefficient estimates from the logit models in a base period, we estimate the expected probability of dividend payments for the subsequent years, given the characteristics of the firms

in those years. Finally, we compare this expected probability of dividend payment with the actual rate of dividend payment for that year. Time-series changes in the difference between the expected and the actual dividend payment rates thus reflect changes in the propensity to pay dividends.

4.1. Regression estimates

To quantify the marginal effects of profitability, growth opportunities, and size on the propensity to pay dividends, we estimate annual logit regressions similar to those in Fama and French (2001). The dependent variable in our regressions equals 1 if a firm pays dividend in year t , and 0 otherwise. We use the market-to book ratio (V_t/A_t) and the percent change in a firm's total assets (dA_t/A_t , $dA_t = A_t - A_{t-1}$) as proxies for its growth opportunities, and earnings before interest but after taxes divided by total assets (E_t/A_t) as a proxy for its profitability.

As a proxy for firm size, we follow Fama and French (2001) and use the percentage of firms in the benchmark population with smaller market capitalization as of the end of the firm's fiscal year. We define the benchmark population as the set of firms present in the sample during the base period of 1989-93. It is evident from Table 2 that the median firm size in all sample countries except the U.K. declines during the study period as a result of a corresponding decline in the size of newly listed companies. Thus, by selecting as a benchmark set those firms that are present in the 1989 to 1993 period, we are more likely to pick up those firms that are represented throughout the entire sample period of 1989 to 2002. Although one might then be concerned about survivor bias in the benchmark sample, we believe that this concern is mitigated by the relatively short horizon of the study.

In Table 3, we estimate intercept and slope coefficients from annual regressions, then report averages of the annual coefficients and the corresponding t -statistics. The t -statistics are calculated using the time-series standard deviations of the coefficients. Consistent with our univariate findings, the likelihood of paying dividends is positively related to firm size and to profitability in all six countries. However, the effect of growth opportunities on the likelihood of dividend payments is less homogeneous. In the common law countries (USA, Canada and the U.K.), the slopes on both growth opportunity proxies are significantly negative. Among the civil law countries, the slope on V_t/A_t is still negative and significant in France and Japan, but insignificant in Germany. At the same time, the slope on dA_t/A_t is positive in all three countries.⁴

Table 3 also estimates the logit models separately for those firms that paid a dividend in the prior year (payers) and those that did not (non-payers). The intercepts in the logit models are significantly positive for dividend payers in all countries except Canada and Germany. The intercepts for non-payers are significantly negative in all countries. These findings imply a degree of path dependence in dividend policies. That is, controlling for firm characteristics, firms that currently pay dividends have a preference for continuing to do so. By contrast, firms that do not currently pay dividends prefer not to initiate them.

Table 4 compares actual proportions of dividend payers in each sample year with their expected values. To obtain the expected proportions of payers, we first estimate regressions similar to those in Table 3 for a base period of 1989 to 1993. These regressions are estimated for the full sample of dividend payers and non-payers. Using the average annual coefficients from that period, we then calculate the probability of dividend payments for each firm in subsequent

⁴ In untabulated results, we also find that the relations between dividend payment and firm characteristics are generally consistent through time.

years, based on their characteristics in that year. The expected percent of dividend payers is then obtained by averaging the individual probabilities across firms in each year.

As shown in Table 4, the expected proportion of dividend payers declines in all countries over the forecast period of 1994 to 2002. The magnitude of the effect differs across countries. The largest decline occurs in Canada, where the expected proportion of dividend payers drops from 56.6% in 1994 to 31.9% in 2002. The smallest occurs in Japan, where the expected proportion decreases from 90.6% to 88.4%. Evidence of a decline in the expected proportion of dividend payers in each country is consistent with our univariate findings and supports the conclusion that shifts in the characteristics of publicly traded companies account for a large proportion of the decline in dividend payers in each country.

Changes in the propensity to pay dividends can be measured as the difference between the expected and the actual proportion of payers. That is, controlling for changes in the characteristics of publicly traded companies, changes in the unexpected proportion of payers reflects changes in the propensity to pay dividends. As shown in Table 4, these differences are unambiguously positive in all countries. Interestingly, the average unexpected changes in the proportion of payers in Germany and France (13.5% and 10.5%, respectively) are no smaller than those in the U.S. and Canada (10.8% and 8.7%), even though the declines in the expected percent of payers are deeper in the common law countries. The evidence thus supports the view that the declining propensity to pay, originally documented for U.S. firms, extends to other developed financial markets as well.

4.2. Robustness and other tests

It could be argued that our results in Table 4 are biased because we omit an important independent variable – the lagged dividend status of the firm. As shown in Table 2, the likelihood of paying a dividend in the current period is strongly associated with whether firm paid a dividend in the prior period. That is, dividend policies are ‘sticky.’ One possible approach, therefore, is to estimate the probability of dividend payment separately for dividend payers and non-payers, then use this quantity to gauge how the decline in the proportion of payers is split between changing characteristics and a declining propensity to pay dividends.

There is a conceptual problem with this approach, however. As pointed out by Fama and French (2001), with separate regressions for payers and non-payers, the probability that a payer continues to pay will be higher than the probability that a non-payer with identical characteristics will initiate dividend payments. If there is a declining propensity to pay dividends in the latter part of the sample period, this will already be partially reflected in a lower expected probability of dividend payments for non-payers. Thus, the difference between the expected and the actual proportion of payers using separate regressions will understate the cumulative effect of the declining propensity to pay dividends.

