Has the Propensity to Pay Out Declined?

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Abstract

Several recent studies have documented a significant decline in the propensity to pay dividends over the past 30 years. However, dividends are only one component of a firm’s payout policy and it is unclear whether the proportion of firms making net positive payments to shareholders has also declined. Using various measures of the net cash flowing back to shareholders, we find that the propensity to pay out has been relatively constant over the past three decades. Moreover, we find that among firms with low retained earnings there is actually an increasing propensity to distribute cash to equity holders.
1. Introduction

Over the past 30 years, public firms in the U.S. appear increasingly reluctant to return cash to shareholders through dividend payments. For example, Fama and French (2001) show that the proportion of firms paying dividends falls sharply from 1978 to 1999, even after conditioning on some firm characteristics. More recently, DeAngelo et al (2006) find that among those firms most likely to be dividend payers (e.g., firms with high retained earnings), the declining propensity to pay is even larger than the one documented by Fama and French (2001). This unexplained, large-scale disappearance of dividend payers represents a significant puzzle in corporate finance.

From a capital markets perspective, evidence of a declining propensity to pay dividends raises important questions about the allocation of corporate funds. If firms that should be paying dividends are avoiding dividends, then what are these firms doing with their excess cash? Of course, dividends are only one component of a firm’s payout policy and it is unclear whether the proportion of firms making net positive cash payments to shareholders has also declined.

One limitation of existing studies is that different channels of equity flows (both into and out of the firm) are often analyzed in isolation, rather than taken as a whole. For example, if a firm cuts its dividends, raises equity, and repurchases shares all at the same time (as some firms do), it is not clear whether the firm is on net returning cash to the capital markets or raising additional funds. This is important because, theoretically, investors should be more concerned about the net funds returned to the capital markets than about the amount of cash distributed through dividends (see Modigliani and Miller (1961)). Consistent with this view, recent empirical studies indicate that the net cash flows flowing back to shareholders are more informative about asset prices than are dividends (Boudoukh et al (2007)).
In this paper we directly test the hypothesis that the \textit{net} propensity to return cash to shareholders has changed over time. Specifically, we use the framework in Fama and French (2001) and DeAngelo et al (2006) to estimate both actual and expected payers. However, instead of focusing on the time-series behavior of dividend payers, we examine the time-series behavior of firms with positive net payouts (dividends plus share repurchases minus equity issues). By measuring net total payouts, as opposed to dividends, we form a metric that has both theoretical and empirical advantages in gauging a firms’ total net propensity to return cash to the capital markets.

Using various measures of the net cash flowing back to shareholders, we find that the propensity to pay out has been relatively constant over the past 30 years. In most specifications, we find no trend at all in the net propensity to pay and our results are consistent across a number of alternative methods of measuring payouts and to different econometric specifications. We also find that the decline in the propensity to pay dividends among firms with high retained earnings documented by DeAngelo et al (2006) essentially disappears when we consider net payouts instead of dividends. Thus, our results indicate that the propensity to be a positive net payer has not changed over time even among the group of firms that experienced the largest decline in the propensity to pay dividends.

There are two main reasons why our results are different from previous studies. The first reason is that we consider a broader set of firm characteristics to predict whether a firm is expected to pay dividends. Our expanded set of firm specific factors is based on both theory and recent empirical evidence on the propensity to pay dividends. Specifically, in addition to the firm characteristics considered by Fama and French (2001), we include the firm’s retained earnings as a fraction of total assets (as in DeAngelo et al (2006)), the volatility of the firm’s
equity (as in Hoberg and Prabhala (2005)), and a measure of firm age (to proxy for the life-cycle of the investment opportunity set) following Fink et al (2007). Empirically, all three variables are statistically and economically significant predictors of firms’ propensity to pay dividends. Although these factors mitigate the extent of the puzzle, they cannot resolve the entire puzzle. More importantly, we find that these factors do little to explain the disappearance of dividends among firms with the highest retained earnings – where the puzzle is most severe.

The remainder of the puzzle is solved by including share repurchases and equity issues in our propensity to pay measure. At any given time a significant number of firms classified as non-dividend payers are actually positive net payers (e.g., they distribute cash to shareholders through share repurchases). But equally important is the fact that a non-trivial number of firms that are classified as dividend payers are actually negative net payers (e.g., they raise more money through equity issues than they pay out to shareholders). Over our entire sample period and across all firms, examining only dividend behavior leads to a misclassification rate of roughly 15 percent. Moreover, we illustrate that these classification issues are most important in the latter sub-period of the sample and for firms with relatively high retained earnings. Since this is exactly where the documented dividend puzzle is most severe, this classification issue can distort inferences about whether firms are returning money to the capital markets.

Our empirical results reveal another intriguing pattern: for a subset of firms, there is actually an increasing propensity to pay out cash to shareholders over the last several decades. We find that less profitable firms – those with relatively low retained earnings – are more likely today to return cash to their shareholders than would have been the case 30 years ago. Since share buybacks give these firms a way to return cash to stockholders without committing to paying a certain level of dividends, they may now be more likely to distribute cash to
shareholders than they were in the past. These findings are supported by recent survey evidence presented in Brav et al (2005), who show that many corporate managers now prefer share repurchases as a method of payment because of their perceived flexibility relative to dividends.

The results presented in this paper are important for understanding the nature of why and how firms return cash to shareholders. Fama and French (2001) interpret their results as evidence that the perceived benefits of dividends have diminished over the last several decades. They suggest as candidate explanations (i) lower transactions costs that make it cheaper for investors to create homemade dividends (ii) larger holdings of options by management who prefer capital gains to dividends (iii) better corporate governance that reduces the benefit of dividends in terms of controlling agency problems. Our findings are consistent with (i) and (ii), but not (iii). The lower cost of replicating dividends and the increased use of options may have contributed, at least in part, to the growing substitution of repurchases for dividends documented by Grullon and Michaely (2002) and Skinner (2007). This leads to no net change in the propensity to pay out in any fashion. However, our findings do not support the hypothesis that the benefits of paying out cash as a method of reducing agency problems have substantially declined. Since the propensity to pay out cash has not declined when net payouts are considered, it is entirely possible that disgorging cash through dividends or repurchases still plays an important role in reducing agency problems.

