The Shareholder Base and Payout Policy[*]

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Abstract

This paper documents a relationship between the shareholder base and payout policy. We find that firms with small shareholder bases have lower payout levels and maintain higher cash holdings than firms with large shareholder bases. These findings suggest that small shareholder base firms have higher costs of external financing. Consistent with this argument, firms with small shareholder bases are less likely to undertake a repurchase (reduce the shareholder base even further) and are more likely to pay special dividends.

JEL CLASSIFICATION: G35, G14, G15.

KEYWORDS: Payout Policy, Cost of Capital, Special Dividends, Repurchases, Asymmetric Information, Investor recognition.

1 Introduction

Finance practitioners acknowledge that having a broad shareholder base is an important factor for many corporate decisions. For example, in a recent study of firm payout policy, Brav, Graham, Harvey and Michaely (2005) survey financial executives and conclude that "With respect to payout policy, the rules of the game include ..., it is good to have a broad and diverse investor base, ..." In practice, the acquisition and management of the shareholder base is the task of the investor relations department or an investor relations firm.[1] Wolfe Axelrod Weinberger Associates LLC, an investor relations firm, state in their company profile "Our efforts culminate in a broader shareholder base, increased liquidity, a lower future cost of capital, and a better valuation relative to the client's peer group."[2]

Despite the apparent importance of the shareholder base there is little academic evidence documenting the impact of the shareholder base on corporate decisions. In this paper, we investigate the relationship between the shareholder base and payout policy. There are several arguments that imply that external financing is costly for firms with small shareholder bases, either due asymmetric information or due to lack of visibility. The costly external financing implies that these firms will prefer internal funding and therefore we expect such companies to maintain higher cash reserves and pay out less to their shareholders. Effectively, for firms with limited shareholder bases there is a wedge between the internal and external cost of funds.[3] Additionally, since the value of the firm is related to the shareholder base we would expect firms with a small shareholder base to be less inclined to take actions which would make external financing even more expensive. In particular, we expect firms with small shareholder bases to be less likely to undertake a repurchase and thereby reduce the size of the shareholder base further. Instead, we expect such firms to conduct one-time distributions to shareholders in the form of special dividends which although tax inefficient do not reduce the shareholder base.

There are at least two explanations for why external financing is more expensive for firms with small shareholder bases. Firstly, having a large number of shareholders may reduce asymmetric information between insiders and outsiders through more information production. The intuition behind this is captured in the model of Holmström and Tirole (1993). In their model, an increase

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[1] Brennan and Tamarowski (2000) and Bushee and Miller (2008) discuss the role of the investor relations department.

[2] http://www.wolfeaxelrod.com/profile.htm

[3] Kaplan and Zingales (1997) define a financial constraint as a wedge between the internal and external cost of capital.

in liquidity trading (the investor base) implies an increase in stock price informativeness through more information acquisition by speculators. Additionally, empirically it has been documented that analysts tend to follow firms that have more investors.[4],[5] So a large investor base leads to more analyst coverage and overall more information production which ultimately implies less asymmetric information about the firm.

Secondly, the investor base may proxy for the amount of external financing that is available. Merton (1987) argues that the shareholder base measures the recognition of the firm. He develops an incomplete risk sharing model where the size of the firm's investor base is negatively related to the required return on the firm and hence its cost of capital.[6] In this setting, a small shareholder base implies a limited fraction of the market is informed about the stock and hence the firm has a limited amount of investors to raise capital from. Merton argues that the shareholder base can be expanded (allowing more funds to be raised), but at an increasing cost.[7]

We use a sample of firms from 1984 to 2004 on the NYSE, AMEX and NASDAQ to investigate the relationship between the shareholder base and payout policy. Our empirical tests are motivated by the tenant that firms with small shareholder bases firms have have higher costs of external financing than firms with large bases. We find that small shareholder base firms have lower payout levels (both in terms of total payout and dividend payout) and have larger cash reserves. In particular, controlling for a number of variables, firms at the 25th percentile of the shareholder base hold between 0.67% and 0.90% more in cash reserves (or between 4.75% to 6.38% more relative to the unconditional mean) and payout between 0.18% and 0.37% less of their total assets (between 7.44% and 15.95% less relative to the unconditional mean) than firms at the 75th percentile. These results are consistent with the hypotheses that firms with small shareholder bases have higher costs of external than firms with large shareholder bases.

Black (1976) coined the term "dividend puzzle" which refers to the fact that dividends represent a substantial proportion of total payout even though repurchases are more tax efficient. To explain this puzzle there has to be some drawback to using a repurchase as a payout method instead of

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[4] See Bhushan and O'Brien (1990).

[5] Additionally, it has been documented by several authors that analyst forecasts are informative. For example, Bjerring, Lakonishok, Vermaelen (1993), Dimson and Marsh (1984) and Womack (1996).

[6] There is a growing literature that documents a relationship between investor recognition and the value of the firm. Kadlec and McConnell (1994), Foerster and Karolyi (1999) and King and Segal (2008) consider the effect of listing decsions on the shareholder base and its implications for firm valuation. Additionally, Bodnaruk and Östberg (2008), Lehavy and Sloan (2008) and Fang and Peress (2008) document that there is a cross-sectional relationship between investor recognition and returns and therefore the cost of capital.

[7] Grullon, Kanatas and Weston (2004) finds that firms that have higher advertising expenditure also have a larger number of shareholders, implying that the shareholder base can be expanded at a cost.

dividends. One difference between repurchases and dividends is that a repurchase will alter the shareholder base while a dividend will not. So a possible explanation to the dividend puzzle is that firms are reluctant to reduce their shareholder base. The cost of reducing the shareholder base is probably the largest for the firms that already have a limited shareholder base. In addition to affecting payout levels, we hypothesize that the shareholder base will also affect the method of payout.

We find that the shareholder base significantly affects the decision to undertake one-time distributions to shareholders and the method of distribution (special dividend or share repurchase). In particular, companies with smaller shareholder bases are less likely to do one-time distributions. Companies with smaller shareholder bases are more likely to pay a special dividend than undertake a share repurchase. Conditional on undertaking a special distribution, companies with small (large) shareholder bases choose to use a special dividend (rather than repurchase stock) 9.05% (6.49%) of cases.

This paper is most closely related to the investor recognition / investor relations literature. This literature (see footnote 6) documents that there is a relationship between the shareholder base and firm valuation / returns. The finding that the shareholder base is related to returns implies that small shareholder base firms have high costs of financing. We contribute to this literature by showing that the shareholder base is also related to payout policy and payout method.

There is a number of papers that considers the effect of investor composition on payout policy. In a recent paper, Grinstein and Michaely (2005) examine the relationship between institutional holdings and payout policy. Among other things, they find that institutions prefer dividend-paying to non-dividend paying and firms that repurchase shares. Instead of considering the composition of the firm's investors we examine the breadth of ownership. In fact, our measure of the shareholder base is slightly negatively related to the degree of institutional holdings ($\rho = -0.088$) which makes intuitive sense if institutional investors hold larger positions. Nonetheless, we control for institutional holdings in our estimations and this does not affect our results qualitatively. In essence, the clientele literature considers stock demand by certain investor groups and relates that to payout policy whereas we consider the relationship between total investor demand and payout policy.

