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We investigate whether corporate governance complements or substitutes for payout policy as an effective method of reducing agency cost through its interplay with the idiosyncratic risk of the firm. Corporate governance acts as a substitute for [complement to] the firm's dividend policy when its idiosyncratic risk is high [low]. Our empirical investigation reveals that moving from the weakest to the strongest quintile of corporate governance increases the predicted probability of dividend payout by 28% when the firm's idiosyncratic risk is at its lowest quintile. On the other hand, when the idiosyncratic risk is at its highest quintile, moving from the weakest to the strongest quintiles of corporate governance decreases the predicted probability of dividend payout by 32%. We also observe that the interplay of governance and idiosyncratic risk considerations shapes up managerial decisions for share repurchase, total payout, and dividend initiation.

JEL Classification: G10, G30

Keywords: Dividend policy; Idiosyncratic risk; Corporate governance; Stock repurchase; Dividend initiation; Agency costs

1. Introduction

The current literature offers two competing views on the relation between corporate governance and dividend payout: (i) one view suggests that they are complements; and (ii) the other view suggests that they are substitutes. We reconcile the two competing views by capturing the impact of idiosyncratic risk.

Strong governance may enforce a payout policy that reduces free cash flow which would have been at the disposal of managers, making corporate governance and dividend policy complement each other. On the contrary, other governance mechanisms may be employed to effectively control the behavior of managers, in which case corporate governance can substitute for the dividend policy. La Porta et al. (2000), Michaely and Roberts (2012), and Grullon and Michaely (2014) find evidence in support of corporate governance acting as a complement to dividend policy, while Hu and Kumar (2004), Officer (2011), and John, Knyazeva and Knyazeva (2015) report just the opposite. In a recent review, Farre-Mensa, Michaely, and Schmalz (2014) observe that "...There are still significant disagreements in the literature regarding how corporate governance affects payout policy."

In this paper, we highlight this debate by studying how corporate governance influences the payout policy under different levels of idiosyncratic risk, a key variable highlighted by Hoberg and Prabhala (2009) in dividend payout decision. Jensen (1986) suggests free cash flow leads to an overinvestment problem. To mitigate such an agency cost, good corporate governance should encourage dividend payout. However, when the idiosyncratic risk increases, underinvestment becomes a concern. DeMarzo, Fishman, He, and Wang (2012) and Panousi and Papanikolaou (2012) both develop theoretical models that predict decreasing investment with rising idiosyncratic risk under the assumption of managerial risk

aversion. Panousi and Papanikolaou (2012) further establish that the above mentioned effect is mitigated if managers are compensated with options or are under strict monitoring of institutional investors. Building on these arguments, we hypothesize that when the cost of overinvestment is high (proxied by lower idiosyncratic risk), good governance would encourage payout to reduce cash in the hands of the managers who might engage in value-destroying investments. On the other hand as the cost of underinvestment rises with increasing idiosyncratic risk, good governance would discourage payout to preserve cash for future value-increasing investments. The main prediction of our paper is: corporate governance will either complement or substitute dividend policy depending on the level of idiosyncratic risk of the firm.¹

We investigate the relation between governance and dividend policy at varying levels of idiosyncratic risk. Due to the unavailability of consistent corporate governance rankings from Risk Metrics/Institutional Investors Services (ISS), a large number of cross-sectional observations for a total of 4,028 firms is utilized to compensate the seven-year time-series data.² In the robustness tests, however, we extend study periods depending on alternative proxy measures of corporate governance introduced: (i) board independence (1996-2010); (ii) pay-performance sensitivity (1992-2010); (iii) big4 auditor (1999-2010); and (iv) blockholders (1986-2010).

We begin by investigating whether corporate governance matters in the dividend payout decision. In a simple univariate set up, we find that the dividend payers' median governance measure is 18% higher than that of the non-payers, suggesting that better governed firms are

¹ Systematic risk is much less of a concern for two reasons: (i) managers can hedge away exposure to systematic risk (Knopf, Nam, and Thornton, 2002); and (ii) the impact of systematic risk on investment is economically much smaller than that of idiosyncratic risk (Panousi and Papanikolaou, 2012).

² Subsequent to 2009, Risk Metrics/ISS has implemented major restructuring in the way the governance variables are constructed.

motivated to return money to investors. However, the idiosyncratic risks of the payers are significantly lower than the non-payers. Next, we examine our main premise of an asymmetric effect of corporate governance on dividend payout decisions hinged on the level of idiosyncratic risk faced by the firm. Consistent with this idea, we report that the interplay of governance and idiosyncratic risk is indeed a significant determinant of propensity to pay dividends. We find that moving from the weakest to the strongest quintile of corporate governance increases the predicted propensity of dividend payout by 28% when the firm's idiosyncratic risk is at its lowest quintile. On the other hand, when the idiosyncratic risk is at its highest quintile, moving from the weakest to the strongest quintiles of corporate governance decreases the predicted propensity of dividend payout by 32%. Our results remain robust to alternative measures of idiosyncratic risk and corporate governance and a number of variations of the baseline model.

Further, we test the joint effect of governance and idiosyncratic risk on the propensity of dividend payout in an enhanced model that controls explicitly for free cash flow and financial constraint. The empirical evidence supporting the asymmetric effect of corporate governance on dividend payout decisions is strengthened for firms susceptible to higher free cash flow problems and facing greater financial constraints.

We then extend our investigation to other related aspects of payout policy decisions: repurchase; total payout; and dividend initiation. We find that good governance discourages (encourages) share repurchase and total payout for firms with higher (lower) idiosyncratic risk similar to the dividend payout results. These results suggest that share repurchase may substitute for dividends as a disciplining mechanism. The intensity of this effect, however, is lower compared to dividend payout which is supported by the empirical evidence from the

payout literature that dividends are much stickier than repurchase and therefore a more credible monitoring mechanism. Also, we find that firms with stronger corporate governance are less inclined to initiate dividends when their idiosyncratic volatility is high compared to firms with weaker governance.³ In addition, we find that dividend initiation events are more often attributed to firms with stronger governance and lower idiosyncratic risk. These firms are also less likely to cut or omit dividends in the next five years compared to their counterparts with weaker governance and higher idiosyncratic risk. These results support the idea that firms with better governance exhibit greater prudence in shaping their dividend policy. They are less likely to initiate when the idiosyncratic risk is high, and if they do initiate, they are more likely to keep the promise. In sum, all of the above findings also support the earlier prediction of the asymmetric role of corporate governance in payout decisions under different level of idiosyncratic risk which is instrumental in reconciling the complement and substitute debate.

Our study makes several contributions. First, our findings add a new dimension of the joint effect of governance and idiosyncratic risk on payout propensity to the extensive literature on payout policy which helps in reconciling the complement and substitute debate. The most recent studies have focused primarily on disappearing dividends and offer several explanations of the phenomenon, such as substitution of dividends by share repurchase, changes in dividend tax, catering theory, failure of younger firms to initiate dividends, and finally risk (Grullon and Michaely, 2002; Chetty and Shaez, 2005; Baker and Wurgler, 2004; Denis and Osobov, 2008; Chay and Suh, 2009; Hoberg and Prabhala, 2009). There also exists an extensive literature studying the relation between governance quality and dividend

³ We employ a propensity score-based weighting approach in our model of propensity to initiate dividends to ensure that our dividend initiation evidence is not driven by omitted variables.

policy through the ambit of agency conflicts. As discussed earlier, the evidence is fairly mixed. Our results reveal that idiosyncratic risk not only continues to be an important consideration in regard to making payout decisions but when interacted with corporate governance it sheds a new light on the complement and substitution effect. Second, we add to the dividend literature by extending our study to include share repurchase, a payout method that has grown in popularity since 1983. We find that despite the joint effect of governance and idiosyncratic risk remaining negative and significant it is smaller in magnitude than its effect on dividend payout propensity. This is consistent with the notion that repurchase is not as effective a disciplining tool as dividends. We also include dividend initiation in our study, a major corporate event with important consequences in the short and long terms. We conclude that the interplay of governance and idiosyncratic risk shapes the decision to initiate dividends as well. Firms with better governance are more conservative in making dividend initiation decisions when idiosyncratic risk is high, and when they do, they are also less likely to omit or cut dividends in the years following initiation.

The rest of the paper is organized as follows. Section 2 reviews related literature and develops our hypotheses. Section 3 describes the data and provides summary statistics. Section 4 examines the joint effect of governance and idiosyncratic risk on the propensity to pay dividends and provides robustness analyses of our main results. Section 5 examines the joint effect of governance and idiosyncratic risk on the propensity to repurchase shares, total payout, and initiate dividends. It also documents whether or not governance and idiosyncratic risk jointly affect the likelihood of firms keeping up with a steady dividend payment in the years following initiation. Section 6 presents the conclusions.

2. Literature review and hypothesis development

There is an extensive literature studying the relation between governance quality and dividend policy through the ambit of agency conflicts. A firm ideally retains its free cash for precautionary needs or pay out to shareholders in the absence of profitable real investment opportunities in the near future. The empirical evidence suggests a positive relation between governance, cash reserves, and its utilization. Harford, Mansi, Maxwell (2008) find that firms with weaker corporate governance structures have smaller cash reserves. Dittmar and Mahrt-Smith (2007) also document that poorly governed firms have a lower value of cash holding. Both studies find that poorly governed firms tend to spend cash quickly, rather than hoard it. Firms could also invest their cash into risky financial assets. Duchin, Gilbert, Harford, and Hrdlicka (2015) document that U.S. industrial firms invest heavily in non-cash, risky financial assets, and those investments are undertaken by poorly-governed firms. Thus, despite the firm's need to save cash for precautionary motive, poorly governed firms would suffer from lower value of cash-holding and they tend to have lower returns in their financial investments. However, whether weakly governed firms are more inclined to pay dividends in order to reduce the sub-optimality of their cash-holding and financial investments is much debated. La Porta et al. (2000) arguably open the complement versus substitute debate between corporate governance mechanisms and dividend policy in disciplining managers. They propose and test the "outcome model" and "substitute model" of dividends. In their outcome model, minority shareholder rights are associated with higher dividend payout, which implies corporate governance complements dividend policy. Dividend payout can be the result of effective governance where strong governance forces management to payout to mitigate free cash flow problems, making corporate governance and dividend payout complement each other. On the contrary, other governance mechanisms may be employed to

effectively control the behavior of managers, in which case, corporate governance can substitute for dividend payout. The substitute argument predicts that dividend payout is negatively related to the quality of corporate governance, while the complement argument predicts a positive relation. Evidence on the relation between dividend payout and governance mechanisms is mixed. A well-known result in corporate finance literature is that of free cash flow leading to an overinvestment problem documented by Jensen (1986). To mitigate such an agency cost, *ceteris paribus*, good corporate governance encourages dividend payout. La Porta et al. (2000), Michaely and Roberts (2012), and Grullon and Michaely (2014) find that firms with stronger governance indeed make larger dividend payments in order to reduce agency conflicts, supporting the view that corporate governance is a complement to dividend policy. In contrast, Hu and Kumar (2004), Officer (2011), John, Knyazeva, and Knyazeva (2015) report the opposite, supporting the view that corporate governance is a substitute to dividend policy.