The remainder of the paper is as follows. Section 2 describes the sample selection procedure, defines the variables, and provides summary statistics. Section 3 examines the time-series behavior of the propensity to pay dividends. In Section 4 we investigate whether the proportion of firms making net payments to shareholders has been declining over time. Section
5 provides a series of robustness checks for our results, and Section 6 presents concluding thoughts.

2. Sample and Data

Our sample selection procedure closely follows the one in DeAngelo et al (2006). We select firms that: (a) are domestic firms present on both CRSP and Compustat; (b) are not utilities or financials (SIC codes 4900 through 4999 or codes 6000 through 6999); (c) are publicly traded on the NYSE, NASDAQ or AMEX; (d) have CRSP codes 10 or 11; (e) have available data on dividends and earnings. These selection criteria generate a sample of 133,194 firm-year observations from 1972 to 2005. On average, we have 4,031 firms in our sample each year. The highest number of firms is 5,605 in 1997 and the lowest is 3,015 in 1973.

We classify a firm as a dividend payer if the total amount of dividends paid by the firm during a given fiscal year (Compustat item # 21) is greater than zero. Additionally, we classify a firm as a net payer if the net payout of the firm (dividends plus share repurchases minus equity issues) during a given fiscal year is greater than zero. Following Grullon and Michaely (2002) and Boudoukh et al (2007), we construct our main proxy of net payouts using data on share repurchases and equity issues from the flow of funds statement. Specifically, we define net total payouts as total dividends plus purchases of common and preferred stock (Compustat item # 115) minus sales of common and preferred stock (Compustat item # 108). We label this proxy variable as NTPAY. One advantage of this proxy over alternative measures is that we do not need to make assumptions regarding the prices at which the company issues or buys back shares because equity issues and share repurchases are expressed in total dollar amounts.1

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1 In Section 5.1 we demonstrate that our empirical results are not sensitive to alternative proxies for net payouts.
To control for the effect of firm characteristics on the propensity to pay, we use the following variables in our empirical analyses:

1) Firm size (NYE): This variable is equal to the percentile in which the firm falls on the distribution of equity market values for NYSE firms in year $t$.

2) Market-to-book ratio (M/B): This variable is defined as the ratio of firm value to the book value of total assets (Compustat item # 6) where firm value is measured as the market value of equity (Compustat item # 25 times Compustat item # 199) plus the difference between total assets and total common equity (Compustat item # 60).

3) Return on assets (ROA): This variable is computed as the operating income before depreciation (Compustat item # 13) scaled by the book value of assets (Compustat item # 6).

4) Sales growth (SGR): This variable is computed as the annual percentage change in total sales (Compustat item # 12).

5) Volatility (VOL): This variable is computed as the annual standard deviation of daily stock returns.

6) Retained earnings to total assets (RE/TA): This variable is equal to retained earnings (Compustat item # 36) scaled by the book value of assets (Compustat item # 6).

7) Firm age (AGE): Following Fink et al (2007), we define age as the number of years since a firm’s founding, incorporation, or listing date (whichever is earliest).\(^2\) It is important to note that our methodology differs from the common alternative which is to use the date of a firm’s earliest occurrence on CRSP. Using the first CRSP

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\(^2\) We rely on a variety of sources for this data. Some data are graciously provided by Jovanovich and Rousseau (2001) and Loughran and Ritter (2004). In addition to these samples, we have also filled in/supplemented this database using incorporation and founding dates collected from various issues of the Mergent’s industrial manual, bank & finance manual, and OTC manual, all published by Moody's Investors Service.
appearance can induce a significant bias because the average age of a firm at its IPO date has fallen dramatically over the last forty years.

Table 1 contains descriptive statistics for our entire sample.\(^3\) While summary statistics over such a long time period are hard to interpret, it is useful to benchmark the magnitude of some sample characteristics. For example, most firms have a reasonable market-to-book ratio between one and two and the median return on assets (ROA) and sales growth rate (SGR) are both in the range of 11-12\%. The average firm in our sample is 27 years old, though there are many young firms. Given that the median age is 15 years old (in a 30 year sample), the declining propensity to pay dividends may be tied to the increase of listings by small, less profitable firms with more investment opportunities than the typical listed firm at the beginning of the sample. In general terms, our sample of firms represents the lion’s share of the whole market and most of the firm-specific data that we collect is consistent with past studies in terms of means, medians, standard deviations, etc.

3. **The Propensity to Pay Dividends**

In order to benchmark our results against past studies, we begin by replicating the main findings in Fama and French (2001) and DeAngelo et al. (2006). The basic empirical strategy is simple. First, we run firm level logit regressions of the “pay/no pay” decision for some initial formation period (in our base case, we use 1973-1978). Then, we use the coefficient estimates from this regression to predict which firms “should” pay dividends over the forecast period 1979-2005. Each year, we then compare the incidence of expected dividend payers (the forecast) to the incidence of actual dividend payers (the actual data). If there is no change in the

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\(^3\) To mitigate the effect of outliers, all the control variables are windsorized at the 1\(^{st}\) and 99\(^{th}\) percentiles. However, our empirical results remain virtually the same if we do not winsorize the data.
propensity to pay, then the difference between the forecast and the data should have no apparent
trending behavior. On the other hand, if there is a decreasing propensity to pay, then the annual
time series of forecasts of the propensity to pay would rise above the actual data, generating an
upward sloping times series of “propensity to pay deficits.”