Since this paper argues that firms with small shareholder bases have high costs of external financing it is related to the extensive literature on financial constraints (e.g., Cleary (1999), Kaplan and Zingales (1997) and Whited and Wu (2006)). This literature uses a set of variables (including whether a firm has positive payout) to construct measures of the cost of external financing. In

contrast, this paper proposes that the shareholder base is a measure of the cost of external financing and examines whether it is related to firm decisions that should be affected by a high cost of external financing such as the level and method of payout and cash holdings.

The remainder of this paper is organized as follows, section 2 presents our testable hypotheses, section 3 introduces our data, our empirical findings are presented in section 4 and section 5 concludes.

2   Testable Hypotheses

All our testable hypotheses come from the tenant that there is a relationship between the size of the shareholder base and the cost of capital and that a small shareholder base leads to a wedge between the cost of internal and external funds. For example, the model of Holmström and Tirole (1993) can be used to justify why price informativeness is related to the size of the shareholder base. A larger shareholder base implies more liquidity traders and this creates incentives for speculators to acquire more information, which in turn leads to lower asymmetric information and therefore a lower cost of external financing. Since the shareholder base is related to price informativeness the wedge between the cost of internal and external funds is decreasing in the size of the shareholder base.

Merton (1987) argues that a good measure of the recognition of a firm is the size of its shareholder base. Likewise, the recognition of a firm is probably related to the availability of external financing. So a firm with a large shareholder base is widely recognized and therefore has a large pool of investors to raise financing from. Merton argues that increasing the shareholder base may be possible, but at a cost that is increasing. Therefore, it is costly for a firm with a limited shareholder base to raise external financing since this requires a costly increase in the shareholder base (the firm requires more recognition).

The above arguments imply that the wedge between the cost of internal and external financing is negatively related to the size of the shareholder base. If it is the case that firms with small shareholder bases have high costs of external financing then we expect them to prefer internal financing. As a result these firms are expected to pay out less to their shareholders and maintain higher cash reserves. Stated formally,

H1: Firms with small shareholder bases should pay out less and hold more cash reserves.

Since the shareholder base and the cost of external financing are negatively related, a reduction in the shareholder base will make external financing even more expensive which leads to lower firm value. Indeed, Brav et al. (2005) report that "Many firms feel that their stock price would fall if they had a less diverse investor base." Therefore we expect that firms will try to avoid taking actions that lead to a reduction in the shareholder base, particularly if the shareholder base is already small (and external financing is relatively expensive). One context where this becomes important is in the choice between a special dividend and a repurchase. In particular, when a firm undertakes a repurchase and some shareholders sell off their entire stake the shareholder base of the firm falls. In contrast, a special dividend has no impact on the shareholder base. This leads to the following testable hypothesis:

H2: If undertaking a repurchase results in a reduction in the shareholder base then, firms with small shareholder bases should be more likely to pay a special dividend and less likely to undertake a repurchase.

3   Sample and Variable Construction

A   Data

Our sample includes all firms listed on NYSE, AMEX and Nasdaq from 1984 to 2004. Data on returns, prices, repurchases and shares outstanding of stocks are obtained from the CRSP database and the CRSP-Compustat Merged Industrial Database (CCM). We only consider firms with CRSP distribution codes 10 or 11. Therefore, we exclude ADRs, closed end funds, REITs, and shares of firms incorporated outside the United States. Our main variable of interest is the number of common shareholders of record (*Shareholder Base*, CCM data 100) and we exclude firms with missing number of common shareholders of record.

We consider the period from 1984 to 2004. The choice of this period is motivated by the introduction of SEC Rule 10b-18 in 1982, which provides a legal safe harbor for companies repurchasing their shares, which greatly reduced the ambiguity associated with this activity. Furthermore, since 1984, firms have been required to report the value of their repurchases in their cash flow statements and this item can be found in the CRSP-Compustat Merged database as data item 115.

Our main variables of interest are measures of firm's cash holdings and payout. We follow Opler, Pinkowitz, Stulz and Williamson (1999) and define cash as the ratio of cash to total assets net of cash. Total payout is defined as the sum of total dividends and repurchases over firm's total assets. We construct our measure of repurchases using the CCM data item Purchase of Common and Preferred Stock (item 115), which reports the amount of money a company spends on repurchasing its own securities. As noted by Stephens and Weisbach (1998) and Jagannathan, Stephens, and Weisbach (2000) this item overstates actual repurchases of common stock because it also includes repurchases of other securities. Therefore, we follow Dittmar (2000) and Weisbenner (2002) and subtract any decreases in the par value of preferred stock (annual data item 130) from CCM item 115 to construct our variable *Fraction Repurchased*. We further screen stock repurchases by setting repurchases equal to zero for any firm that does not repurchase at least 1% of its market value of equity (as in Dittmar (2000)).

We use the same criteria as DeAngelo, DeAngelo and Skinner (2000) to identify special dividends. We classify a cash distribution as a special dividend if it carries distribution code of 1262 or 1272. These codes are used by CRSP if dividends are labeled year-end, final, extra, or special. We do not include "interim" dividends (code 1282) since they are relatively uncommon in our sample period. We also exclude dividends with distribution code 1292 which are defined as "non-recurring, or proceeds from sale of rights" because they are generally not pure cash payouts to stockholders. We set a special dividend dummy (*Special Dividend*) to 1 if a company has paid a special dividend in a particular year and zero otherwise.

In selecting our sample we omit firms with missing or negative values of *Market Capitalization* and *Book-to-Market*. We winsorize all our variables at the 1st and 99th percentiles. We also remove companies with values of *Cash* above 0.8. This leaves us with 52679 firm year observations which is the basis for our analysis.[8]

Table 1 presents descriptive statistics of our data. In our sample, firm cash holdings (*Cash*) are on average 14.62% of total assets. *Capital Expenditures* to total assets ratio is on average 7.02% average total payout is 2.32%. Overall, the characteristics of our sample are in line with those reported in recent studies. The descriptive statistics of our main variables are similar to other studies in the literature (e.g., Opler et al. (1999)).

There are a number of alternative stories that we need to control for. Firstly, Grinstein and

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[8]As a robustness test, we removed all financial and regulated firms from our sample without affecting our results qualitatively.

Michaely (2005) document that institutions avoid firms that do not pay dividends. However, among dividend payers they prefer firms that pay fewer dividends. Institutions also prefer repurchasers and those firms that repurchase regularly. To that end, we calculate the fraction of outstanding equity held by institutions (*Institutional Ownership*) through 13f-filings included in the CDA / Spectrum database.

Secondly, several papers document that undervaluation is an important motive for undertaking a repurchase (e.g., Ikenberry, Lakonishok and Vermaelen (1995), Ikenberry, Lakonishok and Vermaelen (2000)). It could well be that firms with large shareholder bases are undervalued and therefore repurchase more often. However, Bodnaruk and Östberg (2009) find that small shareholder base firms experience abnormal returns suggesting, if anything, that small shareholder base firms are undervalued. Additionally, we control for the undervaluation motive by including the book-to-market ratio, previous years performance and the Rhodes-Kropf, Robinson and Viswanathan (2007) measure of misvaluation in our estimations.