When we do compute unexpected differences in the proportion of payers using separate regressions for payers and non-payers, we find, not surprisingly, that the unexpected differences are much smaller than those reported in Table 4. (These results are not reported in a table.) The largest average unexpected difference is observed in France, while smaller, but still statistically significant unexpected differences are observed in the U.S. and Germany. Statistically insignificant average annual unexpected differences are observed in Canada, the U.K., and Japan.

Two other concerns are that (i) both the chosen base period (1989-93) and the forecast period (1994-02) are much shorter than those in the Fama and French (2001) study (1963-77 and 1978-98 respectively), and (ii) there is a sharp change in the sample size between the base period and the forecast period. Although these concerns are somewhat alleviated by the persistence of the forecast errors across countries and the similarity of our findings with those in Fama and French (2001), we nonetheless conduct some additional tests. We calculate forecast errors (the difference between the expected and the actual percents of dividend payers) obtained using five different base periods – 1987-91, 1988-92, 1989-93, 1990-94 and 1991-95. The choice of the earliest base period is determined by the unavailability of monthly pricing data on Worldscope before 1987. In all countries except the U.K. and Japan, the unexpected change in the percents of payers is significantly positive regardless of the chosen base period. In the U.K., the forecast errors are statistically insignificant in case of the two most recent base periods. At the same time, they exhibit a clear upward trend in all cases, indicating a declining propensity of British firms to pay dividends.

Japan turns out to be the only country for which the inference regarding the trend in the propensity to pay is sensitive to the choice of the base period. Moving the base period back from the main case choice of 1989-93 first leads to insignificant and then to negative forecast errors, while moving it forward results in positive errors. It is not clear, however, whether this change in trend is real or an artifact of a changing sample composition over time. Our requirement of consolidated financial statements severely affects the sample size in Japan in the earlier parts of our sample period. For example, between 33% and 41% of Japanese firms are excluded by this requirement in the 1989 to 1991 period. By 2002, only 22% of the Japanese firms are excluded.

4.3. Summary

The analysis in this section yields several conclusions. First, our regression analysis confirms the impact of firm characteristics on dividend decisions. In all six countries, larger and more profitable firms are more likely to pay dividends, while the effect of growth opportunities is conditional on a country's legal origin. Consistent with the findings of LLSV (2000), firms with more valuable growth opportunities are less likely to pay dividends in the common law countries, while in the civil law countries the corresponding relationship is mixed. Second, in the last decade the composition of the population of firms in all countries changes towards greater representation of firms with characteristics typical of non-payers. Third, in all countries except Japan the decline in the actual proportion of payers is deeper than what is predicted by the regressions estimates. Finally, separate regressions for firms with different lagged dividend status reveal that in all countries dividend decisions are sticky, so that given firm characteristics, payers are more likely to continue paying than non-payers to initiate dividends.

5. Further Evidence on the Role of Catering Incentives

As stated earlier, Baker and Wurgler (2004a,b) offer an intriguing explanation for the declining propensity to pay dividends among U.S. firms. Under their catering hypothesis, fluctuations in the demand for dividend-paying stocks are driven by investor sentiment. More specifically, managers cater to investor demand for dividends by paying dividends when investors place a valuation premium on dividend payers and not paying dividends when there is no such valuation premium on dividend payers. As evidence in support of the catering hypothesis, Baker and Wurgler (2004a) show that the dividend premium is related to the rate of dividend initiations and omissions. Furthermore, Baker and Wurgler (2004b) show that the

dividend premium explains a substantial portion of the decline in the propensity of U.S. firms to pay dividends in the post-1977 period. In this section, we provide further evidence on the catering hypothesis by testing implications of the hypothesis using our international dataset.

5.1. The dividend premium

We begin in Table 5 by reporting annual dividend premiums and the unexpected percent of dividend payers in each country. Following Baker and Wurgler (2004a,b), the dividend premium is defined as the difference between the log of the value-weighted market-to-book ratio of the dividend payers and that of the non-payers, where the weight is the book value of total assets. The expected percent of dividend payers is again determined by first estimating the Table 3 regressions annually over the 1989 to 1993 period, then applying the average coefficients to the actual firm characteristics in the subsequent years. The unexpected percent of dividend payers is equal to the difference between the percentage expected from the regression estimates and the actual percentage of dividend payers in the sample. The reported values of the dividend premium are calculated as of calendar year-ends for all countries except Japan, where they are calculated as of March 31 in each year. The choice of the different date for Japan is determined by the observation that the majority of Japanese firms use March 31 as the fiscal year-end date, while for the majority of firms in other countries the end of a fiscal year coincides with calendar year-end.

As shown in Table 5, the values of the dividend premium are consistently negative in the U.S. and Canada, and largely positive in Germany, France and Japan. In the U.K., the dividend premium is consistently positive until 1996, mostly negative from 1996 to 2000, then positive again in 2001 and 2002. In contrast to the differences in the dividend premium across countries,

the difference between the expected and the actual percent of dividend payers is generally positive in all countries. This evidence appears at odds with the catering hypothesis.