In this paper, we reconcile these competing views by highlighting the impact of idiosyncratic risk on the relation between corporate governance and dividend policy. The importance of idiosyncratic risk on payout policy is well-known. Hoberg and Prabhala (2009) report that idiosyncratic risk alone explains 40% of the disappearing dividends phenomenon in the United States. Chay and Suh (2009) document that cash flow uncertainty proxied by stock return volatility is negatively related to the decision of paying dividends using international data. DeMarzo, Fishman, He, and Wang (2012) and Panousi and Papanikolaou (2012) both develop theoretical models that assume managerial risk aversion and predict decreasing investment with rising idiosyncratic risk. Moreover, the tradeoff between investment and dividend is a fairly well-established view in both the capital structure and

dividend payout literature. Fama and French (2002) document that firms with larger investments relative to earnings have lower long term dividend payments because there is less need to discipline managers under these circumstances. Grullon et al. (2002), DeAngelo and DeAngelo (2006), and DeAngelo et al. (2006) advance the life-cycle theory by observing a negative association between dividend payouts and investment opportunities. As a result, when the cost of underinvestment rises with increasing idiosyncratic risk, good governance should discourage payout to preserve funding for future value-enhancing investment. On the other hand, when the cost of overinvestment rises with decreasing idiosyncratic risk, good governance should encourage payout to reduce free cash flow problems. Therefore, we believe that the effect of governance on the dividend policy hinges upon the idiosyncratic risk of the firm. To be specific, we argue that the relation between corporate governance and dividend payout propensity is positive when the idiosyncratic risk is low but becomes less positive or even negative as the idiosyncratic risk increases.

The main prediction of our paper is that quality of corporate governance will both complement and substitute for dividend policy depending on the level of the idiosyncratic risk of the firm. Empirically, we predict that the relation between governance and dividend payout propensity is positive when the idiosyncratic risk is low and becomes negative as the idiosyncratic risk increases. Hence, our main testable hypothesis is as follows:

The firm with better governance is more likely to pay dividends when the idiosyncratic risk is low and less likely to pay dividends when the idiosyncratic risk is high.

The key role played by corporate governance in dividend policy, as reflected in the empirical results is fairly intuitive. After all, corporate governance is not only about “how investors get the managers to give them back their money” (Shleifer & Vishny, 1997) but

also about accountability to providers of capital, which would imply that an important corporate policy decision such as dividend payout will be closely monitored within a stronger corporate governance environment.

We relate payout policy to the firm's effort in balancing the overinvestment and underinvestment problem based on its quality of corporate governance. Further, we expect that the negative effect of the interaction term between governance and idiosyncratic risk on dividend payout policy would be magnified in the presence of excess free cash flow. In addition, prior studies document the importance of costly external finance on the cash policy. For example, Almeida, Campello, and Weisbach (2004) find that firms exhibit a greater propensity to save cash from their cash flow when they face higher costs of external finance. Faulkender and Wang (2006) report that the marginal value of cash is greater in firms with limited access to external capital markets than in firms that are less financially constrained. As Denis and Sibilkov (2010) noted, the findings on cash policy have implication on payout policy as well. That is, payout policy is relevant to shareholders through its impact on investment in the presence of costly external finance. Thus, we expect that our main finding is not only robust when controlled for free cash flow and financial constraint but is also stronger when larger free cash flow and financial constraint are presented. The first testable corollary of our hypothesis is as follows:

Corollary 1: The negative effect of the interaction between corporate governance and idiosyncratic risk on dividend payout propensity is stronger when the firm's free cash flow is large and for the firm facing financial constraint.

Allen and Michaely (2003) note the growing importance of repurchases since 1983. However, while it is not very clear to what extent the alternative form of payout, share

repurchase, plays a role in disciplining managers given that dividends are arguably a better controlling tool than repurchases (see Jagannathan, Stephens, and Weisbach, 2000; and Guay and Harford, 2000). Skinner (2008) documents that the positive relation between earnings and dividend payout observed in the past is now also observed for total payout defined as dividend plus repurchase as well, which suggests that firms consider both dividend and repurchase are effective ways of paying out earnings. We extend our study by investigating whether our earlier finding that governance either complements or substitutes for dividend policy based on the level of idiosyncratic risk of the firm is corroborated by models predicting the probability of both repurchase and total payout. Our second testable corollary is:

Corollary 2: The interaction between corporate governance and idiosyncratic risk is negatively related to repurchase propensity and total payout propensity.

Dividend initiation is considered to be a major corporate event in the life of a firm. Not only is it closely related to most financial and investment decisions of the firm but it also involves a long term commitment of a payment substantial amount of money on a repeated basis. Allen and Michaely (2003) document that corporations smooth dividends and rarely cut them. In the same literature review, they summarize studies on payout policy by Healy and Palepu (1988), Michaely, Thaler and Womack (1995), Barberis, Shleifer, and Vishny (1998), which show that initiations, on average, have positive announcement returns of approximately 3%, while omissions have negative announcement returns of approximately 7%. Clearly, from market reactions, managers are motivated to announce dividend initiations and avoid dividend cuts or omissions whenever possible. Therefore, it is reasonable to expect that the interplay of governance and idiosyncratic risk consideration is likely to affect the

decision of initiating dividend in a manner similar to paying dividends. Our last testable corollary is as follows:

Corollary 3: The interaction between corporate governance and idiosyncratic risk is negatively related to dividend initiation propensity and total payout propensity.

3. Data and Summary Statistics

3.1. Sample selection

We analyze the dividend decisions of firms from 2003-2009. Our sample period ends in 2009 due to the unavailability of a consistent Industry Corporate Governance Quotients (ICGQs), the primary governance rank measure used in this study. ISS has implemented major restructuring in the way the governance variables are constructed after 2009. The sample consists of the firms for which ISS collects data on governance standards and also for which security market and accounting data are available in the Center for Research in Security Prices (CRSP) and Standard & Poor's COMPUSTAT databases. To ensure that the firms are publicly traded, we include firms with CRSP share codes of 10 or 11. We require that the sample firms have price and shares outstanding available for December of year t and at least 100 trading days for estimating the risk measure for the same calendar year, t . We exclude utilities (SIC Codes 4900-4949) and financial firms (SIC Code 6000-6999). We also require that the firms have the accounting data in COMPUSTAT for fiscal year t that are used to construct the variables for our analyses.

Part A of the Appendix describes definitions of key measure of governance index, risk measures, and dividend decision variables and Part B presents the definitions of control variables and other relevant variables. RiskMetrics/ISS provides ICGQs that measure sample firms' percentile positions within their Global Industry Classification Standard (GICS)

industry groups.⁴ ICGQs are the most discernable commercial governance ratings based on 64 governance variables constructed from several dimensions of board structure (composition, independence), executive and director compensation, ownership, corporate audit, charter, bylaw provision, takeover defenses, progressive practices (performance reviews and succession plans), and director education. ISS covers a vast majority of publicly traded firms, approximately 5,000 firms every year in our data period. This makes ICGQ the most comprehensive corporate governance measure available for a boarder set of firms compared to several academic governance measures that cover only the S&P1500 companies. Moreover, it is important to note that this rating adjust for industry and size and its algorithm also accounts for broader changes in market condition. This clearly provides ICGQ with an advantage over some of the check-and-sum academic measures that disregard the variation in governance standards and practices across industries or any time-varying market changes.⁵ The governance rank for a firm in year t is the ICGQ as reported in December of that year. The final sample in the payout propensity analysis consists of 18,037 firm-years over the study period.

3.2. Variable definitions and summary statistics

Idiosyncratic risk of a firm is measured by the standard deviation of residuals from a regression of its daily excess stock returns on the market risk premium, following Hoberg

⁴ The definition of the 24 GICS industry groups can be found at <http://www.msci.com/products/indexes/sector/gics/>.

⁵ We acknowledge that the index only reflects the within-industry quality of corporate governance. Thus, it is not necessarily a fitting indicator of the cross-industry quality of corporate governance. However, under a more realistic assumption that investment decision and dividend decision are not independent, one could expect an industry effect to exist for dividend decisions. Many studies recognize such an effect, including Lintner (1956), Michel (1979), Marsh and Merton (1987), Smith and Watts (1992), and Christie (1994). In particular, Smith and Watts (1992) use industry-level data to test dividend policy. In their survey paper, Brav et al. (2005) report that 38.3% of executives indicate that the dividend policies of their competitors and other companies in their industries play an important role in their own dividend decisions. Therefore, we believe that using ICGQ could provide useful insight into how governance affects dividend decisions. Later in the paper, we also test our main results using different governance proxies from the literature which are not industry-adjusted and find consistent results.

and Prabhala (2009). We also use the idiosyncratic risk estimated using the Fama and French 3-factor and Carhart 4-factor models and the Campbell, Lettau, Malkiel, and Xu (2001) approach adjusting for market and industry. Our results remain robust with different versions of idiosyncratic risk.

The control variables used in our main regression models are market-to-book, defined as ratio of book value of assets minus book value of equity plus market value of equity, all scaled by book value of assets; asset growth from year $t-1$ to year t , defined as the ratio of book value of assets in year t over book value of assets in year $t-1$ minus 1; and profitability, defined as earnings before extraordinary items plus interest expense plus deferred income taxes, all scaled by book value of assets. All variables are the same as those in Hoberg and Prabhala (2009).

We use NYSE percentile as our firm size proxy. NYSE percentile is the NYSE market capitalization percentile, i.e., the fraction of NYSE firms having market capitalization equal or smaller than firm i in year t . In the dividend payout propensity regression, we use the NYSE percentile as the size proxy to make our results comparable to previous studies on dividend propensity.