Thirdly, since we argue that a small shareholder base creates a wedge between the cost of internal and external funds our paper is related to the literature on financial constraints. To control for traditional measures of financial constraints we include the Whited and Wu (2006) index (*Whited-Wu*) in our regressions.[9] We follow Whited and Wu (2006) in the construction of the index, which is a weighted average of the ratio of cash flows to total assets, whether the firms pays dividends, the ratio of long-term debt to total assets, the size of the firm and both sales growth and industry sales growth.

Fourthly, Barclay and Smith (1988) argue that one reason to avoid undertaking a repurchase is that this may harm stock liquidity. They find that the bid-ask spread widens around repurchase announcements.[10] Using detailed buyback data from Hong Kong, Brockman and Chung (2001) find that the bid-ask spread widens and the depth narrows during repurchase periods. However, they also find that the spread and the depth returns to benchmark levels once managers disclose that they are the source of the informed trading.[11,12] Nevertheless, we control for liquidity by considering

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[9] In unreported results, we have also included the Kaplan and Zingales (1997) index in our estimations without affecting our results qualitatively.

[10] Miller and McConnell (1995) find no evidence of a widening in bid-ask spread when considering a different sample and methodology.

[11] Grullon and Ikenberry (2000) provide an argument as to why liquidity might rise during a repurchase. They argue that a repurchase might actually increase sell side depth and therefore the effect of a repurchase on liquidity is not clear. They find that firms that are actively repurchasing are less sensitive to market movements in a bearish market.

[12] In a study of U.S. repurchases, Cook, Leach and Krigman (2004) find that liquidity increases after a repurchase and they attribute this result to the difference in the disclosure environment in Hong Kong and the U.S..

the volume of shares traded divided by the number of shares outstanding (*Stock Liquidity*).

Fifthly, a large shareholder base may indicate that ownership is dispersed and therefore firms with large shareholder bases might be more exposed to agency problems. If large shareholder base firms are more exposed to agency problems we would expect them to pay out less to investors. In fact, we find that firms with large shareholder bases have larger payout levels than small shareholder base firms. Additionally, Bodnaruk and Östberg (2009) find that the correlation between ownership concentration and the shareholder base is moderate. To control for differences in governance across firms we consider the fraction of shares owned by the top five company executives (*Managerial Ownership*). Additionally, we control for differences in incentives provided to executives by including the proportion of total compensation to the management officers of the firm paid in the form of stock options (*Equity Based Compensation*). These measure are calculated from the Thompson / Reuters Insider Database. A number of studies examine the relationship between firm governance and cash holdings (e.g. Dittmar and Mahrt-Smith (2007) and Harford, Mansi and Maxwell (2008)). We therefore include the Gompers, Ishii and Metrick (2003) governance index (G) as a control variable. We also include board size and board independence as controls. The board controls as well as the Gompers Ishii and Metrick (2003) index are obtained from the Investor Responsibility Research Center (IRRC).

Lastly, Hovakimian, Opler and Titman (2001) document that the repurchase decision affects the firms capital structure and hence one motive for undertaking a repurchase is to alter ones capital structure. To that end we include the debt-to-equity ratio (*Debt-to-Equity*) when determining the factors that influence the decision of undertaking a repurchase or paying a special dividend.

B   Excess Shareholder Base

Grullon, Kanatas and Weston (2004) and others note that there is a strong relationship between the *Number of Common Shareholders* and variables such as *Market Capitalization* and *Age*. In order to ensure that pur results are not driven by other firm characteristcs which are not directly related to the recognition of the firm, we remove the effect of a number of variables on the *Number of Common Shareholders*. We follow Grullon, Kanatas and Weston (2004) and estimate the relationship between the shareholder base of the company and a number of factors. In all subsequent analysis we use the residuals from this regression, which we call *Excess Shareholder Base*, as our estimates of the

shareholder base.[13]

Table 2 presents results from our Fama-MacBeth regression with industry fixed effects. As controls we include *Market Capitalization, Age, Past Year Return, Book-to-Market, Share Price, Return on Equity,* and other variables suggested in the literature. As expected, we find that larger firms have a larger shareholder base. This may be due to larger firms having more shareholders through analyst following / press coverage, but it could equally well be due to larger firms having more shares outstanding. Due to transaction costs we expect firms that are trading at a low price to have a larger shareholder base. It turns out that *1 / Share Price* is an important determinant of the number of shareholders. Like, Grullon et al (2004) we find that firms with poor performance have larger shareholder bases. Additionally, value companies and mature companies have larger shareholder bases. Overall our regression results are very similar to those found in Grullon et. al (2004). We define *Excess Shareholder Base (ExShBase)* as the residual from this regression and employ it as our measure throughout the rest of our study. A firm who has a positive *Excess Shareholder Base* (residual) has a larger shareholder base than expected according to its fundamentals. Using the *Excess Shareholder Base* instead of the *Number of Common Shareholders* does not alter the direction of the effects that we measure, but in general reduces the economic magnitude of the effects measured.

In Table 3 we examine the persistence of our measure *ExShBase.* To verify that a small shareholder base actually leads to a higher cost of external financing it is important that the size of the shareholder base is a persistent characteristic. If not then a firm with a small shareholder base can just wait until its shareholder base returns to normal levels.

We split firms into quartiles on the basis of *ExShBase.* So firms in quartile 4 have the largest shareholder bases adjusting for their fundamentals. We identify when a firm enters the largest quartile for the first time.[14] Then we record which quartile these firms belong to over a 5 year period. After 5 years, 56.5% of firms falling into the quartile with the largest shareholder bases still belong to the same quartile. Another 31.1% have migrated to quartile 3, which implies that 87.6% of firms originally in quartile 4 still have a shareholder base that is larger than what is expected according to their fundamentals. The results are similar for firms that have the smallest shareholder bases (quartile 1). After 5 years, 51.9% of quartile 1 firms still belong to quartile 1. In total, 82.8% of quartile 1 firms still belong to quartile 1 or 2 after 5 years. Having a small or large

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[13]Bodnaruk and Östberg (2008), document that the residual shareholder base is negatively related to returns.

[14]We restrict our analysis to firms with at least 5 years of uninterrupted values of *Excess Shareholder Base* following entering the highest (lowest) quartile of *ExShBase*. This restriction does not affect our results in any significant way.

shareholder base seems to be a persistent firm characteristic.

4 Results

A The Shareholder Base and Payout

Firms with negative values of *ExShBase* have smaller shareholder bases than implied by their fundamental characteristics. We expect these firms to have high costs of external financing and therefore pay out less. Panel *A* of Table 4 presents univariate results of the relationship between *ExShBase* and *Total Payout*. Companies with negative values of *ExShBase* pay out on average 2.21% while firms with positive values pay out on average 2.59% (or 17.19% more) of their total assets. Additionally, when we only consider firms with positive values of *Total Payout*, small shareholder base firms pay out on average 3.50% and large shareholder base firms pay out 3.89% (or 11.14% more) of their total assets.

In Panel *B* of Table 4 we restrict the *Total Payout* to be between 0% to 100% of net income. This removes firm years with negative net income and firms that pay out more than their net income. This selection reduces the average payout significantly, firms with positive values of *ExShBase* pay out 1.55% of total assets whereas firms with negative values pay out 1.41%. The difference is economically and statistically significant.