5.2. Regression estimates

To explore the issue more fully, we estimate regressions identical to those in Baker and Wurgler's (2004a) original test of the catering hypothesis. Specifically, we define the following rates:

$$Initiate_t = \frac{New\ Payers_t}{Nonpayers_{t-1} - Delist\ Nonpayers_t} \quad (1)$$

$$Continue_t = \frac{Old\ Payers_t}{Payers_{t-1} - Delist\ Payers_t} \quad (2)$$

$$Listpay_t = \frac{List\ Payers_t}{List\ Payers_{t-1} + List\ Nonpayers_t} \quad (3)$$

where $Payers_t$ is the total number of sample firms that pay dividends in year t , $Non-payers_t$ is the total number of sample firms that do not pay dividends in year t , $NewPayers_t$ is the number of payers in year t that were present in the sample in the preceding year but did not pay dividends, $OldPayers_t$ is the number of dividend-paying firms in year t that also paid dividends in year $t-1$, $DelistPayers_t$ is the number of dividend payers that were in the sample in year $t-1$ but are not in the sample in year t and $DelistNon-payers_t$ is the number of non-payers that were in the sample in year $t-1$ but are not in the sample in year t . The catering hypothesis predicts positive slopes on the dividend premium in regressions

$$Initiate_t = a + bP_{t-1}^{D-ND} \quad (4)$$

$$Continue_t = a + bP_{t-1}^{D-ND} \quad (5)$$

$$Listpay_t = a + bP_{t-1}^{D-ND} \quad (6)$$

Table 6 reports the results from estimating these regressions over the period of 1989 to 2002. Consistent with the evidence of Baker and Wurgler (2004a), the slope on the dividend premium in the U.S. in the regression for dividend continuations is positive and significant at the 1% level, while the corresponding slopes in the regressions for dividend initiations and list payments are positive and significant at the 10% level. In the remaining countries, positive and significant slopes are observed for dividend initiations and list payments in Canada, for list payments in the U.K. and for continuations in France. Weaker results in these countries relative to those in the U.S. are not necessarily inconsistent with the catering theory, as the lack of significance can be attributed to the relatively few time-series observations used in the regression analysis. However, the negative and significant slopes on the dividend premium for initiations and list payments in Japan contradict the predictions of the catering theory.

We next follow Baker and Wurgler (2004b) and explore whether the dividend premium helps explain fluctuations in the propensity to pay dividends in our sample countries. Specifically, we estimate the regression

$$\Delta ERR_t = a + bP_{t-1}^{P-NP} \quad (7)$$

where $\Delta ERR_t = ERR_t - ERR_{t-1}$. We define the unexpected proportion of payers ERR_t as the difference between the expected and the actual percentage of dividend payers. The catering theory thus predicts a negative slope on the lagged dividend premium in regression (7).⁵ To ensure robustness of the results to autocorrelation in the data, we use the generalized method of moments procedure. We also standardize the explanatory variables to have a variance of 1 in order to ensure compatibility with the results of Baker and Wurgler (2003, 2004b).

⁵ Our definition of the unexpected proportion of dividend payers conforms with Fama and French (2001). Note, however, that Baker and Wurgler (2004b) define the unexpected proportion of dividend payers as the difference between the actual proportion of payers and the expected proportion. Thus, their tests of the catering hypothesis predict a positive slope on the lagged dividend premium.

The results of estimating regression (7) for the sample countries are reported in Table 7. For the full 1989 to 2002 period, the slopes on the dividend premium are negative and significant in the U.S. and in the U.K. By contrast, the slopes are significantly positive in Germany and Japan. If we limit the analysis to the 1994 to 2002 period, we observe a significantly negative slope coefficient only in the U.K. Contrary to the predictions of the catering hypothesis, we observe positive slope coefficients in Germany and France.

We again examine the robustness of our findings to the choice of base period. In untabulated results, we estimate regression (7) with the base periods of 1988-92, 1989-93, 1990-94, and 1991-95. We choose 1988-92 as the earliest base period because we use monthly pricing data in constructing the dividend premium, and those data are not available on Worldscope prior to 1987. In general, the estimated slopes maintain their significance across the reported base periods. For instance, the slopes in the U.K. are negative and significant at the 1% level for all base periods. Similarly, the slopes in Germany are persistently positive and significant at the 5% level for all base periods, while the slopes in France are positive and significant for all base periods except 1988-92. Most importantly, regardless of base period, we do not observe any negative slope coefficients in civil law countries.

We also examine the sensitivity of our findings to the specification of the regression specification. Specifically, rather than estimating the incremental unexpected proportion of dividend payers as a function of the lagged dividend premium, we estimate the regression

$$ERR_t = a + bP_{t-1}^{P-NP} \quad (8)$$

That is, we test whether the unexpected proportion of dividend payers in year t is a function of the dividend premium in year t-1. The results of estimating regressions (8) (not reported in a table) reveal some differences in terms of which countries exhibit significant

slopes. For example, negative and significant slopes are now observed in the U.S., and positive and significant slopes are observed in Japan. Nonetheless, our qualitative conclusions remain unchanged. We find limited support for the catering hypothesis in common law countries and contradictory evidence in some civil law countries.

5.3. Catering or agency?

Overall, our evidence fails to provide much support for the catering hypothesis outside the U.S., particularly in the civil law countries. One explanation for this is that managers in those countries may be less inclined to cater to investor preferences because they are less concerned with maximizing shareholder wealth. While this is possible, it doesn't explain the significant negative slopes on the dividend premium in Japan in the regressions for dividend continuation rates and positive slopes in the regressions for unexpected proportions of dividend payers in France and Germany unless one believes that managers in those countries have the incentive to make decisions that systematically reduce shareholder wealth.

Another possibility is that our tests of the catering hypothesis lack power in the civil law countries. Again, this is possible given the smaller sample sizes for the regressions, but it cannot explain the reversal in the sign of the slope coefficients in the civil law countries. More importantly, one of the slopes inconsistent with the catering theory is observed in the regression for dividend continuations in Japan, which is the one civil law country for which the sample size is as large as the sample sizes in the common law countries (see the Appendix).