More formally, we first use data only from the formation period 1973-1978 to estimate
the coefficients from a logit regression model:

\[ \Pr(Y_{it} = 1) = F(\beta' X_{it}) \tag{1} \]

where \( Y \) is an indicator variable equal to one if the firm pays and \( X \) is a vector of covariates and
\( F(.) \) represents the logistic function. Using the estimated coefficients from (1) along with future
values of \( X \), we form a series of forecasts for each firm in the sample over the forecast period
1979-2005. We then aggregate both the forecasts and actual data over the \( N \) firms in each year
to form the following annual series:

\[
\begin{align*}
\text{Expected propensity } & = \frac{1}{N} \sum_{i=1}^{N} \hat{Y}_{i,t+k} \\
\text{Actual propensity } & = \frac{1}{N} \sum_{i=1}^{N} Y_{i,t+k}
\end{align*}
\]

We then define the deficit in the propensity to pay as the difference between the expected
propensity and the actual propensity.\(^4\) If there is no change in the propensity to pay, then the
annual time series of the deficit in the propensity to pay should exhibit no trending behavior.
Writing the deficit in the propensity to pay as

\[ \text{Propensity to pay deficit}_t = \alpha + \gamma t + \varepsilon_t, \tag{2} \]

we test the null hypothesis that \( \gamma = 0 \). If there is a decreasing propensity to pay, then the OLS
estimate of \( \gamma \) (the trend coefficient) should be positive and significant.

\(^4\) Here, a negative deficit is naturally interpreted as a surplus in payers relative to expectations.
In Panel A of Table II we report a baseline set of results from the logit estimation of equation (1) for the estimation period (1973-1978). In this case, the dependent variable is simply equal to one if a dividend is paid, and zero otherwise. For this benchmark analysis we use the same control variables as in Fama and French (2001); namely, firm size, market-to-book ratio, return on assets, and sales growth. The results confirm that size, profitability, and measures of growth or investment opportunities are all significant determinants of the decision to pay dividends. Large and profitable firms with a high return on assets are more likely to pay dividends, while firms with high growth rates and high market-to-book ratios are less likely to pay dividends. The coefficient estimates are all similar in magnitude to those reported in Fama and French (2001).

Panel B of Table II presents our estimation of (2) over the period 1979-2005. The results show a positive and significant coefficient estimate for the time trend variable $\gamma$; that is, the gap between the expected fraction of payers and the actual fraction grows over time. The increasing deficit is economically significant as well: the deficit increases by about 24% (0.892*27) over the 27-year period from 1979-2005. This is the declining propensity to pay dividends first documented by Fama and French (2001).

In the next five rows of Panel B we test whether the declining propensity to pay dividends varies across retained earnings quintiles. DeAngelo et al (2006) show that among firms with negative retained earnings, there is no declining propensity to pay. But among firms with positive retained earnings, there is an even greater decline in the propensity to pay than that documented by Fama and French (2001).\(^5\) Our results confirm those of DeAngelo et al (2006) as there is indeed a declining propensity to pay for RE/TA quintiles 2 through 5. As in DeAngelo

\(^5\) DeAngelo et al (2006) estimate results based on retained earnings deciles. Since we find essentially the same results regardless of whether we split the sample based on quintiles or deciles, we present quintile results only for brevity.
et al (2006), for the firms with the lowest retained earnings there is no declining propensity to pay. Overall, our benchmark results are consistent with past studies – there is a declining propensity to pay dividends between 1979 and 2005, and this declining propensity is concentrated among the more profitable firms with relatively high retained earnings.

Our initial approach towards resolving this puzzle is to broaden the set of conditioning variables included in the initial logit estimation (equation (1)). Given recent studies on the time series evolution of public US capital markets, the declining propensity to pay dividends may reflect aggregate trends in the nature of listed firms that are not represented by the initial conditioning variables used in Fama and French (2001). For example, recent empirical studies have shown that proxies for the firm’s level of uncertainty (see Hoberg and Prabhala (2006)) and the firm’s ratio of earned capital to contributed capital (see DeAngelo et al (2006)) are important determinants of the decision to pay dividends. Thus, following these studies, we add stock return volatility and retained earnings to total assets to our initial set of control variables. Finally, we also include firm age as a separate, additional observed characteristic to directly control for the effect of firm maturity on the decision to pay dividends. We consider the age of the firm to be an important, yet previously unconsidered (at least explicitly), measure of the firm’s life cycle stage.

Panel A of Table III presents our results including the additional characteristics. All three characteristics (retained earnings to total assets, volatility and age) are highly significant and economically meaningful. The coefficient on age comes in positive and significant, suggesting that older firms are more likely to pay dividends in accordance with previously proposed lifecycle explanations for dividend policy. Consistent with Hoberg and Prabhala (2006), the coefficient on volatility is negative and significant, suggesting that riskier firms are

6 In fact, our results indicate a slight increase in the propensity to pay dividends for this group. The economic significance of this coefficient estimate is small, however; the estimate of -0.053 on the time trend suggests the deficit only shrinks by about 1.3% (0.053*27) over the 27-years from 1979 to 2005.
less likely to pay dividends. Finally, as in DeAngelo et al (2006), firms with higher RE/TA values are more likely to pay dividends.

In Panel B of Table III we test the hypothesis that these additional variables resolve the declining propensity puzzle. That is, if the upward trend in the deficit is entirely due to time series variation in these additional covariates, then the time series of expected and actual payers should move closer together, thereby eliminating any trend in the propensity to pay deficit.

The results presented in the first row of Table III, Panel B show that the additional firm characteristics are not able to resolve the puzzle, as there is still a significant decline in the propensity to pay dividends. The additional firm characteristics do reduce the magnitude of the puzzle, however, as the coefficient on the time trend (0.385) is less than half the size of the same coefficient in Table II (0.892), so that the deficit now increases approximately 10% over the 1979–2005 period. This increase in the deficit; however, is still significant, both statistically and economically.

Turning to the subsample results, there is a statistically and economically significant decline in the propensity to pay over the 1979-2005 period for the three largest RE/TA quintiles. For the smallest two RE/TA quintiles, on the other hand, the coefficient on the time trend is negative. This estimate is statistically insignificant for quintile 2, and significantly negative for quintile 1. Our results illustrate that the puzzle characterized by DeAngelo et al (2006) is difficult to resolve by adding additional firm characteristics to the model. In fact, the magnitude of the estimated trend coefficient for the deficit for the largest RE/TA quintile (quintiles 5) actually increases when the additional factors are included.