Panel *C* of Table 4 displays our regression results with *Total Payout* as the dependent variable. In all of our specifications *ExShBase* is significantly positively related to *Total Payout*. Specification (1) presents average estimates of year-by-year Fama-MacBeth regressions with industry fixed effects and Newey-West corrected standard errors. The rest of the specifications are pooled panel regressions with time and industry fixed effects; standard errors are clustered at industry (SIC2) level. Specification (3) includes $ExShBase^2$ in order to capture non-linearities in the relationship between the shareholder base and payout. In specification (3), going from the 25th to the 50th percentile of *ExShBase* increases *Total Payout* by 0.21%. However, going from the 50th to the 75th percentile of *ExShBase* only increases *Total Payout* by 0.14%. This indicates that the relationship between the shareholder base and payout is stronger the smaller the shareholder base is, due to financial constraints being more binding the smaller the shareholder base is. Going from the 25th to the 75th percentile in terms of *ExShBase* increases *Total Payout* by 0.35% which represents 14.93%

of the unconditional mean. The economic magnitudes are similar across all of our specifications.[15]

We find that larger value companies and firms with higher operating income and more institutional ownership have higher *Total Payout*. Also, a high level of *Board Independence* is associated with higher levels of *Total Payout*. As expected, we find a negative relationship between investment (*Capex*) and payout. Firms that are overvalued according to *Misvaluation RRV* have lower payout levels. Additionally, firms that are more financially constrained according to the *Whited-Wu* index pay out less.[16] Examining specifications (4) and (5) indicates that including the *Whited-Wu* index does not alter our conclusions concerning the relationship between the shareholder base and payout. Overall the results of these results corroborate the hypothesis that the shareholder base is positively and statistically significantly related to payout.

B   The Shareholder Base and Cash Holdings

Panel *A* of Table 5 presents univariate results of the relationship between *Excess Shareholder Base (ExShBase)* and *Cash*. Companies with small shareholder bases (negative *ExShBase*) have a ratio of cash to total assets of 14.83% while firms with large shareholder bases (positive *ExShBase*) maintain on average cash holdings of 12.76% of total assets (or 13.96% less). The difference is statistically significant at the 1% level. The effect is similar in economic magnitude and statistically significant when we consider median cash holdings.

Panel *B* of Table 5 displays our regressions analysis. The coefficient for *ExShBase* is negative and statistically significant in all specifications, indicating that the shareholder base is negatively related to cash holdings. Specification (1) is a Fama-MacBeth regression while the other specifications are pooled panel regressions. Inspecting specification (3) that includes a squared term, $ExShBase^2$, we see that going from the 25th to the 75th percentile in terms of *ExShBase* decreases *Cash* by 0.75% which represents 5.26% of the unconditional mean. However, going from the 25th to the 50th percentile of *ExShBase* decreases *Cash* by 0.45% and going from the 50th to the 75th percentile of *ExShBase* only decreases *Cash* by 0.30%. Therefore, just as with *Total Payout*, the relationship between the *Excess Shareholder Base* and Cash is non-linear. The relationship is stronger the smaller the *Excess Shareholder Base* is. The economic magnitudes are similar across all of our

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[15] We have considered *Dividend Payout* as an alternative to *Total Payout* as our explanatory variable. This yields qualitatively similar results.

[16] We have also included the Kaplan-Zingales (1997) index of financial constraints into our specifications and this does not alter our results.

specifications.

Additionally, we find that *Capital Expenditures, Market Capitalization, Institutional Ownership* are negatively related to *Cash.* Value firms (high *Book-to-Market* ratio) and firms with better corporate governance (more board independence and lower *G* index) have lower cash holdings. The lower cash holdings of large firms and firms with high *Book-to-Market* ratios has also been documented by Opler et al. (1999) and Dittmar, Mahrt-Smith and Servaes (2003).

C   The Impact of Repurchases and Special Dividends on the Shareholder Base

To argue that maintaining the size of shareholder base is an important consideration when choosing the method of payout we need to verify that undertaking a share repurchase and paying special dividends affects the shareholder base differently. In particular, for special dividends to have an advantage over repurchases we should observe that the latter reduce the shareholder base (and thus increasing cost of external financing) while the former does not. In this section we examine the effect of repurchases and special dividends on the size of shareholder base.

Our dependent variable is the change in the number of common shareholders ($\Delta ShBase$) in year t and $t+1$, where t is the year when the special distribution is made.[17] We present results in terms of changes in the number of common shareholders to facilitate interpretation, but the results in terms of changes in *Excess Shareholder Base* are qualitatively equivalent.[18]

In Table 6 our main variables of interest are *Share Repurchase* and *Special Dividend*. *Share Repurchase* is a dummy variable that takes the value 1 if the firm has repurchased at least 1% of its outstanding stock in year t. *Special Dividend* is a dummy variable that takes the value 1 if the firm undertakes a special dividend between in year t. We find that undertaking a repurchase leads to a fall in thes shareholder base over years t and year $t+1$. Undertaking a repurchase leads to a reduction in the shareholder base of between 3.70% and 4.91% over years t and $t+1$. At the same time, paying a special dividend leads to an increase in the shareholder base. We find that the shareholder base on average increases by between 4.45% and 16.63% over the year when a special dividend was paid and subsequent year.

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[17]In unreported results, we find that there is no relation between special distributions and the change in the shareholder base in year $t+2$.

[18]The correlation between $\Delta ShBase$ and changes in the *ExShBase* is 86.9%.

D   The Choice of Payout Method

If maintaining a broad shareholder base is valuabe to the firm then the choice of distribution method is important. An open market repurchase reduces the size of the shareholder and is therefore costly. As a result, firms with particularly small shareholder bases should be more reluctant to reduce the size of the shareholder base through a repurchase than firms with a large shareholder bases. On the other hand, a special dividend does not reduce the size of the shareholder base. Therefore, we expect that firms that have a particularly small shareholder bases should be more likely to undertake a special dividend while firms with large shareholder bases should be more likely to repurchase stock which is more tax efficient.

In Table 7, Panel A we examine the univariate relationship between the shareholder base and the decision to undertake a repurchase and pay special dividends. Since normal dividends exhibit significant persistence we consider special distributions (special dividends and repurchases). We split firms into two groups depending on whether they have an *Excess Shareholder Base* that is below or above zero.[19]

We find that 23.48% of firms with a large shareholder base undertake a repurchase, while only 21.84% of firms with a small shareholder base undertake a repurchase. The difference in the probability of undertaking a repurchase is significant at the 1% level. Additionally, firms with a large shareholder base repurchase more. On average they repurchase 1.41% of their outstanding shares, while firms with a small shareholder base repurchase 1.17% of their outstanding shares.

The probability that a firm with a large (small) Excess Shareholder Base undertakes a special dividend is 1.40% (2.02%). The 0.62% difference between firms with positive and negative Excess Shareholder Base is statistically significant. So, firms with large shareholder bases are more likely to undertake a repurchase and less likely to undertake a special dividend than firms with small shareholder bases.