A third possibility is that the dividend premium is a proxy for the relative growth opportunities of dividend payers and non-payers rather than a measure of investor sentiment. To see this, recall that Baker and Wurgler define the dividend premium (P_t^{D-ND}) as the difference

between the log of the value-weighted market-to-book ratio of dividend payers and that of non-payers. More precisely,

$$P_t^{D-ND} = \log\left(\sum_i w_{ii}^d \frac{V_{ii}^d}{A_{ii}^d}\right) - \log\left(\sum_i w_{ii}^{nd} \frac{V_{ii}^{nd}}{A_{ii}^{nd}}\right) \quad (8)$$

where P_t^{D-ND} is the dividend premium in year t , V_{ii}^d and A_{ii}^d are the market value and total assets of firm i in the subset of payers in year t , V_{ii}^{nd} and A_{ii}^{nd} are the market value and total assets of firm i in the subset of non-payers in year t , and w_{ii}^d and w_{ii}^{nd} are the corresponding weights. Weighing

by book assets implies that $w_{ii}^d = \frac{A_{ii}^d}{\sum_j A_{ij}^d}$ and

$$\sum_i w_{ii}^d \frac{V_{ii}^d}{A_{ii}^d} = \sum_i \frac{A_{ii}^d}{\sum_j A_{ij}^d} \cdot \frac{V_{ii}^d}{A_{ii}^d} = \frac{\sum_i V_{ii}^d}{\sum_i A_{ii}^d} \quad (9)$$

Similarly,

$$\sum_i w_{ii}^{nd} \frac{V_{ii}^{nd}}{A_{ii}^{nd}} = \frac{\sum_i V_{ii}^{nd}}{\sum_i A_{ii}^{nd}} \quad (10)$$

The last two expressions define the aggregate market-to-book ratios of payers and non-payers that Fama and French (2001) use as a measure of growth opportunities. In this sense, it is not clear whether Baker and Wurgler's (2004a,b) dividend premium measure captures investor sentiment for dividends or the market's perception of the relative growth opportunities of payers and non-payers. This distinction is potentially important because, as discussed earlier, the empirical relation between dividends and growth opportunities differs between common law and civil law countries. In common law countries, dividends are negatively related to measures of growth opportunities, while in civil law countries the relation tends to be positive. Thus, in

common law countries, we would expect a greater frequency of dividend initiations when the relative growth opportunities of the non-payers are poor. In civil law countries, if anything, we would expect to observe a lower frequency of dividends when the relative growth opportunities of the non-payers are poor. In this sense, the evidence in Tables 6 and 7 can be viewed as consistent with a framework in which (i) dividends are determined in part by growth opportunities, and (ii) the dividend premium measures the relative growth opportunities of payers and non-payers.

6. Discussion and Conclusions

Our evidence reveals important similarities in the evolution of corporate dividend decisions in the U.S., Canada, U.K., Germany, France and Japan. In all six countries, dividends are affected by firm size, profitability, and growth opportunities. Consistent with the prior literature, larger and more profitable firms are more likely to pay dividends in all countries, while the effect of growth opportunities on the likelihood of dividend payments depends on a country's legal origin. However, after controlling for these characteristics, the proportion of dividend payers declines in all six countries between 1989 and 2002. This implies that phenomenon of declining propensity to pay dividends, first reported for U.S. firms in Fama and French (2001) is quite general.

The robustness of the declining propensity to pay phenomenon allows us to construct an out-of-sample test of Baker and Wurgler's (2004a,b) catering hypothesis. To date, this hypothesis has received the strongest empirical support as an explanation for the disappearance of dividends among U.S. firms. However, we find considerably weaker evidence of catering effects in the common law countries of Canada and the U.K. More importantly, regression tests of the catering hypothesis in the civil law countries of Germany, France, and Japan consistently yield coefficients on the dividend premium that are opposite in sign to what the catering theory predicts. We argue that that these

findings support the view that the dividend premium is a measure of relative growth opportunities of payers and non-payers rather than a measure of investor sentiment for dividends. As such, the evidence in all countries can be viewed as consistent with the relative growth opportunities explanation.

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Appendix

Average number of firms satisfying data availability requirements by country.

	All Firms				Dividend Payers				Non-Payers			
	1981-85	1986-90	1991-95	1996-02	1981-85	1986-90	1991-95	1996-02	1981-85	1986-90	1991-95	1996-02
<i>Civil Law Countries</i>												
Argentina		2	11	25		2	7	14		1	4	11
Austria	1	7	21	52	0	6	17	38	0	1	4	14
Belgium	6	14	30	53	5	12	25	37	0	2	4	16
Denmark	17	36	83	108	15	28	58	80	3	7	25	28
Finland	13	27	62	98	13	26	48	86	0	1	14	12
France	100	199	390	515	72	173	307	348	28	27	83	167
Germany	54	90	195	356	45	76	151	201	9	14	45	155
Indonesia			34	91			34	53			0	38
Italy	11	62	110	124	9	58	80	88	2	5	30	35
Japan	124	490	1152	1938	121	435	1038	1639	3	56	114	299
South Korea	0	5	57	155	0	5	47	111	0	0	10	43
Mexico	10	17	41	67	5	11	28	32	6	6	13	35
Netherlands	28	47	88	112	24	40	68	77	5	7	20	35
Norway	3	28	68	114	2	14	38	55	1	14	30	59
Philippines		2	14	49		1	9	19		0	4	30
Portugal		1	17	35		1	13	25		0	4	11
Spain	4	16	66	77	3	15	45	52	1	2	22	25
Sweden	28	45	108	204	28	44	83	124	0	2	25	79
Switzerland	18	47	91	139	15	43	72	104	3	4	19	35
Taiwan		0	22	172		0	10	68		0	12	104
Turkey			4	22			4	13			0	9
<i>Common Law Countries</i>												
Australia	40	83	154	348	39	69	116	190	2	14	38	158
Canada	114	180	305	524	94	126	160	151	20	53	145	373
Hong Kong	12	30	77	335	12	27	72	194	1	3	5	140
India		0	0	2		0	0	2		0	0	0
Ireland	0	23	43	51	0	20	30	31	0	3	14	21
Malaysia	18	32	127	330	17	29	118	247	1	3	9	83
New Zealand	7	12	25	47	7	11	22	39	0	1	3	8
Singapore	19	23	75	214	17	22	69	159	2	1	6	56
South Africa	47	67	119	216	46	65	112	133	1	2	7	83
Thailand		1	61	150		0	53	81		0	8	69
U.K.	207	581	1041	1160	201	544	893	842	6	37	148	318
U.S.	5	808	1685	3749	3	509	792	853	2	299	893	2896