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7 As was the case in Table II with the smaller set of explanatory variables, the coefficient for quintile 1 is relatively small in economic terms at 2.3 basis points per year.
4. The Net Propensity to Pay Out

In section 3 we established that adding three important firm characteristics can partially resolve the declining propensity to pay puzzle – but there still remains a significant decline over the past 30 years. However, since dividends are only one component of a firm’s payout policy, it is unclear from the analysis in section 3 whether the proportion of firms making net positive payments to shareholders has also declined. In this section we test the hypothesis that the proportion of net payers has remained constant over time relative to what we would expect given changing firm characteristics.

As we discuss above, an exclusive focus on the time-series behavior of dividend payers could be misleading because it may misclassify many firms’ net cash payments to or from the capital markets. To mitigate these problems, we construct a broader criterion to determine which firms are classified as payers. We considered a firm a net payer if its total net payout (dividends plus share repurchases less equity issues) is greater than zero. A focus on net payout is motivated both by theory (Modigliani and Miller (1961)) and also by empirical evidence (Boudoukh et al (2007)) suggesting that net payouts have a stronger relation to asset prices than dividends alone.

To consider the effect of changing our measure of payout, we first examine the distribution of non-dividend payers with non-positive and positive net payouts and the distribution of dividend payers with non-positive and positive net payouts. Table IV presents the results from this analysis. Overall, we find that out of 72,280 firm-year observations where no dividends are paid, roughly 16 percent (11,453 observations) do in fact return cash, on net, to the capital markets. Conversely, out of the 32,086 firm-year observations that do indicate a dividend was paid, roughly 13 percent are actually raising equity capital on net.
In Table V, we dig deeper into the difference between measuring net payouts and dividends. Specifically, we identify all firm-year observations where the dividend dummy variable misclassifies the net payout status of a firm and report averages across three sub-periods and across retained earnings quintiles. A misclassification occurs when a non-dividend payer has a positive net payout or a dividend payer has a non-positive net payout. Two patterns emerge from the data. First, the misclassification problem is most severe in the three highest retained earnings quintiles – exactly where the disappearing dividends puzzle is most severe. Second, for the three highest retained earnings quintiles, the misclassification problem increases over time. Overall, our results point to an important problem. If a researcher is trying to test whether firms have changed their propensity to return money to shareholders, measuring only dividends would create an increasing bias over time, and across retained earnings quintiles – exactly where the puzzle currently lies.

Guided by the results in Tables IV and V, we test the hypothesis that the propensity to pay has remained constant over time using our measure of net cash flows to shareholders. In Panel A of Table VI, we present the results of the logit regression estimation of equation (1) where the dependent variable is changed to indicate whether or not the firm is a net payer. We find that the same set of characteristics that predict the propensity to pay dividends also predict the propensity to be a net payer. Overall, the explanatory variables maintain the same sign and significance as in the dividend regressions.

In Panel B of Table VI, we test the null hypothesis that the time series of the propensity to be a net payer exhibits no trending behavior over time. In contrast to the results in section 3, we find that the declining propensity to pay disappears. In the first row of Table VI, Panel B, the coefficient on the time trend is statistically insignificant. That is, for the full sample of firms,
once we account for all payouts rather than only dividends, we find no evidence of a decline in propensity to pay over the 1979-2005 period. In fact, the point estimate of the time trend in the deficit is now negative suggesting that, if anything, there has been an unexplained increase in the propensity of firms to return cash to shareholders.

To put these results in perspective, Figure 1 presents a simple comparison over time between deficits in the net propensity to pay versus the propensity to pay dividends. To form rough comparisons over time, we break the 27 year forecast period (1979-2005) into three 9 year periods and compute the average deficit each period. In Panel A, the deficits are constructed based on the propensity to pay dividends, and in Panel B, the deficits are constructed based on the net propensity to pay. The declining propensity to pay dividends (and consequent increase in the deficit) is evident from Panel A of Figure 1. The average deficit in the propensity to pay dividends increases each period to roughly 20% during the 1997-2005 sub-period, suggesting that the fraction of expected payers is about 20 percentage points higher than the fraction of actual payers. Panel B of Figure 1 contrasts sharply and illustrates the main finding of our paper: the gap between expected and actual payers essentially disappears when we consider net payouts.

In Panel B of Table VI, we also test whether the propensity to pay behaves in a similar way as dividends across retained earning quintiles. When tests are conducted using net payouts, we find that the declining propensity to pay among firms with the highest retained earnings disappears. For quintiles 4 and 5 (highest RE/TA), the coefficients are essentially zero. For quintiles 1 through 3, the coefficients are negative and significant at the 5% level. The RE/TA-based quintile results demonstrate that the apparent unexplained increase in firms’ propensity to pay out cash to shareholders is driven by the behavior of firms with lower retained earnings relative to assets.
Again, to put the magnitude of these results in perspective, Figure 2 replicates Figure 1 for each retained earnings quintile. As in Figure 1, Figure 2 presents an average of the deficit in the propensity to pay for dividends (Panel A) and for the net propensity (Panel B) for each of the three sub-samples. While the main findings from DeAngelo et al (2006) are clear in Panel A, these patterns are absent from Panel B. The results presented in Panel B of Figure 2 are consistent with the trend tests presented in Panel B of Table IV, in that for the most profitable firms (quintiles four and five), there is no declining propensity to pay, and for the least profitable firms (quintiles one through three), there appears to be an increase in the propensity to pay over the forecast period.

Our finding of an increasing propensity to pay for some subset of firms is not surprising if we consider the expanded set of alternatives for firms that want to return cash to shareholders. In the 1970’s, dividends were essentially the only method by which firms returned money to shareholders. The fear of legal action surrounding repurchases effectively deterred many firms from engaging in them. But with the adoption of SEC Rule 10b-18 in 1982, firms could feel comfortable repurchasing their shares in the open market without being accused of manipulating prices. With the new flexibility afforded by repurchases, firms can repurchase shares without committing to a certain level of dividend payout. Thus many younger, less profitable firms which might have avoided or deferred the initiation of dividends in the past are now more likely to pay out through repurchases (See Brav et al 2005).