We use two other control variables in our main logit models: RE/TE, measured as a ratio of retained earnings to total common equity, winsorized at the 5th and 95th percentile and TE/TA, measured as a ratio of total common equity to total asset, a variable commonly used to account for the effect of the firm's capital structure on dividend policy in the literature. Both variables are defined for firms with positive total common equity as in DeAngelo, DeAngelo, and Stulz (2006).

Table 1 presents firm characteristics of dividend non-payers and payers sorted by the level of idiosyncratic risk. The full sample consists of 18,037 firm-years from 2003 to 2009. The low (high) idiosyncratic risk subsample consists of observations with idiosyncratic risk lower (higher) than the sample median in each year. We code the firm-year observation as dividend payer if the amount of dividend payment is positive in the fiscal year, thereby segregating the full sample into 4,745 non-payers, 4,273 payers among the firms with low idiosyncratic risk and 7,994 non-payers, 1,025 payers among the firms with high idiosyncratic risk. The substantially higher (lower) number of non-payers (payers) among the high risk firm is consistent with the central idea of Hoberg and Prabhala (2009). We first examine the average governance index (ICGQ) of the payers and non-payers among the firms segregated by idiosyncratic risk. At first glance, the results of difference tests based on t-tests for equality of means and Wilcoxon test for equality of medians, indicate that the firms' governance among the dividend payers is higher than that of the non-payers, suggesting that better governed firms are motivated to return money to investors, regardless of the risk category. This supports the theory of governance acting as a complement to dividend policy. However, on closer inspection, the difference in median governance between payers and non-payers among the firms with lower idiosyncratic risk is 9.5 percentile points, substantially higher than the 3.5 percentile point for firms with higher idiosyncratic risk. The results are consistent with our empirical prediction that better governed firms are more inclined to pay dividends when their idiosyncratic risk is low. Among the high idiosyncratic risk firms the considerably smaller difference of 3.5 percentile points in median governance quality between the payers and non-payers may be indicative of governance substituting for dividend policy, when idiosyncratic risk is high. Prior dividend

literature documents that dividend payers and non-payers fundamentally differ across various market-based and accounting variables. Other factors deemed critical in the dividend policy literature, such as market-to-book, asset growth, profitability, size (Fama and French, 2001), retained earnings-to-total equity and total equity to total asset (DeAngelo, DeAngelo, and Stulz, 2006), significantly differ between the payers and non-payers across the idiosyncratic risk categories, in manners consistent with that literature. The group of dividend payers comprise of larger and more profitable firms while the non-payers comprise of firms with higher market-to-book (a commonly used proxy for growth opportunities) and faster rate of asset growth.

[Insert Table 1]

4. Corporate Governance, Idiosyncratic Risk, and Propensity to Pay Dividends

We conduct pair-wise correlation analysis for all variables that are deployed in most of our multivariate analysis of dividend propensity. The Pearson correlation coefficients and Spearman rank correlation coefficients are reported in Table 2.

[Insert Table 2]

We inspect the correlation coefficients to ensure that our variables do not suffer from a severe case of multicollinearity that may afflict the validity of our multivariate regression analyses. Firm size and ICGQ show a moderately high positive correlation at 47.3% which is not surprising because larger firms, subject to greater market scrutiny, are more likely to adapt better corporate governance practices. However, the other pairwise correlations coefficients have expected signs but fairly small in size to raise any concern. In particular, the correlation coefficients between ICGQ and idiosyncratic risk, our main measure of interest, range between -25.4% and -33.9%. This suggests that they have relatively close

association in that better governed firms are less risky in general. However, we find that condition index is less than 10 in our diagnostic test, which indicates that multicollinearity is not severe.

4.1. Baseline Model

In this section we present evidence supporting our main prediction that corporate governance and dividend policy are complements or substitutes depending on the level of idiosyncratic risk.

[Insert Table 3]

This table reports Fama and MacBeth (1973) style estimates of a logit model with the dependent variable, with the payer indicator equal to one in year t if the firm has a positive dividend per share by the ex-date in fiscal year t and zero otherwise. One cross-sectional model is estimated per year and standard errors are Newey-West (two lags) adjusted.

In column 1 of Table 3, the governance index predicts higher odds of dividend payout in absence of firm risk, supporting the complement theory. However, in column 2, when we add idiosyncratic risk, the governance index demonstrates a marginally significant negative relation with propensity to payout, evidence that supports the substitute theory, and idiosyncratic risk is significantly negatively related to propensity to payout, supporting the findings of Hoberg and Prabhala (2009). This also indicates that how governance interacts with risk in dividend payout decisions merits further exploration. In this specification, we also add RE/TE, measured as a ratio of retained earnings to total common equity, winsorized at the 5th and 95th percentile and TE/TA.⁶ It is easy to see why RE/TE, which is a ratio of earned equity would be positively related to payout propensity. This supports the findings of

⁶ The results are similar if the RE/TE is winsorized at the 1st and 99th percentile. However, we have a fairly large number of negative RE/TE observations, which drives the mean to -0.68, significantly lower than the median of 0.23. This may be responsible for the predicted probability being largely undervalued when every variable is at its mean.

life cycle theory of DeAngelo, DeAngelo, and Stulz (2006). Finally, in column 3, we test our premise of the asymmetric likelihood of payout by firms at varied levels of corporate governance under changing scenario of investment opportunity proxied by the idiosyncratic risk by adding an interaction term between ICGQ and idiosyncratic risk, and as predicted, the variable of interest is significantly negative. We work under the notion that lower idiosyncratic risk implies overinvestment and higher idiosyncratic risk implies underinvestment problem. This is supported by earlier studies, such as DeMarzo, Fishman, He, and Wang (2012) and Panousi and Papanikolaou (2012). Therefore, when the cost of underinvestment rises with increasing idiosyncratic risk, good governance should discourage payout to preserve funding for future value-enhancing investment. On the other hand, when the cost of overinvestment rises with decreasing idiosyncratic risk, good governance should encourage payout to reduce free cash flow problems. As a result, we predict that relation between corporate governance and dividend payout propensity is positive when the idiosyncratic risk is low but becomes less positive or even negative as the idiosyncratic risk increases. Our results in Table 3 support this empirical prediction.⁷ In addition, similar to the univariate results, reported in Table 1, larger, more profitable firms with a higher proportion of retained earnings show higher likelihood of paying dividends, while firms with higher market-to-book (a commonly used proxy for growth opportunities) and faster rate of asset growth show lower likelihood of paying dividends, evidence consistent with prior literature.

To assess the economic significance of our results, we rank each independent variable for each year, and then partition the resulting ranks into quintiles labeled from 1 (lowest quintile) to 5 (highest quintile). Then we rerun our propensity to pay dividend regression and report

⁷ We also test our corporate governance, idiosyncratic risk and dividend payout hypothesis using probit and linear probability models. All results remain consistent with our original findings.

the estimates in Panel A of Table 4. The results from these quintile regressions further confirm that the governance's impact on dividend payout propensity decreases with the idiosyncratic risk. Moreover, it suggests that our findings are not driven by extreme value of any independent variable.

[Insert Table 4]

In the first two rows Panel B of Table 4, we present the predicted probabilities of dividend payout using model as specified in Panel A. They represent the probability of a firm paying dividend when its corporate governance belongs to the highest and the lowest ICGQ quintiles for the five idiosyncratic risk categories. The control variables are held constant at their medians for the purpose of calculating the predicted probabilities. For both the strong and weak governance firms, we observe that the predicted probability declines with increasing idiosyncratic volatility. This highlights the importance of idiosyncratic risk on propensity of dividend payout, consistent with Hoberg and Prabhala (2009).

The third row of Panel B, reports the percentage change in predicted probability of dividend payment by a firm when it moves from the 1st (weakest) to the 5th (strongest) quintile of governance ranking (ICGQ) for individual idiosyncratic risk quintile. We find that when the idiosyncratic volatility is at its lowest quintile, moving from the 1st quintile to the 5th quintile of governance increases the predicted probability of dividend payout by 28.04% $(=(42.01-32.81)/32.81)$. On the other hand, when the idiosyncratic volatility is at its highest quintile, moving from the 1st (weakest) quintile to the 5th (strongest) quintile of governance decreases the predicted probability of dividend payout by 32.12% $(=(5.77-8.50)/8.50)$. Collectively, these findings suggest an economically meaningful impact of governance on dividend payout propensity under low and high level of idiosyncratic risk that support how

governance acts both as a complement and substitute of dividend policy for low and high idiosyncratic risk of a firm respectively.

4.2. *Robustness Tests*

In Table 5, we run additional tests to ensure the robustness of our previously documented result. First, we investigate whether our results hold up using an alternative proxy of idiosyncratic risk to address the concern that firm specific risk may be systematically different across industries. The alternative proxy of idiosyncratic risk is estimated as each firm's residual volatility after accounting for market and industry volatility, in the context of the Campbell, Lettau, Malkiel and Xu (2001) approach. The interaction term remains negatively significant suggesting that our results are robust to an alternative idiosyncratic risk measure.⁸ In column 2, to ensure that our results are not driven by smaller firms that are less likely to pay dividends, we test our model exclusively on S&P 1500 firms. Our results remain unchanged. Bliss, Chen, and Denis (2015) find a spike in cash retention by firms in response to supply of credit during financial crisis. In column 3, we investigate whether our results merely reflect firms' reaction to the recent financial crisis in that better governed firms choose not to pay dividend when risk is high while poorly governed firms simply go out of business. We exclude the observations from 2007 to 2009 and find stronger statistical significance of the interaction term between governance and risk. In column 4, we explore the impact of the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003, which reduces the maximum tax rate on dividends and therefore makes dividends more attractive to investors. Because our data period starts in 2003, we drop 2003 to ensure that our results are

⁸ Our results are similar when idiosyncratic risk is estimated using the multifactor Fama and French model. In addition, the results are consistent if the industry fixed effect is added to the cross-sectional regressions in the Fama-MacBeth procedure.

free from any effect of the JGTRRA. The interaction between governance and risk remains significantly negative suggesting that our finding is not affected by the JGTRRA.⁹ Furthermore, all variables in our main model belong to the same fiscal year, which makes our results comparable to those in the current literature. However, it is likely that dividend payouts affect the firm's risk as well as its governance. To account for such a concern of reverse causality, we measure governance and risk in the year prior to dividend distribution in column 5 and measure every other independent variable in the year prior to dividend distribution in column 6. Our results remain robust with an even stronger statistical significance than before indicating that they are not driven by reverse causality. The most notable result is that in columns 1 through 6, though ICGQ independently has a significantly positive impact on the propensity to pay dividend, it is subsumed by the interaction term between ICGQ and idiosyncratic risk. This supports our prediction that the relation between corporate governance and dividend payout propensity changes from positive to negative as the idiosyncratic risk increases.