The decision to undertake a repurchase or a special dividend can be seen as two sequential decisions. First, the firm decides whether to make a special distribution to shareholders. Second, the firm chooses the method of distribution. In Panel B of Table 7 we relate the shareholder base to the method of payout while conditioning on the decision to make a special distribution to shareholders. To do this, we employ a two stage probit procedure, where the dependent variable in the first stage is a dummy variable that takes the value 1 if the firm undertakes a special

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[19]These results are qualitatively unaltered if we use the median level of the *Excess Shareholder Base* as breakpoint.

distribution (repurchase or special dividend) and the value 0 otherwise. In the second stage the dependent variable is a dummy variable that takes the value 1 if the firm undertakes a repurchase and the value 0 if the firm undertakes a special dividend.

Examining the first stage regressions, we find firms with larger shareholder bases are more likely to make special distributions, which is consistent with our earlier findings for total payout. In particular, going from 25th to 75th percentile of *Excess Shareholder Base* increases the likelihood of a special distribution by 1.32% or 6.09% relatively to the unconditional mean. Additionally we find that larger firms, value firms, firms with greater operating income and firms with larger amounts of payout in the previous period are more likely to undertake a special distribution. Firms with larger institutional ownership and low dividend payout are more likely to undertake a one time distribution.

In the second stage we consider the method of payout while conditioning on the decision to undertake a special distribution. We find that firms with smaller shareholder bases favor paying special dividends over undertaking repurchases. In particular, a decrease in excess shareholder base from 75th to 25th percentile increases the likelihood that a special distribution is a special dividend by 1.08% (or 13.97% relative to the unconditional mean). The second stage regression indicates that when controlling for the decision to make a special distribution, firms with high levels of dividend payout, and good past performance are less likely to use a repurchases as a payout method. The results of this section indicate that firms with limited shareholder bases are reluctant use repurchases as a method of payout.

5   Conclusion

To firms the investor base seems to be of importance, this is evident both from surveys and from the amount of resources spent by firms on investor relations. There are several reasons for the importance of the shareholder base. Firstly, having a large shareholder base may reduce asymmetric information between insiders and outsiders through more information production. Secondly, the shareholder base may be related to the recognition of the firm and hence the availability of external financing. For example, Merton (1987) states that "an increase in the relative size of the firm's investor base will reduce the firm's cost of capital and increase the market value of the firm."

Common to both the asymmetric information and the recognition story is that external capital

is costly to firms with small shareholder bases. Consistent with this, this paper documents that firms with small investor bases pay out less of their net income to investors and maintain higher cash reserves.

If maintaining the investor base is valuable then firms with an already small shareholder base should be reluctant to reduce the shareholder base further by undertaking a repurchase and be more likely to pay a special dividend. When examining firm decisions to undertake special distributions we find support for this conjecture. Overall, the findings of this paper suggest that the shareholder base is an important consideration in the financial decons of firms. More specifically, we document a relation between the shareholder base, cash holdings, payout and the method of distribution.

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Appendix: Variable Definitions

Variable	Description of Variable and Source of Data
Shareholder Base	number of common shareholders of record (in 000s) CRSP-COMPUSTAT Merged database (CCM) data item # 100.
Market Cap	year-end equity market capitalization: (price x shares outstanding), CCM data 24 x data 25.
Book-to-Market, B/M	ratio of long-term debt to the total equity of the firm: CCM data 9/ data 60.
Price-to-Earnings, P/E	ratio of the year-end stock price to earnings per share for the prior fiscal year: CCM data 24/data 58.
Debt-to-Equity, D/E	ratio of long-term debt to the total equity of the firm: CCM data 9/ data 60.
Operating Income	ratio of operating income to total assets: CCM data 13/ data 6.
R&D	ratio of R&D to total assets, set zero when missing: CCM data 46 / data 12
Cash	ratio of cash holdings to total assets: CCM data 1/ data 6.
Dividend Payout	ratio of dollar amount of dividends to total assets: CCM data 21/ data 6.
Total Payout	sum of dollar amount of dividends and dollar volume of repurchases divided by total assets: CCM (data 21 + data 115)/ data 6.
Stock Liquidity	sum of the monthly share volume over the previous year divided by the number of shares outstanding at the end of the year: CRSP Monthly Stocks.
Past Year Return	compounded monthly return for the previous year: CRSP Monthly Stocks.
Volatility	stock return volatility, computed as the standard deviation of daily stock returns for the previous year: CRSP Daily Stocks
Capital Expenditures	ratio of capital expenditure to total assets of the firm: CCM data 128/ data 6.
Firm Age	number of years the firm existed in CRSP daily stocks database.
Share Price	median price of the firm share over the previous one year: CRSP daily stocks.
ROE	ratio of earnings to average equity for the prior fiscal year: CCM data 20/ (data 60 + data 60(t-1))/2).
Institutional Ownership	year-end fraction of shares outstanding owned by institutional fund managers: Spectrum 13f.
Industry Concentration	sum of the squared market share of each firm in the same industry during a year. Market share is defined as the total sales of the firm in a given year divided by the total sales of the industry in the year. The industry is defined at the three-digit SIC code level, where the SIC codes have been obtained from CRSP Monthly Stocks (SICCD). The sales data comes from CCM: data 12.
Misvaluation (RRV)	sector-adjusted firm-specific valuation errors corresponding to the residuals of Model 3 in Rhodes-Kropf, Robinson and Viswanathan (RRV) (2005) that regresses market value on leverage, book value of assets and net income for twelve Fama-French sectors of the economy. Estimated from CCM.
Whited-Wu Index	index of financial constraint of Whited-Wu (2006): WW=-0.091*CF-0.062*DIVPOS+ 0.021*TLTD-0.044*LNTA+0.102*ISG-0.035*SG, where CF is a ratio of cash flows to total assets, DIVPOS is an indicator that takes the value of one if the firm pays cash dividends, TLTD is the ratio of the long-term debt to total assets, LNTA is the natural log of total assets, ISG is the firm's three-digit industry sales growth, SG is firm sales growth. Estimated from CCM.
Managerial Ownership	fraction of shares outstanding pertaining to the top 5 company executives. Estimated from Thomson Reuters Insider Database.
Equity Based Compensation, EBC	the proportion of total compensation to the management officers of the firm paid in the form of stock options. Estimated from Thomson Reuter Insiders database.
Board Independence	ratio of independent directors to total directors. Estimated from IRRC.
Board Size	number of directors divided by the logarithm of total assets. Estimated from IRRC.
Corporate Governance Index, G	measured on the same principle as Gompers, Ishii, and Metric (2003): sum of the number of provisions restricting shareholder rights. Data obtained from IRRC.
Special Dividend Dummy	a dummy variable which takes a value of 1 if a company paid special dividends in a given year, 0 otherwise. A dividend is classified as special if it has a distribution code of 1262 or 172. Estimated from CRSP monthly data.
Share Repurchase Dummy	a dummy variable which takes a value of 1 if a company repurchased shares in a given year, 0 otherwise. A company is defined to have a repurchase if purchase of common and preferred stock less the decrease in par value of preferred stock: (CCM data 115+ data 130) is greater then 1% of total assets.