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8 This safe harbor applies as long as the firm meets certain guidelines with their repurchase activity, such as not buying shares totaling more than 25% of their average daily volume and avoiding the first and last 30 minutes of trading activity each day.
5. **Robustness Tests**

This section explores the robustness of our key results along several dimensions. First, we test whether our main findings hold when we measure repurchases in different ways. Second, we consider whether alternative econometric specifications alter our main findings. Third, we explore the sensitivity of our results to the choice of the sample split-point that defines the estimation and forecast periods in the analysis. Overall, our results remain strong and are qualitatively insensitive to changes in measurement, estimation, and sub-periods.

5.1 *Alternative Measures of Total Repurchases*

In section 4, we classify a firm as a net payer using data on share repurchases and equity issues from the flow of funds statement. However, since there are no direct ways to infer the exact amount of money firms spend on share repurchase programs (see Stephens and Weisbach (1998)), classifying net payers is less straightforward than classifying dividend payers. To address this issue, we examine the robustness of our main empirical results using different proxies for net payouts.

Following Stephens and Weisbach (1998), we create several alternative proxies of net payouts using the changes in shares outstanding reported by CRSP. In this approach, we define the number of shares acquired (issued) by the firm as the decrease (increase) in the number of shares outstanding over a quarter. We adjust the number of shares outstanding for stock splits, stock dividends, and other events using the cumulative factor to adjust shares. We do not know, however, at what prices the firm acquired or issued the shares. In light of this missing information, we construct three alternative measures of repurchases by multiplying the change in the number of shares by the minimum, average or maximum share price (scaled by the
cumulative factor to adjust prices) over the same quarter to estimate the quarterly amount of net equity issues (equity issues minus share repurchases). Finally, we calculate three annual measures of net equity issues by aggregating the quarterly data over a year. Using this methodology, we create the following alternative proxies for net payouts: \(NTPAY2\), \(NTPAY3\), and \(NTPAY4\), which are equal to total dividends minus the annual net equity issues calculated using the minimum, average and maximum share price, respectively.

As a final alternative measurement scheme for net payouts, we follow the methodology in Fama and French (2001) and use the change in the dollar value of Treasury stock (Compustat item # 226) as a proxy for net share repurchases. Using this measure, we define net payouts as total dividends plus the change in the dollar value of Treasury stock. If the firm uses the retirement method, we then use the difference between share repurchases and equity issues from the flow of funds statement as a proxy for net repurchases (see Fama and French (2001) for a detailed discussion of this issue). Although this is an intuitive approach, it has one serious limitation: data on the change in the dollar value of Treasury stock are only available after 1982. Thus, it is impossible for us to determine using this measure whether a firm is a net payer before 1983. This is a significant issue because for our main analysis, we need to estimate the parameters of logit regressions modeling the probability of being a net payer over the 1970s. As a compromise, we use our main proxy for net payouts (\(NTPAY1\)) to estimate the parameters of the logit regressions during the pre-estimation period and use the proxy for net payouts based on the changes in the dollar value of Treasury stock during the post-estimation period.

Our results (not reported in a table) show that the use of alternative measures of net payouts has little effect on either the statistical or economic magnitude of our main results. In particular, we continue to find that the estimated time trend coefficient for the deficit between the
expected and actual propensity to distribute cash over the period 1979–2005 is not statistically different from zero. As with the base set of results discussed previously, the point estimate of this time trend is in fact negative, suggesting that, if anything, there is an unexplained increase in the propensity of firms to distribute cash over the years 1979–2005. These results give us confidence that none of our main findings are attributable to a particular measurement scheme for net payouts.

5.2 Including the Lagged Payout Indicator in the Conditioning Set

At the firm level there is a substantial degree of persistence in the incidence of dividends and in the tendency to return cash to shareholders. Put simply, a firm that paid a dividend last year is likely to pay a dividend this year. As a robustness check, we conduct a variant of the empirical analysis in which the lagged dependent variable is included in the conditioning set.

Our results (not reported in a table) continue to show the same basic result. As expected, the lagged dependent variable is an important and significant explanatory variable. However, we continue to find evidence of a statistically significant increase in the deficit for dividend payments. On the other hand, when we examine the net propensity to distribute cash, the time trend is negative, suggesting that the propensity to distribute cash given firm characteristics has actually increased over the period 1979–2005. If anything, specifying an autoregressive model for the propensity to pay out actually strengthens our evidence.

5.3 Robustness to the Choice of Estimation Window

One potential drawback of our approach is that the researcher must break the data into estimation and forecast sub-samples in an ad hoc way. Following previous studies, the analysis
in sections 3 and 4 specifies the period 1973–1978 as the estimation period. While this facilitates comparison of our results to existing literature, the choice of 1978 as the “splitting point” is somewhat arbitrary. In this sub-section we test whether our results are robust to alternative splits. We repeat our analysis using 1973–1982 as the estimation period and 1983–2005 as the forecast period. As mentioned earlier, the year 1982 corresponds to the passage of legislation (Rule 10b-18) that substantially changed the usage of repurchases as a mean to return cash to shareholder and therefore seems like a natural alternative choice for the sample split-point (see Grullon and Michaely (2002) for a detailed discussion of this regulatory change). Results under this alternative split-point (not separately reported) are very similar to those reported and discussed earlier.

6. Conclusion

In this paper we test the hypothesis that the net propensity for firms to return cash to shareholders has remained constant over time, or whether it has declined along with the propensity to pay dividends. Using various measures of the net cash flowing back to shareholders, we find that the propensity to pay out has been relatively constant over the past 30 years. Moreover, we find that among firms with low retained earnings there is actually an increasing propensity to distribute cash to equity holders.

We show that using net payouts instead of dividends has a tremendous impact on the conclusions drawn concerning the changing nature of payout policy. Conditional on their characteristics, firms are just as likely to return cash to shareholders as they were in the 1970’s. Thus, the puzzles posed by Fama and French (2001) and DeAngelo (2006) are fully resolved when one considers the evolution of payout methods over the last few decades. Additionally, we
show that the least profitable firms are actually more likely to return cash to shareholders than they were in the 1970’s, a finding that may reflect the loosening of restrictions regarding repurchases that have facilitated the use of stock buybacks among smaller, less mature firms.