[Insert Table 5]

Academic researchers and industrial experts often find it difficult to agree on the validity of measures of corporate governance (see Gompers, Ishii, and Metrick, 2003; Core, Guay, and Rusticus, 2006; Bebchuk, Cohen, and Ferrell, 2009; Johnson, Moorman, and Sorescu, 2009; Daines, Gow, Larcker, 2010). We employ ICGQ, provided by RiskMetric/ISS, which is apparently the most widely accepted governance rating, with roughly 1,700 institutional clients following. Given the contentious nature of this literature, we next investigate the

⁹ In unreported analyses, we add a dummy equal to 1 if the observation is in 2003 in a panel regression with industry fixed effects and find the dummy to be significantly positive. This suggests that change in dividend tax has significant impact on the propensity of paying dividend, yet our results are not affected by it.

extent to which our findings are dependent on our choice of corporate governance measure, ICGQ, or the restricted sample period over which the measure is available. We conduct further tests in which we use samples collected over extended periods and alternative proxies of corporate governance borrowed from the prior literature on board structure, executive compensation, audit quality, and blockholders.

Board independence is measured by independent directors as a percentage of total number of the directors on board. Rosenstein and Wyatt (1990), Knyazeva, Knyazeva, and Masulis (2013), and Armstrong, Core, and Guay (2014) alongside several others document that corporate board independence plays a valuable monitoring role. The board of director data are obtained from the RiskMetrics Director database from 1996 to 2010. Pay-performance sensitivity (Delta), a commonly used construct that measures the degree of alignment of interest between management and shareholder (see Core, Guay, and Larcker (2003) for a review) is defined as dollar change in CEO's wealth associated with a 1% change in the firm's stock price (in \$000s) based on the algorithm provided by Coles, Daniel, Naveen (2013) using the Execucomp database from 1992 to 2010.¹⁰ Big 4 Auditor is a dummy that is equal to 1 if the firm uses any of the following auditors: PricewaterhouseCoopers, Deloitte Touche Tohmatsu, Ernst & Young and KPMG. The data are obtained from COMPUSTAT from 1999 to 2010 where the auditor code is available.¹¹ Blockholder is measured as the percentage of shares held in each firm by the firm's largest institutional shareholder. Cremer and Nair (2005), Chen, Harford, and Li (2007), and many others use this blockholder monitoring measure to proxy for internal governance.

¹⁰ We thank Lalitha Naveen for providing the algorithm and data on her website <http://sites.temple.edu/lnaveen/data/>

¹¹ DeAngelo (1981) documents the larger auditors are associated with better auditing quality. The Big 4 auditors are often studied in recent studies like Francis and Yu (2009).

Blockholder data are obtained from 13-F filings provided by Thomson Reuters from 1986 to 2010.¹²

[Insert Table 6]

Column 1 of Table 6 reports the results of the dividend propensity model using board independence as a proxy for corporate governance. Column 2 reports the same results using Delta as a proxy for corporate governance. Column 3 reports the results of the dividend propensity model using Big 4 Auditor as a proxy for corporate governance. Finally, column 4 reports the results using Blockholder as a proxy for corporate governance.

To sum up, all four alternative governance proxies show a stronger joint effect of governance and idiosyncratic risk on dividend payout decisions, which suggests that our earlier findings are not confounded by the use of alternative proxies of corporate governance over extended sample periods.

4.3. Impact of Free Cash Flow

Prior literature suggests that firms face a trade-off between benefits and costs related to cash retention. On one hand, the cost of retention rises with excess cash and firms with excess cash would be more inclined to distribute dividends to reduce the cost of retention supporting the propositions of Easterbrook (1984) and Jensen (1986). On the other hand, the advantage of retaining cash grows with level of financial constraint. Firms build cash reserves as a valuable buffer against shocks to their cash flows or investment opportunities. Thus, firms tend to hold greater cash balances when they face costlier external finance.¹³

¹² The results are similar when Blockholder is defined as the percentage of shares held in each firm either by the firm's top 5 institutional shareholders or by all the firm's institutional shareholders.

¹³ In an earlier study, Chae, Kim, and Lee (2009) find that the positive relation between governance, agency conflict and dividend policy changes sign when confronted with external financial constraint. They interpret these findings as firms facing higher (lower) financial constraint make lower (higher) payouts as their corporate governance

Almeida, Campello, and Weisbach (2004), Faulkender and Wang (2006), and Denis and Sibilkov (2010) report evidence consistent with these predictions.

Therefore, a natural, next step is to test joint effect of governance and idiosyncratic risk on propensity of dividend payout in an enhanced model that controls explicitly for agency costs and financial constraints. We introduce the measures of free cash flow (FCF) and financial constraint following the past literature. Our first FCF proxy is defined as operating income minus the total income taxes plus change in deferred taxes minus total interest expenses all scaled by book value of assets, as defined by Lehn and Poulsen's (1989). Our second FCF proxy is the one proposed by Leuz, Triantis, and Wang (2008), industry-adjusted internally financed growth. It is defined as $ROA/(1-ROA)$ minus the GICS industry group median asset growth. For financial constraint, we employ the KZ-index to proxy as defined by Kaplan and Zingales (1997). We reconstruct the KZ-index for each firm-year using the following equation:

$$KZ = -1.002(CF/TA) - 39.368(DIV/TA) - 1.315(CA/TA) + 3.139LEV + 0.283Q,$$

where, CF/TA is the earnings before extraordinary items plus depreciation and amortization scaled by lagged book value of assets; DIV/TA is total dividend payments, scaled by lagged book value of assets; CA/TA is cash, scaled by lagged book value of assets; LEV is total debt divided by the sum of total debt and total stockholder equity; and Q is the market-to-book ratio. The components of the KZ -index are winsorized at the 1st and 99th percentile before construction.

Table 7 reports Fama and MacBeth (1973) style estimates of a logit model with the dependent variable, payer indicator, equals to one in year t if the firm has a positive dividend

improves. They use idiosyncratic volatility as a proxy for financial constraint. However, we found that the findings of Chae et al. (2009) are not robust to alternative proxies of financial constraint.

per share by the ex-date in fiscal year t and zero otherwise. The model includes some additional variables that account for agency costs and financial constraints with 17,275 firm-year observations from 2003 to 2009. Although the study period, between 2003 and 2009, is relatively short due Although the study period, between 2003 and 2009, is relatively short due e Although the study period, between 2003 and 2009, is relatively short due

[Insert Table 7]

Columns (1) and (3) show a positive association between high free cash flow and propensity to pay dividends, supporting the agency cost propositions. Idiosyncratic risk negatively predict dividend payout, consistent with Hoberg and Prabhala (2009). Financial constraint, as documented in the recent literature, notably Denis and Sibilkov (2010) and Campello, Graham, and Harvey (2010), negatively predict dividend payout propensity. Our original finding of a negative relation between the interaction of governance and risk and the propensity to pay dividends continues to be robust and the signs on all other variables remain unchanged. Our results are robust to the alternative measures of financial constraint suggested by Whited and Wu (2006) and Hadlock and Pierce (2010).

In columns (2) and (4), we introduce a three-way interaction term between governance, idiosyncratic risk and high free cash flow dummy. Our primary hypothesis relates payout decision to the overinvestment and underinvestment problems, which stem from agency problem of managerial risk aversion, and that governance complements or substitutes for dividend payout based on whether the firm faces over or underinvestment problem. Therefore, we predict that our results should strengthen when explicitly controlled for agency cost, high free cash flow. Consistent with this prediction, we find that the three-way interaction term is significantly negative, while the signs on all other variables remain

unchanged. This implies that the joint effect of governance and idiosyncratic risk on dividend payout propensity is stronger for firms with high FCF. Our conclusion is that the main findings are strengthened in the presence of agency problems.

5. Stock Repurchase, Total Payout, and Dividend Initiation

5.1. *Stock Repurchase*

Skinner (2008) documents that the positive relation between earnings and dividend payout observed in the past is now true for total payout defined as dividend plus repurchase as well, suggesting that firms consider both dividend and repurchase as effective ways of paying out earnings. We investigate whether our earlier findings on dividend payout are corroborated by models predicting the probability to repurchase or total payout.

Table 8 presents Fama and MacBeth (1973) style estimates of a logit model with Newey-West (two lags) adjusted standard deviation. The dependent variable is equal to one for share repurchasing firms, large share repurchasing firms, and total payout (dividend and stock repurchase combined) firms in columns (1), (2), and (3), respectively, and zero otherwise. In column (1), we find that the coefficient of the interaction term between governance and idiosyncratic risk remains negative and significant but with a lower magnitude. This is consistent with the prediction that the level of idiosyncratic risk remains an important determinant in repurchase decisions even though its magnitude is smaller than the case of dividend payment propensity. The coefficient is larger for large repurchases, supporting that large scale repurchase is potentially a stronger disciplining tool. The propensity of the total payout model (3) shows that the magnitude of the interaction is now close to what we found for dividend paying propensity alone. We rerun the regressions using a subsample of non-dividend payers to ensure that our results are not driven by the firms that simultaneously pay

dividends and repurchase. The results are reported in columns (4) and (5). We again find that the interaction between governance and idiosyncratic risk is negative and significant, suggesting the robustness of our findings on repurchase.¹⁴ The results indicate that both in the full sample as well as the subsample of non-dividend payers, corporate governance complements (substitutes for) share repurchase and total payout policy when the idiosyncratic risk of the firm is low (high).