Table 1: Descriptive statistics of the data

We present descriptive statistics on the variables used in our study. All variables are described in Appendix. All variables are windsorized at 1% and 99% of the distribution.

variable	N	mean	median	std
Shareholder Base	52679	17.15	1.83	454.88
Market Cap (mln)	52679	1898.18	180.78	10646.16
Book-to-Market (B/M)	52679	0.68	0.55	0.58
Price-to-Earnings (P/E)	52679	15.88	13.72	43.99
Debt-to-Equity (D/E)	52679	0.76	0.34	1.46
Operating Income	52679	0.12	0.13	0.14
R&D	52679	0.04	0.00	0.27
Cash	52679	0.14	0.06	0.17
Dividend Payout	52679	0.01	0.00	0.02
Total Payout	52679	0.02	0.01	0.04
Stock Liquidity	52679	1.15	0.74	1.30
Past Year Return	52679	0.16	0.15	0.53
Volatility (x100)	52679	0.68	0.39	1.15
Capital Expenditures (Capex)	52679	0.07	0.05	0.07
Firm Age	52679	22.40	18.00	18.03
ROE	52679	0.05	0.11	0.40
Institutional Ownership	52679	0.38	0.35	0.25
Industry Concentration	52679	0.08	0.05	0.09
Misvaluation (RRV)	38492	-0.04	-0.04	0.37
Whited-Wu Index	38492	-0.19	-0.19	0.14
Managerial Ownership	5876	0.01	0.00	0.03
Equity Based Compensation, EBC	5876	0.38	0.37	0.25
Board Independence	5876	0.63	0.67	0.18
Board Size	5876	1.28	1.26	0.30
Corporate Governance Index	5876	9.28	9.00	2.66
Share Repurchase Dummy (x100)	52679	22.66	0.00	41.87
Special Dividend Dummy (x100)	52679	1.71	0.00	12.97

Table 2: Determinants of Shareholder Base

We report the results of regression analysis relating company shareholder base to its determinants. The dependent variable is the logarithm of common shareholders of record (CCM data 100). All the variables are described in Appendix. We report the results of Fama-MacBeth regression with trading exchange and industry (sic2) fixed effects. Standard errors are clustered by industry (sic2).

	estimate	t-stat
Log (Firm Age)	0.40	(15.56)
ROE	-0.17	(-4.45)
Log (Market Cap)	0.63	(18.75)
Log (B/M)	0.23	(14.05)
1/Share Price	1.49	(6.30)
Stock Liquidity	0.01	(0.31)
Past Year Return	-0.07	(-2.93)
Volatility	0.01	(0.31)
Exchange Dummies	Yes	
Industry Dummies	Yes	
Clustering	Sic2	
Adj. R^2	0.431	
N	22	

Table 3: Persistence of Excess Shareholder Base

We report the results on the persistence of excess shareholder base for firms which are selected when they enter the highest (lowest) quartile of excess shareholder base for the first time. Excess shareholder base is a residual of the regression reported in Table 2. The firms are followed for five years to determine the quartile they belong in the subsequent year. Quartile 4 represents the highest excess shareholder base quartile, and Year 0 is the measurement year. Numbers shown are percentages. The number of firm years in each quartile, each year is in brackets. We require companies to have non-missing excess shareholder base for the years -1 to +5 relatively to the measurement year.

	Quartile 4	Quartile 3	Quartile 2	Quartile 1
Persistence of excess shareholder base for firms that are in the highest quartile of excess shareholder base in year 0				
year 0	100.0 [563]			
year 1	68.0 [383]	28.8 [162]	2.3 [13]	0.9 [5]
year 2	61.4 [346]	31.8 [179]	4.8 [27]	2.0 [11]
year 3	57.2 [322]	34.1 [192]	5.7 [32]	3.0 [17]
year 4	57.9 [326]	31.8 [179]	6.7 [38]	3.6 [20]
year 5	56.5 [318]	31.1 [175]	8.0 [45]	4.4 [25]
Persistence of excess shareholder base for firms that are in the lowest quartile of excess shareholder base in year 0				
year 0				100.0 [592]
year 1	2.0 [12]	2.9 [17]	30.2 [179]	64.9 [384]
year 2	4.1 [24]	5.2 [31]	33.6 [199]	57.1 [338]
year 3	3.9 [23]	7.2 [43]	29.9 [177]	59.0 [349]
year 4	5.7 [34]	7.6 [45]	31.4 [186]	55.2 [327]
year 5	6.2 [37]	11.0 [65]	30.9 [183]	51.9 [307]

Table 4: Shareholder Base and Total Payout

In this table we investigate the relationship between excess shareholder base and company's total payout. We utilize the residual errors from the regression reported in Table 2 as our measure of excess shareholder base. The dependent variable is total payout to shareholders defined as the sum of dividends and repurchases divided by total assets. All variables are described in Appendix.

Panel A reports the results of univariate analysis both for the full sample and for the sample of companies with positive total payout. In panel B we report the results of univariate analysis restricting total payout to be within 0% and 100% of net income. Panel C reports multivariate regressions' results. Specification (1) reports the results of Fama-MacBeth regression with industry fixed effects and Newey-West corrected standard errors. Specifications (2)-(5) provide the results of panel regressions with industry (sic2) and time fixed effects with standard errors clustered at industry level. All estimates are multiplied by 100.

Panel A:

Panel A: univariate analysis: all payouts

Excess Shareholder Base	N	Total Payout		N	Total Payout (>0)	
		mean	median		mean	Median
High (Positive)	26506	2.59%	0.91%	17688	3.89%	2.20%
Low (Negative)	26173	2.21%	0.64%	16506	3.50%	1.91%
		t-stat/prob	Wilcoxon/prob		t-stat/prob	Wilcoxon/prob
		10.16	12.09		7.23	8.69
		0.01	0.01		0.01	0.01

Panel B: univariate analysis: payout between 0% and 100% of net income

Excess Shareholder Base	N	Total Payout		N	Total Payout (>0)	
		mean	median		mean	Median
High (Positive)	20580	1.55%	0.38%	11763	2.70%	1.86%
Low (Negative)	21578	1.41%	0.25%	11914	2.56%	1.69%
		t-stat/prob	Wilcoxon/prob		t-stat/prob	Wilcoxon/prob
		5.27	5.97		3.75	5.35
		0.01	0.01		0.01	0.01