Our findings are an important step in understanding the payout policy of U.S. public firms. For the most part, our results generally support Lintner (1956) – mature, profitable firms tend to pay dividends, and are very reluctant to cut those dividends. But the rise in share repurchases as a way of returning cash to shareholders has changed the world in an important way. While it is true that many firms have characteristics which would suggest that they should not be dividend payers (i.e., small, young, unprofitable, etc), these are precisely the types of firms that benefit most from the flexibility of repurchases. The addition of these type firms to the universe of payers leads us to a new set of conclusions regarding the propensity to pay out funds to shareholders.

Finally, our findings bear interesting implications for tax policy. One argument in favor of the Jobs and Growth Tax Relief Reconciliation Act of 2003 (the “JGTRRA”) was that in the wake of the corporate scandals of 2001-2002, firms needed to be encouraged to return cash to shareholders to reduce agency problems. Bratton (2005) notes that “According to the JGTRRA’s proponents, this adjustment will help jumpstart a staggering economy, jolt stock prices upward, and release a cascade of corporate cash into the pockets of upscale consumers” [emphasis added]. The presumption behind such arguments seems to be that firms were much less likely to distribute cash to investors than they had been in the past, and that altering the tax code could help alleviate such agency conflicts. Our results suggest that firms were actually just as likely to return cash in 2003 as they were in 1978. Moreover, by shifting cash distributions to repurchases
instead of dividends, firms were actually moving toward an optimal policy of minimizing the tax burden of their investors.
References


Fink, Jason, Kristin Fink, Gustavo Grullon, and James Weston, 2006, Firm Age And Fluctuations in Idiosyncratic Risk, Working paper, Rice University.


Hoberg, Gerard, and Nagpurnanand Prabhala, 2005, Disappearing Dividends: The Importance Of Idiosyncratic Risk And The Irrelevance Of Catering, working paper, University of Maryland.


Table I
Summary Statistics

This table reports summary statistics for various firm characteristics based on annual firm-year data over the sample period 1973-2005. The sample consists of firms that: (a) are present on both CRSP and Compustat; (b) are not an utility (SIC codes 4900 through 4999) or a financial firm (SIC codes 6000 through 6999); (c) are publicly traded on the NYSE, NASDAQ or AMEX; (d) have securities with CRSP codes 10 or 11; (e) are incorporated in the U.S. as per Compustat; (f) have available data on dividends and earnings. NYE is equal to the percentile in which the firm falls on the distribution of equity market values for NYSE firms in year t. M/B is equal to the ratio of firm value to the book value of total assets where firm value is measured as the market value of equity plus the difference between total assets and total common equity. ROA is equal to the operating income before depreciation scaled by the book value of assets. SGR is equal to the annual percentage change in total sales. AGE is defined as the number of years since the earliest of the firms' founding, incorporation, or listing date. VOL is equal to the annual standard deviation of daily returns. RE/TA is equal to the ratio of retained earnings to total assets. To mitigate the effect of outliers, all the control variables are winsorized at the 1% and the 99% of their empirical distribution.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>25%</th>
<th>50%</th>
<th>75%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>NYSE equity value percentile (NYE)</td>
<td>0.21</td>
<td>0.26</td>
<td>0.02</td>
<td>0.09</td>
<td>0.33</td>
<td>133,016</td>
</tr>
<tr>
<td>Book-to-market ratio (M/B)</td>
<td>1.95</td>
<td>1.84</td>
<td>0.99</td>
<td>1.33</td>
<td>2.08</td>
<td>130,311</td>
</tr>
<tr>
<td>Return on assets (ROA)</td>
<td>0.05</td>
<td>0.25</td>
<td>0.03</td>
<td>0.12</td>
<td>0.18</td>
<td>132,661</td>
</tr>
<tr>
<td>Sales growth rate (SGR)</td>
<td>0.26</td>
<td>0.79</td>
<td>-0.01</td>
<td>0.11</td>
<td>0.28</td>
<td>128,480</td>
</tr>
<tr>
<td>Firm age (AGE)</td>
<td>27.05</td>
<td>31.17</td>
<td>7.00</td>
<td>15.00</td>
<td>35.00</td>
<td>132,780</td>
</tr>
<tr>
<td>Volatility (VOL)</td>
<td>0.04</td>
<td>0.02</td>
<td>0.02</td>
<td>0.03</td>
<td>0.05</td>
<td>131,536</td>
</tr>
<tr>
<td>Earned equity to total assets (RE/TA)</td>
<td>-0.25</td>
<td>1.40</td>
<td>-0.18</td>
<td>0.14</td>
<td>0.34</td>
<td>132,829</td>
</tr>
</tbody>
</table>
Table II
The Propensity to Pay Dividends: Base Set of Firm Characteristics

This table reports estimation results for firms’ propensity to pay dividends given firm characteristics considered in Fama and French (2001). Panel A presents results for a pooled logistic regression model over the annual period 1973–1978. The dependent variable $DIV_{it}$ is an indicator that takes the value of one if the $i$-th firm pays a dividend in year $t$ and zero otherwise. NYE is equal to the percentile in which the firm falls on the distribution of equity market values for NYSE firms in year $t$. M/B is equal to the ratio of firm value to the book value of total assets where firm value is measured as the market value of equity plus the difference between total assets and total common equity. ROA is equal to the operating income before depreciation scaled by the book value of assets. SGR is equal to the annual percentage change in total sales. RE/TA is equal to the ratio of retained earnings to total assets. To mitigate the effect of outliers, all the control variables are winsorized at the 1% and the 99% of their empirical distribution. We report $t$-statistics based on two-way clustering (firm and year) in brackets below the corresponding coefficient estimate. An asterisk denotes statistical significance at the 10% level while a double asterisk denotes statistical significance at the 5% level. Panel B reports OLS coefficients from a regression of the aggregate propensity to Pay Deficit on a time trend. Results are reported first for the entire sample of firms and then for firms sorted into quintiles based on the ratio of earned equity to total assets ($RE/TA$). The $RE/TA$-based portfolios are rebalanced each year with the first quintile representing firms with the lowest $RE/TA$ values and the fifth quintile representing firms with the highest $RE/TA$ values. As in Panel A, $t$-statistics are presented in brackets below the coefficient estimates.