[Insert Table 8]

5.2. Dividend Initiation

Dividend initiation is not only closely related to most financial and investment decisions of the firm but also involves a long-term commitment of paying a substantial amount of earnings on a repeated basis. Prior studies (see, Healy and Palepu (1988), Michaely, Thaler and Womack (1995), Barberis, Shleifer, and Vishny (1998)) show that initiations, on average, have positive announcement returns of approximately 3%, while omissions have negative announcement returns of approximately 7%. Clearly, from the market reactions, managers are motivated to announce dividend initiations and avoid dividend cuts or omissions whenever possible. Therefore, it is reasonable to expect that the interplay of governance and risk consideration is likely to affect the decision of initiating dividend in a manner similar to paying dividends. We test this empirical prediction in a multivariate logit model.

Table 9 reports the results of logit regression that analyzes the decision to initiate dividend payments. The regression uses an initiation indicator as the dependent variable that takes on the value of one if the firm was not a payer for the last five calendar years and has a

¹⁴ We define the repurchase as in Grullon and Michaely (2002). Our results are robust to the alternative definition of repurchase (net repurchase) as in Skinner (2008).

regular cash dividend announcement (CRSP DISTCD 1220-1259) in the current calendar year (event date is obtained from CRSP DCLRDT) and zero otherwise.¹⁵ The sample consists of 6,704 firm-years, from 2003-2009. We identify the initiators in year t as those firms that have positive earnings in the previous fiscal year and have not paid dividends in the years $(t-5, t-1)$.

We find that the two-way interaction between governance and idiosyncratic risk is negative as shown in columns (1), (2), and (3). This is consistent with our prediction on the asymmetric impact of governance on dividend initiation based on the firm's idiosyncratic risk, in that better governed firms are more likely to initiate dividends when idiosyncratic risk is low and less likely to do so when idiosyncratic risk is high. Payout policy, similar to several other corporate decisions is widely known to be vary across industries. It could also be influenced by unobservable firm characteristics. The results reported in columns (2) and (3) mitigate concerns that our findings are either an artifact of deviations across industry or missing firm characteristics by adding industry- and firm-fixed effects to the initiation regression reported in column (1). The asymmetric impact of governance on dividend initiation based on firm risk, is strengthened after the variations between industries and firms are controlled for.

[Insert Table 9]

5.2.1. Dividend initiation event and firm behavior in the post-event period

In this section we study the 223 dividend initiation events (every initiation event is linked to a unique firm) that occurred during the period 2003-2009 by 1,898 unique firms that constitute our original sample of 6,704 firm-years in the dividend initiation analysis.

¹⁵ Initiators are identified following the procedure in DeAngelo, DeAngelo, and Stulz (2006).

Given our earlier findings, we anticipate a substantially large number of initiators among the firms with stronger governance and lower risk. We also investigate how the dividend policy of these firms shape up over the next five years. We choose a fixed window in accordance with the corporate finance literature and considering that our sample period ends in 2009, a five year post-event window seems to be a reasonable choice.¹⁶ We find that roughly 47% of the 223 dividend initiation events are attributed to firms with stronger corporate governance and lower idiosyncratic risk. These firms are also 28% less likely to cut or omit dividends in the next five years compared to their counterparts with weaker governance and higher risk. These results support our claim that governance and risk jointly affect the dividend policy.

Figure 1 depicts the dividend initiating firms' mean (the solid line) and median (the dash line) idiosyncratic risk five years prior to the dividend initiation. The sample consist of 214 dividend initiation events from 2003 to 2009 of firms for which return data (used in measuring idiosyncratic risk) are available for all five years prior to the event. Year t is the year of initiation, year $t-1$ is the year immediately prior, and so on. The chart helps to corroborate the idea that risk is an important component in determining dividend policy, and the firms that initiate dividends indeed experience a decline in their risk in the five years prior.

[Insert Figure 1]

Figure 2 depicts the number of firm-initiation events, and their probabilities of omitting or cutting dividend within five years after initiation for the 223 dividend initiation events from 2003 to 2009 for which data are available from Risk Metrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. The four subgroups are created on the basis

¹⁶ For example, Lehn and Zhao (2006) check whether CEOs who oversee bad M&As are fired within a five year window after the acquisition.

of idiosyncratic risk (high and low) and corporate governance (strong and weak). We use the median values of idiosyncratic volatility and governance index within each industry year for the full sample of 18,037 firm-years. Among the firms with low idiosyncratic risk, 105 dividend initiation events are attributed to firms with strong governance, compared to 51 such events for weak governance firms. Even though the number of firms initiating dividends are not different across the two governance categories for firms with high idiosyncratic risk, the probability of omission or cut is substantially lower for strong governance firms that may be indicative of positive information about future firm performance, available to the management, despite the underinvestment problem among high risk firms. We also conduct Wilcoxon two-sample tests of number of initiations and probability of dividend omission/cut for the four categories of firms described in Figure 2.¹⁷ The pairwise comparisons of the before mentioned statistics support our earlier conjectures in that, when segregated among four groups of stronger (weaker) governance and high (low) risk, we find that approximately 47% of the 223 dividend initiation events are attributed to firms with stronger governance and lower risk. These firms are also 28% less likely to cut or omit dividends in the next five years compared to their counterparts with weaker governance and higher risk. It is interesting to note, that the probability of dividend omission or cut seem to matter statistically when compared across different categories of firms by risk while keeping the governance invariant.

[Insert Figure 2]

6. Conclusion

A familiar and well explored question in the dividend payout literature is whether investors prefer dividend paying firms and should firms cater to such preference. The market

¹⁷ Results not tabulated.

participants are as divided on this question as academics. Don Kilbride, who has managed the \$24.6 billion Vanguard Dividend Growth Fund since 2006, believes that “dividend growth is the most important arrow in a stock investor’s quiver”.¹⁸ In contrast, Warren Buffett prefers to use Berkshire Hathaway’s huge cash pile to buy companies rather than pay dividends to investors.¹⁹

The other interesting question, which is the focus of this study is if the goal of good corporate governance is to monitor managers while they make critical decisions that impact firm value, should it encourage or discourage dividend payouts. Since the work by La Porta et al. (2000), an extensive literature has developed studying the relation between governance quality and dividend policy through the ambit of agency conflicts and is divided on whether governance complements or substitutes for dividend policy in disciplining managers. While some studies find that firms with stronger governance make larger dividend payments in order to reduce agency conflicts, supporting corporate governance as a complement to dividend policy theory, others report just the opposite, supporting corporate governance as a substitute for dividend policy.

In this paper, we reconcile these two opposing strands of literature by investigating how corporate governance influences dividend payout policy under different level of idiosyncratic risk. While better corporate governance encourages dividend payout to reduce free cash flow, when idiosyncratic risk, a proxy for the cost of underinvestment is low, it discourages payout to preserve funding for value-increasing investment, when idiosyncratic risk and as a result

¹⁸Jen Wieczner of Fortune Magazine reports that since the beginning of 1999, the S&P 500 Dividend Aristocrats index which is made up of companies that have increased their dividends for at least 25 consecutive years has returned 314%, more than double the broader market. Please refer to <http://fortune.com/2015/04/27/dividend-stocks-shelter-in-bear-market/>.

¹⁹ David Gelles of New York Times reports that the Berkshire board regularly considers returning to capital programs but decides against it. Please refer to <http://dealbook.nytimes.com/2014/03/14/berkshire-hathaway-board-recommends-shareholders-vote-against-dividend/>.

the cost of underinvestment rises. Thus, we argue that the relation between corporate governance and dividend payout propensity is positive when the idiosyncratic risk is low, and becomes less positive or even negative as the idiosyncratic risk increases. We report that the interplay of governance and idiosyncratic risk is indeed a significant determinant of propensity to pay dividends as well as repurchase and total payout. We also find that firms with stronger corporate governance are less inclined to initiate dividends when their residual volatility is high compared to firms with weaker governance. In addition, we find that firms with stronger governance and lower idiosyncratic risk are significantly less likely to cut or omit dividends in the next five years after initiation, compared to their counterparts with weaker governance and higher idiosyncratic risk. All of the above findings support the earlier prediction of the asymmetric role of corporate governance in payout decisions which helps in reconciling the complement and substitute debate.

Finally, in unreported analyses, we investigate whether our results on dividend paying propensity can be extended to the level of dividend payment. We run Tobit regressions on the DV/A (Dividend amount/Book value of asset) for all firms and OLS regressions for dividend payers. We obtain results consistent with our main findings when we use alternative measures of governance, board independence, pay-for-performance, takeover defenses, and blockholders. These results suggest that governance and idiosyncratic risk jointly determine not only the propensity of the dividend payment but also the level of the dividend payment.²⁰

²⁰ The reason that we cannot find results in the ICGQ sample can be attributed to the impact of the recent financial crisis in which some firms, even with good governance and low idiosyncratic risk might have reduced the level of dividend payment or even stopped payment due to the severe credit shock. Bliss, Cheng, and Denis (2015) document that 9.12% and 14.98% of firms reduced dividend payment in 2008 and 2009, while 10.47% of firms eliminated dividend payment in 2009. (these numbers are around 3% before the crisis). The relatively short time span of the ICGQ sample (2003-2009) compared to that of the samples for which the alternative governance proxies are available makes it more likely that the results were affected by om the shock.