Panel C: multivariate regressions

| | Fama-MacBeth | | Pooled panel | | | | | | | |
| | (1) | | (2) | | (3) | | (4) | | (5) | |
	estimate	t-stat	estimate	t-stat	estimate	t-stat	estimate	t-stat	estimate	t-stat
Excess Sh. Base	0.29	(7.89)	0.26	(8.83)	0.25	(8.73)	0.18	(6.56)	0.13	(2.19)
$*-- \wedge 2$					-0.06	(-2.57)				
log (Market Cap)	0.14	(3.49)	0.17	(2.63)	0.17	(2.67)	0.08	(1.23)	-0.37	(-3.92)
log (B/M)	-1.14	(-7.96)	-1.10	(-8.98)	-1.10	(-9.02)	-1.27	(-12.07)	-2.09	(-11.08)
D/E	-0.32	(-11.60)	-0.31	(-8.82)	-0.31	(-8.79)	-0.25	(-7.01)	-0.39	(-4.84)
P/E	-0.00	(-4.12)	-0.00	(-3.86)	-0.00	(-3.85)	-0.00	(-4.54)	-0.00	(-3.48)
Operating Income	7.71	(12.91)	7.36	(9.24)	7.34	(9.20)	6.07	(9.34)	19.45	(9.03)
R&D	0.88	(5.02)	0.68	(4.38)	0.68	(4.41)	0.55	(5.25)	3.75	(3.43)
Cash	1.38	(11.07)	1.46	(7.37)	1.47	(7.50)	1.60	(6.77)	3.50	(4.50)
Past Year Return	-0.96	(-12.40)	-0.92	(-9.29)	-0.93	(-9.36)	-0.91	(-11.43)	-1.50	(-8.71)
Volatility	-17.17	(-1.91)	-1.77	(-0.42)	-1.57	(-0.38)	-3.72	(-1.03)	-21.41	(-1.29)
Capex	-4.84	(-10.10)	-4.70	(-5.86)	-4.70	(-5.83)	-5.25	(-8.51)	-15.43	(-7.54)
Inst. Ownership	0.19	(0.81)	0.13	(0.45)	0.10	(0.34)	0.21	(0.81)	-1.31	(-2.86)
Ind. Concentration	-0.34	(-0.23)	0.25	(0.29)	0.21	(0.23)	-0.41	(-0.49)	-1.61	(-0.62)
Stock Liquidity	-0.40	(-5.14)	-0.31	(-7.90)	-0.30	(-8.08)	-0.27	(-6.51)	-0.28	(-2.28)
Misvaluation (RRV)							-0.41	(-3.33)	0.02	(0.08)
Whited-Wu index							-4.14	(-8.53)	-6.57	(-5.03)
Manag. Ownership									-8.54	(-4.22)
EBC									0.66	(1.71)
Board Independence									-0.06	(-0.12)
Board Size									0.46	(1.39)
G-index									-0.01	(-0.34)
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Time Dummies			Yes		Yes		Yes		Yes	
clustering			Sic2		Sic2		Sic2		Sic2	
Adj R^2			0.162		0.163		0.178		0.357	
N	21		52679		52679		38492		5876	

Table 5: Shareholder Base and Cash Holdings

We investigate the relationship between company excess shareholder base and its cash holdings. We utilize the residual errors from the regression reported in Table 2 as our measure of excess shareholder base. The dependent variable is cash holdings at the end of the current fiscal year divided by total assets net of cash. All variables are described in Appendix.

In panel A we report the results of univariate analysis. Panel B reports multivariate regressions' results. Specification (1) reports the results of Fama-MacBeth regression with industry fixed effects and Newey-West corrected standard errors. Specifications (2)-(5) provide the results of panel regressions with industry (sic2) and time fixed effects with standard errors clustered at industry level. All estimates are multiplied by 100.

Panel A: univariate analysis

Excess Shareholder Base	N	Cash Holdings mean	median	t-stat	prob	Wilcoxon	prob
high (positive)	28058	12.76%	5.39%	14.04	0.01	13.92	0.01
low (negative)	27891	14.83%	7.02%				

Panel B: multivariate regressions

	Fama-MacBeth (1)		Pooled panel (2)		(3)		(4)		(5)	
	estimate	t-stat	estimate	t-stat	estimate	t-stat	estimate	t-stat	estimate	t-stat
Excess Sh. Base	-0.65	(-7.20)	-0.54	(-4.46)	-0.53	(-4.39)	-0.47	(-3.50)	-0.63	(-2.32)
*-- ^2					0.11	(1.79)				
log (Market Cap)	-1.01	(-24.70)	-0.94	(-6.25)	-0.95	(-6.33)	-0.56	(-2.06)	-0.73	(-1.57)
log (B/M)	-3.99	(-11.13)	-4.00	(-10.90)	-4.00	(-10.91)	-5.66	(-11.63)	-2.88	(-4.04)
D/E	-2.13	(-15.73)	-2.11	(-8.37)	-2.12	(-8.34)	-2.38	(-9.30)	-1.92	(-4.94)
P/E	0.00	(0.66)	-0.00	(-0.85)	-0.00	(-0.84)	-0.00	(-0.45)	-0.00	(-1.16)
Operating Income	1.00	(0.30)	-2.17	(-1.80)	-2.14	(-1.77)	-3.01	(-1.69)	10.24	(1.51)
R&D	14.81	(4.01)	6.97	(8.85)	6.97	(8.84)	8.73	(4.80)	25.83	(2.33)
Total Payout	21.99	(7.97)	21.51	(8.31)	21.65	(8.46)	25.06	(9.02)	30.78	(5.47)
Past Year Return	-0.03	(-0.08)	-0.18	(-1.03)	-0.17	(-0.97)	-0.23	(-1.16)	0.80	(1.16)
Volatility	-43.41	(-2.69)	-14.20	(-1.28)	-14.59	(-1.33)	-10.96	(-0.80)	39.25	(0.37)
Capex	-22.04	(-9.21)	-20.13	(-7.89)	-20.12	(-7.88)	-20.30	(-7.98)	-28.17	(-3.57)
Inst. Ownership	-2.36	(-5.13)	-2.58	(-3.56)	-2.51	(-3.51)	-3.12	(-4.35)	-7.39	(-6.74)
Ind. Concentration	29.23	(1.56)	3.18	(1.14)	3.27	(1.19)	4.59	(1.71)	11.23	(1.00)
Stock Liquidity	2.71	(16.01)	2.49	(7.87)	2.47	(7.96)	2.52	(8.36)	2.92	(9.59)
Misvaluation (RRV)							-6.36	(-8.36)	-2.69	(-1.72)
Whited-Wu index							7.68	(2.47)	11.18	(1.89)
Manag. Ownership									12.34	(1.00)
EBC									1.45	(1.30)
Board Independence									-0.75	(-0.37)
Board Size									-2.98	(-2.47)
log(G)									-0.44	(-4.49)
Industry Dummies	Yes		Yes		Yes		Yes		Yes	
Time Dummies			Yes		Yes		Yes		Yes	
clustering			Sic2		Sic2		Sic2		Sic2	
Adj R2			0.208		0.208		0.230		0.372	
N	21		52679		52679		38492		5876	

Table 6: The Effect of Share Repurchases and Special Dividends on Shareholder Base

We present the results of the effect of share repurchases and special dividends on the shareholder base in the year when the special distribution is undertaken and in the subsequent year. The change in shareholder base in year t is calculated as a difference in the logarithms of the number of the common shareholders of record at the end of year t and year t-1. The dependent variable is the change in shareholder base at year t (t+1), where year t is a year when a special distribution is made. Share repurchase (Special Dividend) is a dummy variable which takes a value of 1 if a company undertakes a repurchase (pays special dividend) in a year t, 0 – otherwise. All variables are described in Appendix. All estimates are multiplied by 100.