### Panel A: Formation Period Firm Level Logit Results (1973 – 1978)

<table>
<thead>
<tr>
<th></th>
<th>Constant</th>
<th>NYE</th>
<th>M/B</th>
<th>ROA</th>
<th>SGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-0.042</td>
<td>5.254</td>
<td>-1.159</td>
<td>7.762</td>
<td>-0.919</td>
</tr>
<tr>
<td>$t$-statistic</td>
<td>[-0.91]</td>
<td>[41.64]**</td>
<td>[-25.75]**</td>
<td>[31.20]**</td>
<td>[-12.15]**</td>
</tr>
</tbody>
</table>

### Panel B: Aggregate Forecast Period Trend Test Results (1979 – 2005)

Propensity to pay deficit, $\alpha + \gamma t$

<table>
<thead>
<tr>
<th></th>
<th>Constant ($\alpha$)</th>
<th>Trend ($\gamma$)</th>
<th>N</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Firms</td>
<td>-0.005 [-0.25]</td>
<td>0.892 [6.69]**</td>
<td>27</td>
<td>0.74</td>
</tr>
<tr>
<td>RE/TA Quintile 1</td>
<td>0.153 [12.49]**</td>
<td>-0.053 [-5.69]**</td>
<td>27</td>
<td>0.57</td>
</tr>
<tr>
<td>RE/TA Quintile 2</td>
<td>0.095 [2.67]*</td>
<td>0.105 [3.82]**</td>
<td>27</td>
<td>0.46</td>
</tr>
<tr>
<td>RE/TA Quintile 3</td>
<td>-0.072 [-1.87]</td>
<td>0.249 [7.06]**</td>
<td>27</td>
<td>0.75</td>
</tr>
<tr>
<td>RE/TA Quintile 4</td>
<td>-0.148 [-5.00]**</td>
<td>0.254 [7.99]**</td>
<td>27</td>
<td>0.82</td>
</tr>
<tr>
<td>RE/TA Quintile 5</td>
<td>-0.191 [-7.14]**</td>
<td>0.168 [5.26]**</td>
<td>27</td>
<td>0.67</td>
</tr>
</tbody>
</table>
Table III
The Propensity to Pay Dividends: Expanded Set of Firm Characteristics

This table reports estimation results for firms’ propensity to pay dividends given an expanded set of firm characteristics. Panel A presents results for a pooled logistic regression model over the annual period 1973 – 1978. The dependent variable $DIV_{it}$ is an indicator that takes the value of one if the $i$-th firm pays a dividend in year $t$ and zero otherwise. NYE is equal to the percentile in which the firm falls on the distribution of equity market values for NYSE firms in year $t$. M/B is equal to the ratio of firm value to the book value of total assets where firm value is measured as the market value of equity plus the difference between total assets and total common equity. ROA is equal to the operating income before depreciation scaled by the book value of assets. SGR is equal to the annual percentage change in total sales. AGE is defined as the number of years since the earliest of the firms’ founding, incorporation, or listing date. VOL is equal to the annual standard deviation of daily returns. RE/TA is equal to the ratio of retained earnings to total assets. To mitigate the effect of outliers, all the control variables are winsorized at the 1% and the 99% of their empirical distribution. We report $t$-statistics based on two-way clustering (firm and year) in brackets below the corresponding coefficient estimate. An asterisk denotes statistical significance at the 10% level while a double asterisk denotes statistical significance at the 5% level. Panel B reports OLS coefficients from a regression of the aggregate propensity to Pay Deficit on a time trend. Results are reported first for the entire sample of firms and then for firms sorted into quintiles based on the ratio of earned equity to total assets ($RE/TA$). The $RE/TA$-based portfolios are rebalanced each year with the first quintile representing firms with the lowest $RE/TA$ values and the fifth quintile representing firms with the highest $RE/TA$ values. As in Panel A, $t$-statistics are presented in brackets below the coefficient estimates.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CONSTANT</td>
<td>NYE</td>
<td>M/B</td>
<td>ROA</td>
</tr>
<tr>
<td>Coefficient Estimate</td>
<td>1.518</td>
<td>2.953</td>
<td>-0.633</td>
<td>2.251</td>
</tr>
<tr>
<td>$t$-statistic</td>
<td>[12.63]**</td>
<td>[21.23]**</td>
<td>[-12.92]**</td>
<td>[7.32]**</td>
</tr>
</tbody>
</table>
Table III  
(Continued)

Panel B: Aggregate Forecast Period Trend Test Results (1979 – 2005)

<table>
<thead>
<tr>
<th></th>
<th>Propensity to pay deficit, $\alpha + \gamma t$</th>
<th>Constant ($\hat{\alpha}$)</th>
<th>Trend ($\hat{\gamma}$)</th>
<th>N</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Firms</td>
<td></td>
<td>0.046 [2.98]**</td>
<td>0.385 [4.12]**</td>
<td>27</td>
<td>0.46</td>
</tr>
<tr>
<td>RE/TA Quintile 1</td>
<td></td>
<td>0.019 [3.10]**</td>
<td>-0.023 [-4.10]**</td>
<td>27</td>
<td>0.52</td>
</tr>
<tr>
<td>RE/TA Quintile 2</td>
<td></td>
<td>0.074 [3.12]**</td>
<td>-0.029 [-1.27]</td>
<td>27</td>
<td>0.10</td>
</tr>
<tr>
<td>RE/TA Quintile 3</td>
<td></td>
<td>0.04 [1.41]</td>
<td>0.097 [3.24]**</td>
<td>27</td>
<td>0.33</td>
</tr>
<tr>
<td>RE/TA Quintile 4</td>
<td></td>
<td>0.003 [0.14]</td>
<td>0.166 [6.60]**</td>
<td>27</td>
<td>0.63</td>
</tr>
<tr>
<td>RE/TA Quintile 5</td>
<td></td>
<td>-0.008 [-0.57]</td>
<td>0.174 [10.81]**</td>
<td>27</td>
<td>0.84</td>
</tr>
</tbody>
</table>
Table IV  
The Congruence between the Dividend Payer Dummy and the Positive Net Payout Dummy

This table reports the fraction of non-dividend payers with non-positive and positive net payouts and the fraction of dividend payers with non-positive and positive net payouts. The dividend dummy is equal to one if the total amount of dividends paid by the firm during a given fiscal year is positive, zero otherwise. The positive net payout dummy is equal to one if the net payout of the firm (dividends plus share repurchases minus equity issues) during a given fiscal year is positive, zero otherwise.