Appendix: Variable definitions

Variable	Definitions
<i>Panel A: ISS Governance Indices, Risk Measures, and Dividend Decision Variables</i>	
ICGQ	The industry ranking based on the Institutional Shareholder Services (ISS)'s Corporate Governance Quotient (CGQ) rating, which is a firm's percentile within its GICS industry group. The definition of the 24 GICS industry group can be found from the following website: http://www.msci.com/products/indexes/sector/gics/
Idiosyncratic Risk	The standard deviation of residuals from a regression of its daily excess stock returns on the market risk premium. Following Hoberg and Prabhala (2009), we use the firm-specific daily stock return from one calendar year to compute idiosyncratic risk for each firm-year observation.
Systematic Risk	The standard deviation of the predicted value from the above regression which defined idiosyncratic risk.
Payer Indicator	Dummy: 1 if the firm has positive dividend per share by the ex-date (Compustat item #26) in the fiscal year that ends in calendar year t.
Initiator Indicator	Dummy: 1 if the firm was not a payer for the last five calendar years and have a regular cash dividend announcement (CRSP DISTCD 1220-1259) in current calendar year where the event date can be identified from CRSP DCLRDT)
Omission&cut	Omission&cut equals to 1 if the firm omit the payment or cut the regular cash dividend payment within five years after the initiation and 0 otherwise.
Repurchase Indicator	Dummy: 1 if the firm has positive \$ amount of share repurchase which is defined as purchase of common and preferred stock (Compustat item#115) minus the reduction in the value of preferred stock outstanding (Compustat item #56) following Grullon and Michaely (2002).
Large Repurchase Indicator	Dummy: 1 if the firm has \$ amount of share repurchase greater than 1% of its book assets.
Total Payout Indicator	Dummy: 1 if the firm has positive total payout which is defined as the dividend payment plus the \$ amount of share repurchase.
<i>Panel B: Control Variables and other variables</i>	
Market-to-book	Market-to-book ratio of asset. Book value of assets (Compustat item #6) minus the book value of equity plus the market value of equity (fiscal year closing price times shares outstanding) all scaled by book value of assets. The book value of assets is defined as Stockholder's Equity minus Preferred Stock plus Deferred Taxes and Investment Tax Credit (Compustat item #35) minus Postretirement Benefit Asset (Compustat item #330) The Stockholder's Equity is Compustat item #216. If the data item is not available, it is replaced by either Common/Ordinary

Appendix: Variable definitions

Variable	Definitions
	Equity (Compustat item #60) plus Preferred Stock Par Value (Compustat item #130) or Book value of assets minus Total Liabilities (Compustat item #181) The Preferred Stock is Preferred Stock Liquidating Value (Compustat item #10), or Preferred Stock Redemption Value (Compustat item #56), or Preferred Stock Par Value (Compustat item #130). The definitions are from Hoberg and Prabhala (2009).
Asset Growth	The year t-1 to year t growth of book value of assets scaled by the book value of asset at year t-1
Profitability	Earnings before extraordinary items (Compustat item #18) plus Interest expense (Compustat item #15) plus Deferred income taxes (Compustat item #50) all scaled by book value of assets.
NYSE Percentile Book value of assets	NYSE Percentile is the NYSE market capitalization percentile, i.e., the fraction of NYSE firms having market capitalization equal or smaller than firm i in year t.
RE/TE	The ratio of earned equity to total common equity from DeAngelo, DeAngelo, and Stulz (2006). Retained Earnings (Compustat item #36) divided by the The Stockholder's Equity defined above. RE/TE is winsorized at the 5 th and 95 th percentile.
TE/TA	The Stockholder's Equity divided by book value of total asset.
High FCF	High FCF is a dummy variable that equals 1 if the firm's FCF proxy is higher than the sample median for that year, or 0 otherwise.
FCF proxy 1	FCF proxy 1 is defined as: Operating Income (Compustat item #13) minus the total income taxes (Compustat item #16) plus change in deferred taxes (Compustat item #35) from the previous year to the current year minus total interest expenses (Compustat item #15) all scaled by book value of assets. This free cash flow measure follows Lehn and Poulsen (1989) that ignores dividends.
FCF proxy 2	FCF proxy 2 is defined as (Maximum internally financed growth) – (GICS industry group median asset growth), where maximum internally financed growth = $ROA/(1-ROA)$, ROA is income before extraordinary item (Compustat item #18) scaled by lagged book value of asset (Compustat item #6). This is the free cash flow problem measure employed by Leuz, Triantis, and Wang (2008)
Financial Constraint	Financial Constraint is a dummy variable that equals 1 if the KZ-index of a firm is in the top tercile for that year following Lamont, Polk, and Saa-Requejo. (2001), or 0 otherwise.
KZ-index	KZ-index is Kaplan and Zingales (1997)'s financial constraint index. We construct the KZ-index for each firm-year as $KZ = -1.002(CF/TA) - 39.368(DIV/TA) - 1.315(CA/TA) + 3.139LEV + 0.283$

Appendix: Variable definitions

Variable	Definitions
	where CF/TA is the Earnings before extraordinary items plus Depreciation and Amortization (Compustat item #14) scaled by lagged book value of assets (Compustat item #6), DIV/TA is total dividend payments (Compustat item #19 and #21) scaled by lagged book value of assets, CA/TA is cash (Compustat item #1) scaled by lagged book value of assets, LEV , leverage, is total debt (Compustat item #34 and item #9) divided by the sum of total debt and total stock holder equity (Compustat item #216), Q is the market-to-book ratio. The components of KZ-index are winsorized at the 1 st and 99 th percentile before construction.
Board Independence	The percentage of the number of independent director to the total number of the director on the board. The board of director data is obtained from RiskMetrics Director and Governance
Delta	Pay-performance sensitivity: Dollar change in wealth associated with a 1% change in the firm's stock price (in \$000s). It is calculated based on Coles, Daniel, Naveen (2013) algorithm using data from Execucomp.
Big 4 Auditor	A dummy equals to 1 if the firm use the following auditors: EY, PwC, Deloitte Touche Tohmatsu, and KPMG.
Blockholder	The percentage of shares held in each firm by the firm's largest institutional blockholders. (Cremer and Nair (2005))

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Table 1
Summary Statistics

This table shows the firm characteristics by dividend nonpayers and payers for subsamples of firms differentiated by their idiosyncratic risk. The sample consists of 18,037 firm-years from 2003 - 2009 where data available from RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. The low (high) idiosyncratic risk subsample consists of observations with idiosyncratic risk lower (higher) than the sample median in each year. A firm-year observation is identified as dividend payer if amount of dividend paid is positive by the firm for that fiscal year. The difference tests are t-tests for equality of means and Wilcoxon-test for equality of medians. Median values are in brackets. Variables are defined in the appendix. ***, **, * denote statistical significance between nonpayers and payers at the 1%, 5%, and 10% level, respectively.

	Low Idiosyncratic Risk			High Idiosyncratic Risk				
	NonPayer	Payer	Diff	NonPayer	Payer	Diff		
N	4,745	4,273		7,994	1,025			
ICGQ	62.09	69.16	-7.07	***	48.64	51.82	-3.18	***
	[66.80]	[76.30]	[-9.50]	***	[48.00]	[51.50]	[-3.50]	***
Idiosyncratic Risk	0.02	0.02	0.00	***	0.05	0.04	0.01	***
	[0.02]	[0.02]	[0.00]	***	[0.04]	[0.03]	[0.01]	***
Systematic Risk	0.01	0.01	0.00	*	0.01	0.01	0.00	***
	[0.01]	[0.01]	[0.00]	***	[0.01]	[0.01]	[0.00]	***
Market-to-book	1.96	1.84	0.12	***	2.12	1.62	0.50	***
	[1.57]	[1.55]	[0.02]	*	[1.55]	[1.28]	[0.26]	***
Asset Growth	0.15	0.08	0.06	***	0.15	0.07	0.08	***
	[0.08]	[0.05]	[0.03]	***	[0.03]	[0.02]	[0.01]	***
Profitability	0.05	0.08	-0.03	***	-0.10	0.04	-0.14	***
	[0.06]	[0.08]	[-0.02]	***	[-0.01]	[0.06]	[-0.07]	***
NYSE Percentile	0.37	0.52	-0.15	***	0.11	0.16	-0.05	***
	[0.32]	[0.53]	[-0.21]	***	[0.05]	[0.09]	[-0.04]	***
BV Asset	2408.21	9301.98	-6893.77	***	514.55	1077.06	-562.51	***
	[766.72]	[1972.96]	[-1206.24]	***	[120.57]	[286.10]	[-165.53]	***
RE/TE	-0.04	0.63	-0.67	***	-1.90	0.30	-2.19	***
	[0.31]	[0.73]	[-0.42]	***	[-0.58]	[0.54]	[-1.13]	***
TE/TA	0.58	0.54	0.04	***	0.57	0.56	0.01	***
	[0.59]	[0.54]	[0.05]	***	[0.60]	[0.57]	[0.03]	**

Table 2
Correlation Matrix

This table shows pairwise correlations between select variables. The upper triangle of this matrix reports the Pearson correlation coefficients and the lower triangle reports the Spearman rank correlation coefficients. P-values are reported below each coefficient. Variables are defined in the appendix

	ICGQ	Idio. Risk	Sys. Risk	M/B	Growth	Profitability	NYSE %	BV Asset	RE/TE	TE/TA
ICGQ	1	-0.254 (<.001)	0.141 (<.001)	0.001 (0.917)	-0.043 (<.001)	0.128 (<.001)	0.473 (<.001)	0.223 (<.001)	0.140 (<.001)	-0.115 (<.001)
Idiosyncratic Risk	-0.339 (<.001)	0	0.198 (<.001)	-0.017 (0.024)	-0.044 (<.001)	-0.412 (<.001)	-0.434 (<.001)	-0.161 (<.001)	-0.438 (<.001)	-0.066 (<.001)
Systematic Risk	0.179 (<.001)	0.159 (<.001)	1	-0.077 (<.001)	-0.051 (<.001)	-0.030 (<.001)	0.180 (<.001)	0.025 (<.001)	0.010 (0.160)	-0.085 (<.001)
Market-to-book	0.064 (<.001)	-0.143 (<.001)	-0.008 (0.301)	1	0.191 (<.001)	-0.129 (<.001)	0.120 (<.001)	-0.039 (<.001)	-0.248 (<.001)	0.162 (<.001)
Asset Growth	0.003 (0.661)	-0.199 (<.001)	-0.039 (<.001)	0.326 (<.001)	1	0.169 (<.001)	0.056 (<.001)	0.000 (0.966)	0.063 (<.001)	0.050 (<.001)
Profitability	0.161 (<.001)	-0.455 (<.001)	-0.008 (0.256)	0.258 (<.001)	0.401 (<.001)	1	0.309 (<.001)	0.092 (<.001)	0.618 (<.001)	0.036 (<.001)
NYSE Percentile	0.484 (<.001)	-0.619 (<.001)	0.392 (<.001)	0.267 (<.001)	0.219 (<.001)	0.409 (<.001)	1	0.453 (<.001)	0.312 (<.001)	-0.124 (<.001)
BV Asset	0.473 (<.001)	-0.615 (<.001)	0.358 (<.001)	-0.081 (<.001)	0.116 (<.001)	0.333 (<.001)	0.894 (<.001)	1	0.102 (<.001)	-0.088 (<.001)
RE/TE	0.202 (<.001)	-0.544 (<.001)	0.014 (0.058)	-0.066 (<.001)	0.148 (<.001)	0.542 (<.001)	0.397 (<.001)	0.430 (<.001)	1	0.195 (<.001)
TE/TA	-0.135 (<.001)	0.018 (0.014)	-0.036 (<.001)	0.179 (<.001)	0.075 (<.001)	0.053 (<.001)	-0.109 (<.001)	-0.300 (<.001)	0.058 (<.001)	1.000