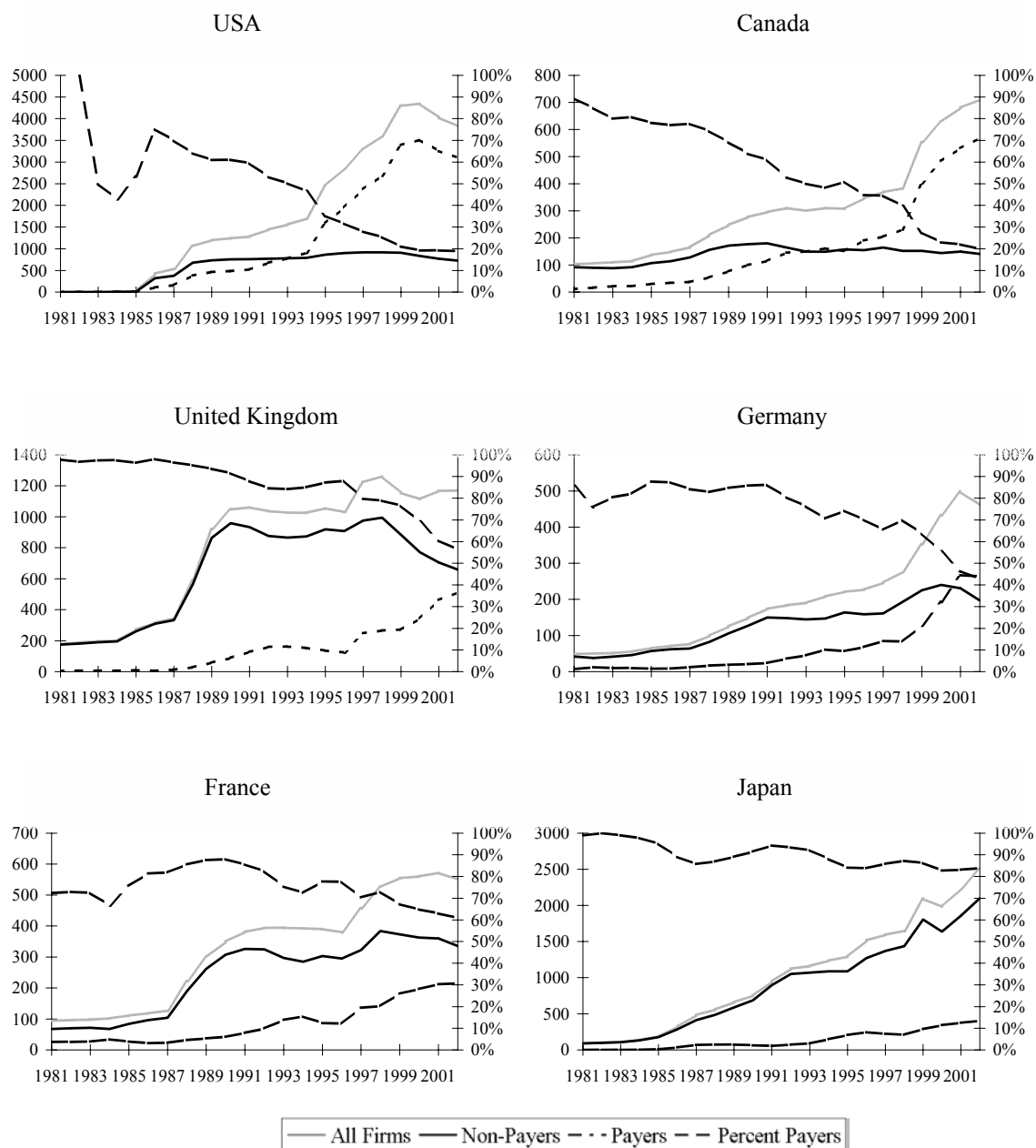


Figure 1. Annual number of observations and percentage of dividend payers by country. The sample includes all companies in the U.S., Canada, U.K., Germany, France, and Japan in the Worldscope database over the period 1981-2002 that satisfy the data availability requirements.

Table 1
Characteristics of Payers and Non-Payers

Reported values are averages of annual median values for measures of profitability, growth opportunities, and firm size over the period of 1989-2002. Profitability (E_t/A_t) is measured as the ratio of earnings before interest but after tax to the book value of total assets. Growth opportunities (V_t/A_t) is measured as the market value of the firm to the book value of total assets. Firm size (A_t) is measured as the book value of total assets and reported in millions of units of the local currency.