<table>
<thead>
<tr>
<th>Dividend Dummy</th>
<th>Positive Net Payout Dummy</th>
<th>0</th>
<th>1</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>60,827</td>
<td>11,453</td>
<td>72,280</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(84.2)</td>
<td>(15.9)</td>
<td>(100)</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>4,207</td>
<td>27,879</td>
<td>32,086</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(13.1)</td>
<td>(86.9)</td>
<td>(100)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>65,034</td>
<td>39,332</td>
<td>104,366</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(62.3)</td>
<td>(37.7)</td>
<td>(100)</td>
</tr>
</tbody>
</table>
Table V  
Proportion of Misclassified Observations

This table reports the total fraction of observations in which the dividend dummy variable misclassifies the net payout status of a firm across three sub-periods and across retained earnings quintiles. A misclassification occurs when a non-dividend payer has a positive net payout or a dividend payer has a non-positive net payout. A firm is classified as a dividend payer if the total amount of dividends paid by the firm during a given fiscal year is greater than zero. A firm is classified as a net payer if the net payout of the firm (dividends plus share repurchases minus equity issues) during a given fiscal year is greater than zero.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.0</td>
<td>7.6</td>
<td>4.4</td>
<td>6.3</td>
</tr>
<tr>
<td>2</td>
<td>12.5</td>
<td>15.0</td>
<td>10.6</td>
<td>12.3</td>
</tr>
<tr>
<td>3</td>
<td>17.5</td>
<td>16.8</td>
<td>16.1</td>
<td>19.5</td>
</tr>
<tr>
<td>4</td>
<td>17.9</td>
<td>14.6</td>
<td>15.8</td>
<td>22.7</td>
</tr>
<tr>
<td>5</td>
<td>13.7</td>
<td>8.2</td>
<td>13.1</td>
<td>22.2</td>
</tr>
</tbody>
</table>
Table VI
The Propensity to Distribute Cash

This table reports estimation results for firms’ propensity to distribute cash to shareholders given firm characteristics. Panel A presents results for a pooled logistic regression model over the annual period 1973 – 1978. The dependent variable $TP_{i,t}$ is an indicator that takes the value of one if the total payout for the $i$-th firm is positive, where total payout is defined as dividends plus total repurchases less equity issues (taken from the statement of cash flows); and zero otherwise. NYE is equal to the percentile in which the firm falls on the distribution of equity market values for NYSE firms in year $t$. M/B is equal to the ratio of firm value to the book value of total assets where firm value is measured as the market value of equity plus the difference between total assets and total common equity. ROA is equal to the annual percentage change in total sales. AGE is defined as the number of years since the earliest of the firms' founding, incorporation, or listing date. VOL is equal to the annual standard deviation of daily returns. RE/TA is equal to the ratio of retained earnings to total assets. To mitigate the effect of outliers, all the control variables are winsorized at the 1% and the 99% of their empirical distribution. We report $t$-statistics based on two-way clustering (firm and year) in brackets below the corresponding coefficient estimate. An asterisk denotes statistical significance at the 10% level while a double asterisk denotes statistical significance at the 5% level. Panel B reports OLS coefficients from a regression of the aggregate propensity to Pay Deficit on a time trend. Results are reported first for the entire sample of firms and then for firms sorted into quintiles based on the ratio of earned equity to total assets ($RE/TA$). The RE/TA-based portfolios are rebalanced each year with the first quintile representing firms with the lowest $RE/TA$ values and the fifth quintile representing firms with the highest $RE/TA$ values. As in Panel A, $t$-statistics are presented in brackets below the coefficient estimates.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>NYE</td>
<td>M/B</td>
<td>ROA</td>
<td>SGR</td>
<td>Ln(AGE)</td>
<td>Ln(VOL)</td>
<td>RE/TA</td>
<td>N</td>
</tr>
<tr>
<td>Coefficient Estimate</td>
<td>1.167</td>
<td>1.041</td>
<td>-0.693</td>
<td>2.401</td>
<td>-0.781</td>
<td>0.195</td>
<td>-45.821</td>
<td>3.057</td>
</tr>
</tbody>
</table>
### Panel B: Aggregate Forecast Period Trend Test Results (1979 – 2005)

<table>
<thead>
<tr>
<th></th>
<th>Propensity to pay deficit, $\hat{\gamma} = \alpha + \gamma t$</th>
<th>N</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant ((\hat{\alpha}))</strong></td>
<td><strong>Trend ((\hat{\gamma}))</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Firms</td>
<td>0.076 [-0.232]</td>
<td>27</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td>[4.34]** [-1.78]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE/TA Quintile 1</td>
<td>0 [0.00]</td>
<td>27</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>-0.066 [-0.066]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-4.55]**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE/TA Quintile 2</td>
<td>0.126 [-0.159]</td>
<td>27</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>[5.78]**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-5.83]**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE/TA Quintile 3</td>
<td>0.129 [-0.073]</td>
<td>27</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>[4.14]**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[-1.99]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE/TA Quintile 4</td>
<td>0.066 [0.005]</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>[2.36]*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.15]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE/TA Quintile 5</td>
<td>0.007 [0.022]</td>
<td>27</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>[0.37]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.91]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 1

Deficit in the Propensity to Pay Dividends vs. Deficit in the Propensity to Pay Cash

Panel A depicts the proportion of expected dividend payers minus the proportion of actual dividend payers. Panel B depicts the proportion of expected net payers minus the proportion of actual net payers.
Panel A depicts the proportion of expected dividend payers minus the proportion of actual dividend payers by retained earnings quintiles. Panel B depicts the proportion of expected net payers minus the proportion of actual net payers by retained earnings quintiles.