Table 3**Governance-Risk Relation and Propensity to Pay Dividends**

This table reports Fama and MacBeth (1973) style estimates of a logit model with Newey-West (two lags) adjusted standard deviation. One cross-sectional model is estimated per year. The dependent variable Payer Indicator is equal to one for dividend-paying firms and zero otherwise. The sample consists of 18,037 firm-years from 2003 – 2009 for which data are available in RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. P-values are reported in parentheses below each coefficient. The R-square reported is the average R-square from the cross-sectional regressions. Variables are defined in the appendix. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	Payer Indicator		
	(1)	(2)	(3)
ICGQ	0.002 *** (0.030)	-0.001 * (0.066)	0.010 * (0.054)
Idiosyncratic Risk		-54.836 *** (0.001)	-32.213 *** (0.002)
ICGQ*Idiosyncratic Risk			-0.486 ** (0.033)
Systematic Risk		0.550 (0.974)	5.741 (0.717)
Market-to-book	-0.409 *** (<.001)	-0.193 *** (<.001)	-0.191 *** (<.001)
Asset Growth	-1.506 *** (<.001)	-1.354 *** (0.003)	-1.345 *** (0.003)
Profitability	7.665 *** (<.001)	2.995 *** (0.001)	2.976 *** (0.001)
NYSE Percentile	2.551 *** (<.001)	1.075 *** (<.001)	0.944 *** (<.001)
RE/TE		1.309 *** (<.001)	1.299 *** (<.001)
TE/TA		-0.994 *** (0.010)	-0.963 ** (0.014)
# observations	18,037	18,037	18,037
R ²	0.218	0.320	0.322

Table 4

Economic Impact of Governance on Propensity to Pay Dividends under Different Levels of Risk

Panel A of this table reports Fama and MacBeth (1973) style estimates of a logit model with Newey-West (two lags) adjusted standard deviation. One cross-sectional model is estimated per year. The dependent variable Payer Indicator is equal to one for dividend-paying firms and zero otherwise. The independent variables are measured in quintiles. The sample consists of 18,037 firm-years from 2003 – 2009 for which data are available in RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. P-values are reported in parentheses below each coefficient. The R-square reported is the average R-square from the cross-sectional regressions. Variables are defined in the appendix. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively. The first two rows of Panel B report the predicted probability of dividend payout using model as specified in Panel A, ICGQ at the highest quintile and at the lowest quintile across idiosyncratic risk quintiles, while fixing the controls variables at their medians. The third row of Panel B reports the proportion change in the predicted probability between the ICGQ at the highest quintile and at the lowest quintile.

Panel A: Propensity to pay dividend regression where all independent variables are measured in quintiles											
Variables	ICGQ	Idiosyncratic Risk	ICGQ* Idiosyncratic Risk	Systematic Risk	Market-to-book	Asset Growth	Profitability	NYSE Percentile	RE/TE	TE/TA	# obs/R ²
	0.063*** (0.005)	-0.195*** (<.001)	-0.014*** (0.004)	0.032 (0.286)	-0.097*** (<.001)	-0.138*** (0.002)	0.130*** (<.001)	0.053** (0.012)	0.397*** (<.001)	-0.068** (0.022)	18,037 0.336
Panel B: Predicted probability where control variables are at their median											
Idiosyncratic Risk at	1st (lowest) quintile		2nd quintile		3rd quintile		4th quintile		5th (highest) quintile		
Predicted Probability ICGQ at highest quintile	42.01%		28.08%		17.39%		10.19%		5.77%		
Predicted Probability ICGQ at lowest quintile	32.81%		24.38%		17.55%		12.33%		8.50%		
% Change in probability (highest - lowest)/lowest	28.04%		15.19%		-0.92%		-17.30%		-32.12%		

Table 5
Governance-Risk Relation and Propensity to Pay Dividends – Robustness Analysis

This table reports Fama and MacBeth (1973) style estimates of a logit model with Newey-West (two lags) adjusted standard deviation. One cross-sectional model is estimated per year. The dependent variable Payer Indicator is equal to one for dividend-paying firms and zero otherwise. The sample consists of 18,037 firm-years from 2003 - 2009 for which data are available in RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. Column 1 reports the results using alternative proxy of idiosyncratic risk estimated as each firm's residual volatility after accounting for market and industry volatility, in the spirit of Campbell, Lettau, Malkiel and Xu (2001). Column 2 reports the result with the subsample consists of S&P 1500 firms. Column 3 reports the results with the subsample excluding year 2007-2009. Column 4 reports the result the results with the subsample excluding year 2003. Column 5 reports the results with Governance and Risk proxies are measured at the year prior to the dividend distribution. Column 6 reports the results with all independent variables are measured at the year prior to the dividend distribution. P-values are reported in parentheses below each coefficient. The R-square reported is the average R-square from the cross-sectional regressions. Variables are defined in the appendix. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	Payer Indicator					
	(1)	(2)	(3)	(4)	(5)	(6)
	Alternative Risk Proxies	S&P1500 Subsample	Excluding 2007-2009	Excluding 2003	Governance and Risk at t-1	All independent variables at t-1
ICGQ	0.010 ** (0.029)	0.005 * (0.068)	0.014 ** (0.025)	0.011 * (0.068)	0.014 * (0.008)	0.013 *** (0.009)
Idiosyncratic Risk	-30.833 *** (0.004)	-69.068 *** ($<.001$)	-36.153 ** (0.030)	-25.469 *** ($<.001$)	-41.769 *** (0.016)	-39.042 ** (0.028)
ICGQ*Idiosyncratic Risk	-0.485 ** (0.024)	-0.349 ** (0.036)	-0.688 ** (0.017)	-0.562 ** (0.048)	-0.706 ** (0.007)	-0.664 *** (0.006)
Systematic Risk	-6.773 (0.679)	48.745 * (0.058)	-10.189 (0.538)	13.923 (0.273)	0.040 (0.998)	1.158 (0.948)
Market-to-book	-0.178 *** ($<.001$)	-0.260 *** (0.001)	-0.229 *** ($<.001$)	-0.185 *** (0.001)	-0.182 *** (0.001)	-0.269 *** ($<.001$)
Asset Growth	-1.345 *** (0.003)	-1.143 *** (0.002)	-0.963 *** (0.002)	-1.347 ** (0.010)	-1.324 ** (0.002)	-0.948 *** (0.001)
Profitability	2.820 *** (0.001)	1.548 *** (0.002)	3.628 *** (0.010)	3.203 *** (0.002)	3.287 *** (0.001)	4.520 *** (0.003)
NYSE Percentile	0.861 *** (0.001)	1.305 *** ($<.001$)	0.941 *** (0.008)	0.855 *** ($<.001$)	0.717 *** (0.004)	0.960 *** (0.001)
RE/TE	1.304 *** ($<.001$)	1.396 *** ($<.001$)	1.470 *** ($<.001$)	1.264 *** (0.001)	1.159 *** ($<.001$)	1.181 *** ($<.001$)
TE/TA	-0.993 ** (0.015)	-1.431 *** (0.001)	-0.572 ** (0.040)	-1.042 ** (0.013)	-0.842 ** (0.004)	-0.599 *** (0.006)
# observations	18,035	6,788	11,333	15,107	14,564	14,564
R ²	0.321	0.276	0.340	0.319	0.339	0.347

Table 6

Corporate Governance, Risk, and Propensity to Pay Dividends - Alternative Governance Proxies

This table reports Fama and MacBeth (1973) style estimates of a logit model with Newey-West (two lags) adjusted standard deviation One cross-sectional model is estimated per year. The dependent variable Payer Indicator is equal to one for dividend-paying firms and zero otherwise. Column 1 reports the results using a sample of 15,474 firm-years from 1996 - 2010 for which data are available in RiskMetrics Director, CRSP, and Standard and Poor's COMPUSTAT. Column 2 reports the result using the sample of 17,684 firm-years from 1992 - 2010 for which data is available in Execucomp, CRSP, and Standard and Poor's COMPUSTAT. Column 3 reports the result using the sample consists of 36,961 firm-years from 1999 - 2010 where data available from CRSP, and Standard and Poor's COMPUSTAT with auditor code available. Column 4 reports the result using the sample consists of 80,830 firm-years from 1986 - 2010 where data available from Thomson-Reuters Institutional Ownership, CRSP, and Standard and Poor's COMPUSTAT. P-values are reported in parentheses below each coefficient. The R-square reported is the average R-square from the cross-sectional regressions. Variables are defined in the appendix. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	Payer Indicator			
	(1)	(2)	(3)	(4)
Board Independence	0.022 *** (<.001)			
Board Independence*Idiosyncratic Risk	-0.703 *** (0.009)			
Delta		0.418 * (0.068)		
Delta*Idiosyncratic Risk		-21.322 ** (0.026)		
Big 4 Auditor			0.480 * (0.095)	
Big 4 Auditor*Idiosyncratic Risk			-21.533 ** (0.034)	
Blockholder				0.772 (0.583)
Blockholder*Idiosyncratic Risk				-94.064 ** (0.018)
Idiosyncratic Risk	-52.496 *** (0.001)	-93.512 *** (<.001)	-49.294 *** (<.001)	-50.665 *** (<.001)
Systematic Risk	-25.984 (0.493)	-55.684 (0.179)	-15.154 (0.438)	-79.243 *** (0.002)
Market-to-book	-0.188 *** (0.001)	-0.176 *** (<.001)	-0.226 *** (<.001)	-0.259 *** (<.001)
Asset Growth	-0.791 *** (<.001)	-0.868 *** (<.001)	-1.123 *** (<.001)	-1.097 *** (<.001)
Profitability	0.848 (0.149)	0.619 (0.440)	2.443 ** (0.010)	2.040 *** (<.001)
NYSE Percentile	1.261 *** (<.001)	1.851 *** (<.001)	1.400 *** (0.001)	2.606 *** (<.001)
RE/TE	1.089 *** (<.001)	1.327 *** (<.001)	1.123 *** (<.001)	1.385 *** (<.001)
TE/TA	-1.166 *** (<.001)	-1.311 *** (<.001)	-0.845 *** (<.001)	-0.404 ** (0.037)
# of observations	15,474	17,684	36,961	80,830
R ²	0.316	0.360	0.323	0.374