Country	Profitability		Growth Opportunities		Firm Size
	E_t/A_t	Y_t/BE_t	V_t/A_t	dA_t/A_t	A_t
U.S. (US\$)					
Payers	7.5	11.6	1.39	5.5	717
Non-payers	4.0	3.6	1.45	7.7	98
Canada (Can\$)					
Payers	6.3	8.1	1.17	6.5	794
Non-payers	2.0	0.0	1.23	8.5	142
United Kingdom (£)					
Payers	7.7	12.9	1.35	6.9	73
Non-payers	-1.2	-6.8	1.40	2.2	17
Germany (€)					
Payers	4.9	9.2	1.27	6.3	326
Non-payers	1.2	-4.3	1.27	-1.2	154
France (€)					
Payers	5.6	10.8	1.18	6.8	257
Non-payers	3.1	2.1	1.14	2.4	104
Japan (¥)					
Payers	2.7	4.2	1.25	2.9	78,585
Non-payers	1.8	-1.0	1.34	-1.5	45,875

Table 2
The Evolution of Firm Characteristics

Reported values are period averages of annual median values for measures of profitability, growth opportunities, and firm size. Profitability (E_t/A_t) is measured as the ratio of earnings before interest but after tax to the book value of total assets. Growth opportunities (V_t/A_t) is measured as the market value of the firm to the book value of total assets. Firm size (A_t) is measured as the book value of total assets and reported in millions of units of the local currency.

	E_t/A_t			V_t/A_t			A_t		
	1989-1993	1994-1998	1999-2002	1989-1993	1994-1998	1999-2002	1989-1993	1994-1998	1999-2002
U.S.	7.0	6.4	3.0	1.28	1.57	1.38	268	173	125
Canada	4.7	5.4	2.5	1.13	1.26	1.21	333	351	112
United Kingdom	7.9	7.5	4.3	1.28	1.46	1.30	45	53	57
Germany	4.4	4.5	3.1	1.30	1.25	1.20	343	251	127
France	5.8	5.0	4.5	1.11	1.17	1.26	261	199	110
Japan	3.7	2.3	1.6	1.55	1.19	0.97	104,063	71,341	42,440

Table 3
Logit regressions to explain dividend payout decisions

The dependent variable equals 1 if the firm pays dividends in year t and 0 otherwise. The explanatory variables are $Size$, V_t/A_t , dA_t/A_t and E_t/A_t . $Size$ is the percent of firms in the benchmark population with smaller market capitalization at the end of a firm's fiscal year t . V_t , A_t and E_t are the firm's market value in year t , its total assets and earnings before interest, respectively. $dA_t = A_t - A_{t-1}$. The reported values of the regression coefficients are obtained by averaging the coefficients from annual regressions over the 1989 to 2002 period. The t statistics are obtained by dividing average coefficients by their standard deviations over the sub-period and multiplying the result by the number of years in the sub-period.

	Average coefficient					t -statistic				
	Int	Size	V_t/A_t	dA_t/A_t	E_t/A_t	Int	Size	V_t/A_t	dA_t/A_t	E_t/A_t
USA										
All firms	-1.58	4.29	-0.61	-1.18	5.74	-9.72	67.27	-15.56	-4.27	9.49
Payers	1.61	3.98	-0.41	-0.14	7.93	12.16	14.61	-6.64	-0.34	9.02
Non-payers	-4.49	1.69	-0.21	-0.08	1.35	-31.30	17.71	-4.23	-1.51	2.69
Canada										
All firms	-1.35	3.92	-0.55	-1.58	8.01	-10.72	25.36	-11.00	-5.15	12.50
Payers	-0.60	3.98	1.16	-0.46	10.17	-1.40	11.48	2.66	-0.55	5.38
Non-payers	-3.04	2.20	-1.13	-1.21	10.40	-7.14	2.88	-3.89	-2.81	4.21
United Kingdom										
All firms	0.78	3.67	-0.50	-0.66	6.82	4.59	20.94	-11.43	-2.57	7.72
Payers	1.84	3.86	-0.19	1.21	4.95	10.35	11.34	-1.68	3.08	4.22
Non-payers	-1.43	1.10	-0.25	0.16	6.64	-7.72	4.28	-7.04	0.81	6.34
Germany										
All firms	-0.26	2.17	-0.03	2.82	7.61	-1.03	6.69	-0.29	4.20	5.38
Payers	0.29	2.00	0.63	3.83	16.13	0.42	3.08	1.91	2.13	2.37
Non-payers	-2.34	1.84	-0.52	3.32	18.14	-3.90	3.62	-2.52	3.33	1.84
France										
All firms	-0.02	2.54	-0.19	0.60	10.24	-0.13	12.11	-2.34	1.41	12.57
Payers	1.04	2.83	0.13	0.57	11.88	4.06	5.62	0.75	1.34	8.57
Non-payers	-2.20	1.53	-0.21	0.30	10.40	-5.59	4.02	-0.99	0.52	3.45
Japan										
All firms	1.78	2.48	-0.64	3.84	5.85	14.66	13.13	-8.26	7.82	2.44
Payers	2.61	1.46	0.10	3.68	29.26	8.84	3.69	0.50	2.14	2.12
Non-payers	-1.49	1.21	-0.44	4.07	4.17	-3.84	2.92	-2.02	3.99	1.71

Table 4

Out-of sample estimates from logit regressions of the percent of firms paying dividends

Annual logit regressions are estimated to explain which firms pay dividends from 1989 to 1993 using all firms present in the sample. The explanatory variables are *Size*, V_t/A_t , dA_t/A_t and E_t/A_t . $Size = \log(ME_t/bmkME_t)$, where ME_t is the firm's market capitalization in year t , and $bmkME_t$ is the median market capitalization of firms in the benchmark population in year t . V_t , A_t and E_t are the firm's market value in year t , its total assets and earnings before interest, respectively. $dA_t = A_t - A_{t-1}$. The Firms and the Payers column show the total number of firms in the sample and the number of dividend payers, respectively. Actual Percent is the percent of payers. The values in the Expected Percent column are obtained by averaging regression coefficients for 1989-93, applying the average coefficients to estimate the probability that each firm will pay dividends in subsequent years, averaging that probability across firms for each year and multiplying the result by 100.