	Δsh.base$_t$		Δsh.base$_t$		Δsh.base$_{t+1}$		Δsh.base$_{t+1}$	
	estimate	t-stat	estimate	t-stat	estimate	t-stat	estimate	t-stat
Share Repurchase$_t$	-1.26	(-2.02)	-2.40	(-2.56)	-2.44	(-2.79)	-2.51	(-4.43)
Special Dividend$_t$	4.45	(2.44)	14.01	(2.34)	-0.19	(-0.45)	2.62	(10.47)
Δsh.base$_t$					-7.74	(-14.49)	-3.97	(-8.31)
Δsh.base$_{t-1}$	-14.52	(-8.67)	-11.27	(-3.17)	-3.25	(-5.36)	-5.07	(-7.08)
Δsh.base$_{t-2}$	-4.27	(-3.73)	-5.41	(-5.19)				
Log (Market Cap)	0.17	(0.81)	1.20	(1.48)	-0.83	(-0.15)	1.15	(0.82)
Log (B/M)	-4.90	(-5.36)	-5.80	(-3.66)	-5.37	(-4.07)	-1.84	(-3.08)
D/E	-0.89	(-2.86)	-1.29	(-2.26)	-2.36	(-0.79)	-1.36	(-0.67)
P/E	0.01	(1.78)	0.02	(1.03)	-2.69	(-0.01)	1.11	(0.01)
Operating Income	3.07	(1.11)	15.07	(1.36)	1.18	(5.51)	1.35	(15.16)
R&Ds	3.64	(1.75)	8.50	(5.78)	1.52	(2.94)	2.04	(2.38)
Total Payout	-33.57	(-3.94)	-52.95	(-7.63)	-1.37	(-7.50)	-1.15	(-13.10)
Past Year Return	1.76	(2.37)	1.60	(1.31)	7.87	(4.38)	3.82	(4.69)
Volatility	44.54	(1.09)	446.65	(1.99)	-0.95	(-28.98)	0.25	(31.97)
Capex	22.63	(2.36)	38.38	(2.22)	0.74	(4.56)	0.95	(18.25)
Cash	2.95	(2.46)	-2.05	(-0.50)	1.10	(2.39)	-0.30	(-1.87)
Inst. Ownership	-0.57	(-0.26)	4.78	(0.85)	1.00	(1.75)	0.87	(5.20)
Ind. Concentration	15.90	(2.26)	18.17	(2.58)	2.40	(14.54)	-0.25	(-2.39)
Stock Liquidity	1.63	(4.25)	0.75	(1.28)	3.31	(0.59)	0.41	(0.21)
Misvaluation (RRV)			1.56	(0.70)			0.04	(0.16)
Whited-Wu index			4.56	(0.58)			1.38	(8.42)
Manag. Ownership			0.88	(0.06)			0.67	(6.77)
EBC			1.04	(0.64)			0.43	(1.05)
Industry dummies	Yes		Yes		Yes		Yes	
Time dummies	Yes		Yes		Yes		Yes	
Clustering	Sic2		Sic2		Sic2		Sic2	
Adj. R^2	0.029		0.037		0.026		0.024	
Nobs	34345		9077		33465		8100	

Table 7: Shareholder Base and Propensity to Pay Special Dividends and Undertake a Repurchase

We relate company excess shareholder base to the likelihood of paying a special dividend and undertaking a repurchase. Panel A presents univariate results on the relationship between the excess shareholder base and the decision to pay special dividend and repurchase stock (likelihood and size) in the subsequent year.

Panel B presents results of a two-stage probit analysis of the relationship between the excess shareholder base, the likelihood of paying special dividends and likelihood of undertaking a repurchase. The dependent variable in the first stage is a dummy variable which takes a value of 1 if the company either pays out a special distribution (special dividend or repurchase) in the following year, 0 otherwise. The dependent variable in the second stage is a dummy variable which takes a value of 1 if a company undertakes a repurchase, 0 if it is a special dividend. We control for selectivity utilizing Heckman's lambda from the first stage selection regression. All regressions control for time and industry fixed effects with standard errors clustered at industry level.

Residual errors from the regression reported in Table 2 are used as our measures of excess shareholder base. All variables are described in Appendix. Marginal effects for all variables are multiplied by 100.

Panel A: univariate analysis

Excess Sh. Base	N	Likelihood of Special Dividend			Likelihood of Repurchase			Size of repurchase		
		Mean	t-stat	prob	mean	t-stat	prob	mean	t-stat	prob
High (Positive)	28065	1.40%	5.61	0.01	23.48%	4.63	0.01	1.41%	6.75	0.01
Low (Negative)	27939	2.02%			21.84%			1.17%		

Panel B: Shareholder Base and the Decisions to Pay Special Dividends and Undertake a Repurchase: two stage probit

	1st stage: the decision to make one-time distribution to shareholders						2nd stage: the choice between repurchases (1) and special dividends (0)					
	estimate	t-stat	ME	estimate	t-stat	ME	estimate	t-stat	ME	estimate	t-stat	ME
Excess Sh. Base	0.03	(3.09)	0.88	0.03	(2.60)	0.86	0.13	(2.89)	0.73	0.09	(1.85)	0.53
log (Market Cap)	0.09	(10.93)	2.59	0.07	(5.51)	2.04	0.12	(1.62)	0.68	0.02	(0.24)	0.10
log (B/M)	0.19	(10.23)	5.47	0.08	(2.81)	2.13	-0.02	(-0.11)	-0.12	-0.21	(-1.51)	-0.97
D/E	0.00	(0.13)	0.03	0.01	(0.88)	0.25	0.02	(0.55)	0.10	0.00	(0.00)	0.00
P/E	0.00	(-1.84)	-0.01	0.00	(-1.40)	-0.01	0.00	(-0.19)	0.00	0.00	(-0.20)	0.00
Operating Income	2.66	(13.09)	75.85	2.65	(12.18)	73.81	1.19	(0.54)	6.78	-2.78	(-1.03)	-12.88
R&D	0.04	(0.68)	1.04	0.04	(0.64)	1.17	5.08	(2.14)	29.00	6.31	(2.53)	29.26
Total Payout	0.65	(9.77)	18.40	0.63	(8.94)	17.61	-0.12	(-0.20)	-0.67	-1.04	(-1.50)	-4.83
Past Year Return	-0.12	(-6.76)	-3.38	-0.14	(-9.28)	-3.99	-0.58	(-4.97)	-3.33	-0.39	(-2.25)	-1.79
Volatility	-14.69	(-6.92)	-418.15	-21.44	(-8.74)	-597.57	4.88	(0.32)	27.87	36.07	(1.59)	167.28
Capex	-1.69	(-7.76)	-47.98	-1.78	(-8.26)	-49.70	-1.08	(-0.72)	-6.14	1.40	(0.81)	6.51
Inst. Ownership	0.33	(5.29)	9.36	0.29	(3.26)	7.96	0.80	(2.20)	4.56	0.27	(0.68)	1.25
Ind. Concentration	0.08	(0.43)	2.25	0.10	(0.50)	2.82	0.44	(0.82)	2.54	1.08	(1.42)	5.00
Stock Liquidity	-0.07	(-5.97)	-1.93	-0.06	(-5.03)	-1.60	0.04	(0.48)	0.20	0.08	(1.01)	0.36
Dividend Payout	-0.45	(-0.46)	-12.95	0.21	(0.31)	5.96	-10.46	(-5.07)	-59.72	-12.04	(-5.73)	-55.86
Misvaluation (RRV)				-0.34	(-8.46)	-9.58				0.37	(0.87)	1.72
Whited-Wu index				-0.39	(-2.07)	-10.82				0.41	(0.47)	1.88
Log(age)	0.08	(3.99)	2.27	0.09	(3.86)	2.46						
lambda							0.48	(0.46)	2.75	-1.37	(-1.07)	-6.36
Industry Dummies		Yes			Yes			Yes			Yes	
Time Dummies		Yes			Yes			Yes			Yes	
Clustering		Sic2			Sic2			Sic2			Sic2	
		0.0983			0.1084			0.2137			0.2493	
		56002			41060			12918			9341	