Table 7
Corporate Governance, Risk and Propensity to Pay Dividends With Explicit Control for Agency Cost

This table reports Fama and MacBeth (1973) style estimates of a logit model with Newey-West (two lags) adjusted standard deviation. One cross-sectional model is estimated per year. The dependent variable Payer Indicator is equal to one for dividend-paying firms and zero otherwise. High FCF is a dummy variable equals to 1 if FCF proxy is higher than median of the year. Financial Constraint is a dummy variable equals to 1 if the KZ-index is in the top tercile of the year. In column (1) and (2), the proxy of free cash flow (FCF) per the definition in Lehn and Poulsen (1989) without considering the dividends. The sample consists of 17,275 firm-years from 2003-2009 for which data are available in RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. In column (3) and (4), the proxy of free cash flow (FCF) is per the definition in Leuz et al. (2008). The sample consists of 18,037 firm-years from 2003-2009 for which data are available in RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. P-values are reported in parentheses below each coefficient. The R-square reported is the average R-square from the cross-sectional regressions. Variables are defined in the appendix. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variables	Payer			
	FCF proxy 1		FCF proxy 2	
Free Cash Flow measure	(1)	(2)	(3)	(4)
ICGQ	0.007 (0.203)	0.008 (0.154)	0.006 (0.259)	0.007 * (0.095)
ICGQ*Idiosyncratic Risk	-0.439 * (0.079)	-0.411 (0.103)	-0.402 * (0.073)	-0.322 (0.109)
ICGQ*Idiosyncratic Risk*High FCF		-0.089 ** (0.018)		-0.240 *** (0.002)
High FCF	0.204 *** (<.001)	0.345 *** (0.001)	0.118 * (0.051)	0.472 *** (0.001)
Financial Constraint (FC)	-1.482 *** (<.001)	-1.483 *** (<.001)	-1.426 *** (<.001)	-1.427 *** (<.001)
Idiosyncratic Risk	-35.919 *** (0.001)	-35.224 *** (0.001)	-38.328 *** (0.001)	-36.059 *** (0.001)
Systematic Risk	5.870 (0.738)	6.078 (0.731)	5.610 (0.748)	6.369 (0.717)
Market-to-book	-0.222 *** (<.001)	-0.223 *** (<.001)	-0.203 *** (<.001)	-0.204 *** (<.001)
Asset Growth	-1.483 *** (0.005)	-1.476 *** (0.005)	-1.410 *** (0.004)	-1.402 *** (0.005)
Profitability	2.548 *** (<.001)	2.564 *** (<.001)	2.588 *** (0.001)	2.669 *** (<.001)
NYSE Percentile	0.992 *** (<.001)	0.976 *** (<.001)	0.986 *** (<.001)	0.947 *** (<.001)
RE/TE	1.171 *** (<.001)	1.170 *** (<.001)	1.194 *** (<.001)	1.190 *** (<.001)
TE/TA	-3.075 *** (<.001)	-3.068 *** (<.001)	-3.027 *** (<.001)	-3.029 *** (<.001)
# of observations	17,275	17,275	18,037	18,037
R ²	0.347	0.347	0.347	0.348

Table 8

Corporate Governance, Risk, and Propensity to Repurchase or Total Payout

This table reports Fama and MacBeth (1973) style estimates of a logit model with Newey-West (two lags) adjusted standard deviation. One cross-sectional model is estimated per year. The dependent variable is equal to one for share repurchasing firms, large share repurchasing firms and dividend-paying and/or share repurchasing firm in models (1), (2), and (3) respectively and zero otherwise. The full sample used in models (1), (2), and (3) consists of 18,037 firm-years from 2003 - 2009, while the sub sample of non-dividend payers consists of for 12,739 firm-years from 2003-2009 for which data are available in RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. P-values are reported in parentheses below each coefficient. The R-square reported is the average R-square from the cross-sectional regressions. Variables are defined in the appendix. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	Full Sample			Non-dividend Payers	
	(1)	(2)	(3)	(4)	(5)
	Repurchase Indicator	Large Repurchase Indicator	Total Payout Indicator	Repurchase Indicator	Large Repurchase Indicator
ICGQ	0.010 *** (0.003)	0.017 *** (<.001)	0.015 *** (0.002)	0.011 *** (0.001)	0.017 *** (<.001)
Idiosyncratic Risk	-19.589 *** (0.003)	-19.809 *** (<.001)	-23.001 *** (<.001)	-19.398 *** (0.009)	-26.127 *** (<.001)
ICGQ*Idiosyncratic Risk	-0.253 ** (0.036)	-0.409 *** (0.007)	-0.438 ** (0.017)	-0.255 ** (0.026)	-0.424 *** (0.004)
Systematic Risk	-13.721 ** (0.030)	-11.633 * (0.084)	-13.237 (0.181)	-11.576 ** (0.019)	-10.081 (0.145)
Market-to-book	0.011 (0.486)	0.162 *** (<.001)	-0.038 ** (0.019)	-0.034 * (0.085)	0.077 *** (<.001)
Asset Growth	-0.877 *** (<.001)	-1.748 *** (<.001)	-0.994 *** (<.001)	-0.677 *** (<.001)	-1.266 *** (<.001)
Profitability	1.399 *** (0.009)	2.836 *** (0.002)	1.527 *** (0.008)	1.170 ** (0.029)	2.292 *** (0.004)
NYSE Percentile	1.147 *** (<.001)	1.042 *** (<.001)	1.086 *** (<.001)	0.985 *** (<.001)	0.866 *** (<.001)
RE/TE	0.129 *** (<.001)	0.128 *** (<.001)	0.231 *** (<.001)	0.094 *** (0.003)	0.090 *** (0.002)
TE/TA	0.632 *** (0.003)	0.928 *** (0.001)	0.235 (0.310)	0.748 *** (0.002)	1.041 *** (<.001)
# observations	18,037	18,037	18,037	12,739	12,739
R ²	0.181	0.202	0.257	0.136	0.151

Table 9**Governance-Risk Relation and Propensity to Initiate Dividend**

This table reports the logit regression results on whether or not a firm initiates dividend. The dependent variable Initiator is equal to one for dividend-initiating firms and zero otherwise. The sample consists of 6,704 firm-years where the firm is not a payer in the last five calendar years and has positive earnings. We require the data being available from RiskMetrics/ISS Governance Rating, CRSP, Standard and Poor's COMPUSTAT and Thomson-Reuters Institutional Ownership. Column (1), (2), and (3) reports the results with year fixed effect, with industry-year fixed effect and with firm-fixed effect correspondingly. P-values are reported in parentheses below each coefficient. Variables are defined in the appendix. ***, **, * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent Variable	(1)	(2)	(3)
ICGQ	0.008 (0.258)	0.012 (0.130)	0.031 * (0.063)
Idiosyncratic Risk	-20.256 (0.172)	-13.398 (0.363)	1.646 (0.963)
ICGQ*Idiosyncratic Risk	-0.577 ** (0.037)	-0.595 ** (0.032)	-1.408 ** (0.027)
Systematic Risk	0.428 (0.978)	-16.735 (0.339)	44.397 (0.155)
Market-to-book	-0.257 *** (0.002)	-0.176 ** (0.037)	-0.179 (0.486)
Asset Growth	-0.527 * (0.067)	-0.300 (0.276)	0.077 (0.849)
Profitability	6.255 *** (<.001)	5.397 *** (0.001)	-1.609 (0.702)
NYSE Percentile	1.161 *** (0.002)	1.414 *** (<.001)	-0.906 (0.699)
RE/TE	0.258 ** (0.021)	0.233 ** (0.039)	5.567 *** (<.001)
TE/TA	0.162 (0.671)	0.856 ** (0.036)	0.290 (0.904)
Fixed Effects	Year	Ind&Year	Firm
N	6,704	6,704	6,704
R ²	0.088	0.095	0.179

Figure 1

Idiosyncratic Risk of Firms Leading up to the Initiation Event

This chart depicts the dividend initiating firms' mean (the solid line) and median (the dash line) idiosyncratic risk five years prior to the dividend initiation. The sample consist of 214 dividend initiation events from 2003 to 2009 of firms for which return data (used in measuring idiosyncratic risk) is available for all five years prior to the event and for which data is also available from RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. Year t is the year of initiation, year t-1 is the year immediately prior, and so on.

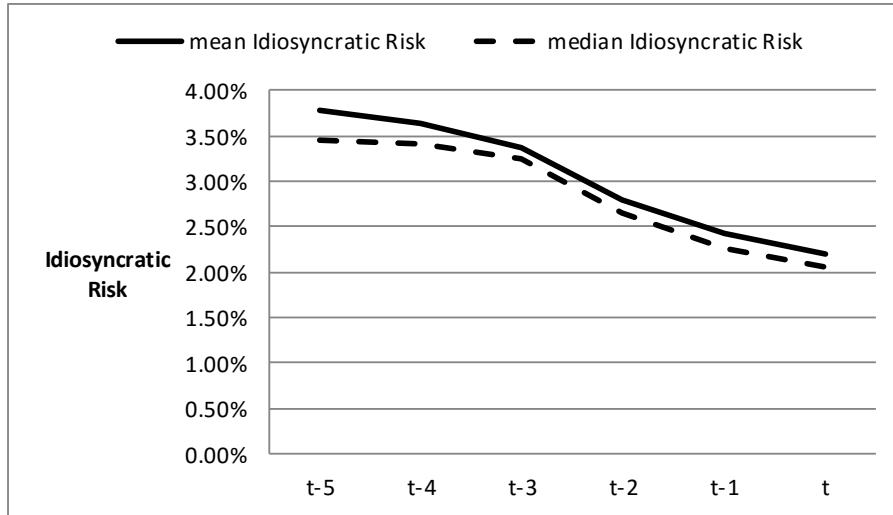


Figure 2

Dividend Initiation Event and Its Aftermath

This bar chart depicts the numbers of dividend initiation and probabilities of omitting or cutting dividend within five years after the initiation separately for subsamples of firms categorised by differing levels idiosyncratic risk and governance index. There are 223 dividend initiation events from 2003 to 2009 for which data is available from RiskMetrics/ISS Governance Rating, CRSP, and Standard and Poor's COMPUSTAT. The four subsamples have above and below median values of idiosyncratic volatility and governance index within each industry year for the full sample of 18,047 firm-years.