USA

Year	Firms	Payers	Actual Percent	Expected Percent	Expected - Actual
1994	1694	789	46.6	52.3	5.7
1995	2453	863	35.2	41.2	6.0
1996	2853	900	31.5	38.8	7.2
1997	3288	916	27.9	36.2	8.4
1998	3603	914	25.4	35.6	10.2
1999	4299	906	21.1	32.0	10.9
2000	4346	835	19.2	32.3	13.1
2001	4028	772	19.2	34.3	15.2
2002	3828	728	19.0	39.1	20.1

Canada

Year	Firms	Payers	Actual Percent	Expected Percent	Expected - Actual
1994	310	149	48.1	56.6	8.5
1995	308	157	51.0	57.9	6.9
1996	346	155	44.8	51.8	7.0
1997	369	164	44.4	47.5	3.1
1998	383	152	39.7	46.4	6.7
1999	554	152	27.4	39.1	11.6
2000	628	144	22.9	35.0	12.1
2001	681	150	22.0	32.6	10.6
2002	710	141	19.9	31.9	12.0

United Kingdom

Year	Firms	Payers	Actual Percent	Expected Percent	Expected - Actual
1994	1026	873	85.1	87.3	2.2
1995	1055	920	87.2	87.4	0.1
1996	1031	908	88.1	86.4	-1.6
1997	1223	975	79.7	81.7	2.0
1998	1261	995	78.9	80.0	1.1
1999	1154	883	76.5	79.0	2.5
2000	1114	771	69.2	74.9	5.7
2001	1168	706	60.4	71.8	11.4
2002	1170	659	56.3	69.2	12.9

Germany

Year	Firms	Payers	Actual Percent	Expected Percent	Expected - Actual
1994	208	147	70.7	79.9	9.2
1995	221	164	74.2	80.4	6.2
1996	227	159	70.0	78.5	8.5
1997	246	161	65.4	79.5	14.0
1998	276	193	69.9	81.2	11.3
1999	353	225	63.7	83.1	19.3
2000	433	240	55.4	78.1	22.7
2001	498	231	46.4	63.1	16.7
2002	461	197	42.7	56.5	13.8

Table 4 Continued

France						Japan					
Year	Firms	Payers	Actual Percent	Expected Percent	Expected - Actual	Year	Firms	Payers	Actual Percent	Expected Percent	Expected - Actual
1994	393	285	72.5	83.9	11.3	1994	1235	1088	88.1	90.6	2.5
1995	390	303	77.7	83.1	5.4	1995	1291	1086	84.1	92.0	7.9
1996	380	295	77.6	81.2	3.6	1996	1515	1270	83.8	91.5	7.6
1997	458	322	70.3	82.3	12.0	1997	1593	1368	85.9	92.0	6.2
1998	526	384	73.0	82.1	9.1	1998	1647	1437	87.2	91.7	4.4
1999	555	373	67.2	81.3	14.1	1999	2092	1805	86.3	89.1	2.8
2000	560	363	64.8	79.9	15.1	2000	1980	1638	82.7	90.4	7.7
2001	572	360	62.9	75.5	12.6	2001	2234	1858	83.2	91.0	7.8
2002	551	336	61.0	72.1	11.1	2002	2505	2100	83.8	88.4	4.6

Table 5

Dividend premiums and the unexpected proportion of dividend payers

Market-to-book (M/B) ratio columns report aggregate ratios (aggregate market value of firms in the group divided by their aggregate book value). The dividend premium is the difference between the logs of the aggregate market-to-book ratios of payers and non-payers. Expected – Actual is the difference between the expected percentage of dividend payers based on the out-of-sample estimates in Table 4 and the actual percentage of payers for that calendar year.

	United States				Canada				United Kingdom			
	M/B non-payers	M/B payers	Dividend premium	Expected - Actual	M/B non-payers	M/B payers	Dividend Premium	Expected - Actual	M/B non-payers	M/B payers	Dividend Premium	Expected - Actual
1994	1.67	1.51	-9.6	5.7	1.32	1.24	-6.0	8.5	1.27	1.52	17.8	2.2
1995	1.95	1.68	-15.2	6.0	1.33	1.27	-4.8	6.9	1.58	1.63	3.4	0.1
1996	1.96	1.77	-10.2	7.2	1.56	1.33	-15.5	7.0	2.10	1.71	-20.8	-1.6
1997	2.16	2.04	-5.8	8.4	1.59	1.36	-16.1	3.1	1.78	1.89	5.9	2.0
1998	2.29	2.21	-3.7	10.2	1.42	1.29	-9.1	6.7	2.10	2.08	-1.4	1.1
1999	2.97	2.13	-33.3	10.9	1.62	1.42	-13.6	11.6	3.78	2.37	-46.7	2.5
2000	2.63	1.98	-28.6	13.1	1.46	1.48	1.0	12.1	2.57	1.72	-40.0	5.7
2001	1.99	1.78	-11.2	15.2	1.48	1.34	-10.2	10.6	1.46	1.54	4.8	11.4
2002	1.55	1.68	8.2	20.1	1.28	1.24	-3.7	12.0	0.99	1.35	30.8	12.9

	Germany				France				Japan			
	M/B non-payers	M/B payers	Dividend premium	Expected - Actual	M/B non-payers	M/B payers	% Div Premium	Expected - Actual	M/B non-payers	M/B payers	% Div Premium	Expected - Actual
1994	1.24	1.22	-1.6	9.2	1.04	1.12	7.3	11.3	1.28	1.30	1.5	2.5
1995	1.24	1.24	0.6	6.2	1.00	1.12	11.7	5.4	1.27	1.30	2.7	7.9
1996	1.29	1.31	1.8	8.5	1.15	1.23	7.0	3.6	1.19	1.29	7.6	7.6
1997	1.32	1.40	5.4	14.0	1.26	1.38	8.6	12.0	1.02	1.20	16.2	6.2
1998	1.42	1.54	8.2	11.3	1.24	1.49	18.7	9.1	1.02	1.17	13.4	4.4
1999	1.65	1.73	5.0	19.3	1.53	1.77	14.7	14.1	1.05	1.50	35.6	2.8
2000	1.66	1.33	-22.3	22.7	1.68	1.58	-6.1	15.1	1.05	1.36	25.6	7.7
2001	1.14	1.26	10.3	16.7	1.64	1.42	-14.8	12.6	1.03	1.19	14.4	7.8
2002	1.05	1.10	4.1	13.8	1.21	1.31	7.8	11.1	0.93	1.10	16.8	4.6

Table 6
Dividend premiums and the propensity to pay dividends

The dependent variables are the rate of dividend initiations and continuations defined as follows:

$$Initiate_t = \frac{New\ Payers_t}{Nonpayers_{t-1} - Delist\ Nonpayers_t}$$

$$Continue_t = \frac{Old\ Payers_t}{Payers_{t-1} - Delist\ Payers_t}$$

$$Listpay_t = \frac{List\ Payers_t}{List\ Payers_{t-1} + List\ Nonpayers_t}$$

where $Payers_t$ is the total number of sample firms that pay dividends in year t , $Non-payers_t$ is the total number of sample firms that do not pay dividends in year t , $NewPayers_t$ is the number of payers in year t that were present in the sample in the preceding year but did not pay dividends, $OldPayers_t$ is the number of dividend-paying firms in year t that also paid dividends in year $t-1$, $DelistPayers_t$ is the number of dividend payers that were in the sample in year $t-1$ but are not in the sample in year t and $DelistNon-payers_t$ is the number of non-payers that were in the sample in year $t-1$ but are not in the sample in year t . The dividend premium is the difference between the logs of the aggregate market-to-book ratios of payers and non-payers. The t-statistics in brackets are calculated using standard errors robust to heteroskedasticity and serial correlation up to four lags.

	Dependent Variable		
	Initiate _t	Continue _t	Listpay _t
United States			
Intercept	0.04 [3.05]	0.98 [194.0]	0.19 [2.58]
Slope	0.08 [1.93]	0.15 [9.12]	0.39 [1.93]
Canada			
Intercept	0.05 [7.05]	0.93 [89.94]	0.29 [7.32]
Slope	0.08 [2.51]	0.00 [0.01]	0.96 [3.91]
United Kingdom			
Intercept	0.40 [3.85]	0.96 [146.3]	0.57 [10.58]
Slope	-0.01 [-0.03]	0.01 [0.65]	0.54 [5.00]
Germany			
Intercept	0.20 [12.31]	0.91 [61.07]	0.60 [7.07]
Slope	-0.24 [-0.73]	0.00 [0.01]	-0.56 [-0.98]
France			
Intercept	0.23 [6.00]	0.92 [159.0]	0.63 [6.98]
Slope	0.31 [1.36]	0.17 [3.82]	0.08 [0.14]
Japan			
Intercept	0.19 [6.12]	0.97 [169.1]	0.89 [178.2]
Slope	0.13 [0.57]	-0.09 [-4.78]	-0.29 [-7.05]

Table 7**Regressions of unexpected percents of dividend payers on the dividend premium**

The dependent variable is the change in the difference between the expected and the actual percent of dividend payers from Table 4 year $t-1$ to t . The independent variable in all specifications is the dividend premium from Table 5. In both model, the dependent variable in year t is regressed on the value of independent variable in year $t-1$. The dividend premium is normalized to have the variance of 1. The t -statistics in brackets are calculated using standard errors robust to heteroskedasticity and serial correlation up to four lags.

	Intercept	Slope
USA		
1989-2002	1.02 [1.69]	-0.39 [-1.80]
1994-2002	1.84 [2.35]	-0.14 [-0.63]
Canada		
1989-2002	1.79 [2.66]	0.57 [1.16]
1994-2002	-0.50 [-0.66]	-0.72 [-1.40]
United Kingdom		
1989-2002	1.04 [2.09]	-1.21 [-1.71]
1994-2002	0.58 [1.50]	-2.21 [-6.51]
Germany		
1989-2002	1.34 [1.35]	1.94 [3.25]
1994-2002	1.11 [1.04]	2.37 [3.57]
France		
1989-2002	0.15 [0.20]	0.72 [1.03]
1994-2002	-0.14 [-0.25]	1.33 [2.40]
Japan		
1989-2002	-0.33 [-0.39]	0.83 [1.95]
1994-2002	0.52 [0.22]	0.09 [0.06]