Managerial entrenchment and payout policy: A catering effect[*]

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Abstract

Agency theory suggests that entrenched managers are less likely to pay dividends. However, according to the catering theory, external pressures from investors can force managers to increase dividend payments. Hence, we test whether entrenched managers respond to investor demand for dividends and share repurchases. Using a large sample of 9,677 US firms over the period 1990-2016 (i.e. a total of 80,478 firm-year observations), we test and find evidence that managerial entrenchment negatively impacts dividend payments. Our findings suggest that catering effects weaken the negative impact of managerial entrenchment on payout policy and that in firms with entrenched managers an increase in the propensity to pay dividends is conspicuous only when there is external investor demand for dividends. Our results indicate that while insiders and institutional owners might not necessarily favour dividend payments, firms respond to catering incentives when dominated by insiders but not institutional owners. Overall, our findings are consistent with the view that dividend payments are a result of external pressures to reduce agency problems associated with firms run by entrenched managers.

Keywords: Catering theory, managerial entrenchment, dividends, share repurchases, payout policy.

JEL classification: G30, G34, G35

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1 Introduction

Agency theory suggests that although dividend payments reduce the principal-agent conflicts associated with the separation of ownership from control, entrenched managers are less likely to pay dividends (Jensen, 1986; Bebchuk et al. 2009). Thus, dividend payments reduce internal funds and compel managers to raise funds more frequently, and this increases monitoring by the external capital market (Easterbrook, 1984). Nevertheless, entrenched managers are likely to restrain the payment of dividends because entrenchment increases the pursuit of private benefits at the expense of shareholder interests (Bebchuk et al. 2009). Therefore, entrenched managers are incentivized to reduce dividend payments with the view to retaining cash for perquisite consumption (Crutchley and Hansen, 1989; Moh'd et al., 1995; Chang et al., 2016). On the contrary, the catering theory (Baker and Wurgler, 2004a,b) argues that managers pay dividends when investors place a higher premium on the stocks of dividend-paying firms. These catering incentives represent external pressures that force firms to pay dividends. Therefore, we test whether entrenched managers respond to catering incentives to pay dividends and repurchase shares.

A large body of research documents that payout policies are driven by catering incentives (Baker and Wurgler, 2004a; Li and Lie, 2006; Jiang et al., 2013; Kulchania, 2013). Dividend premium, which measures catering theory associated with payout policy, is related to the propensity to pay dividends (Fama and French, 2001; Baker and Wurgler, 2004a). The evidence also suggests that managers or firms respond to investor demand for dividend changes (Li and Lie, 2006). Using repurchase premium and difference premium (dividend premium minus repurchase premium), Jiang et al. (2013) and Kulchania (2013) find evidence of catering effects related to share repurchases and the substitution between dividends and share repurchases. Therefore, a pervasive manifestation of this view holds that investor demand for payout can force entrenched managers

to distribute free cash flow to shareholders rather than pursuing empire-building ambitions (Jensen, 1986). Thus, we posit that faced with external pressures to pay dividends, and given the implications for non-payments (John and Knyazeva, 2006; Li and Lie, 2006), catering incentives moderate any potential adverse effects of managerial entrenchment on payout decisions.

To the extent that managerial entrenchment exacerbates the agency problem of free cash flows and stifles corporate payout decisions, we hypothesise that catering effects moderate the relationship between managerial entrenchment and payout policy, by weakening the negative impact of managerial entrenchment on payout. We test this hypothesis using a large sample of US firms from 1990 to 2016. We rely on managerial entrenchment measures such as the entrenchment index (Eindex) by Bebchuk et al. (2009) and the alternative takeover index (ATindex) by Cremers and Nair (2005). We also test the impact of insider and institutional investor stock ownership on payout policy. Following Jiang et al. (2013) and Kulchania (2013), we use the difference premium (dividend premium minus repurchase premium) to test the substitution effect between dividends and share repurchases. Our analyses focus on both the decision and the level of payouts through dividends and share repurchases. We follow Kieschnick and Moussawi (2018) and use the control function approach by Wooldridge (2015) to deal with endogeneity concerns.

We summarise our results as follows: We find that managerial entrenchment is negatively related to payout policy. The external measure of managerial entrenchment stemming from corporate charter Eindex is associated with reductions in payout policy. The results also show that insiders on the board or a lack of board independence decreases the propensity to pay dividends and repurchase shares. Insider ownership or managerial ownership and institutional ownership both account for decreases in payout policy. To avoid any potential omitted bias in the regression estimations, we combine all the entrenchment proxies, and the results hold. More importantly, and

consistent with our prediction, the results show that managerial entrenchment is associated with increases in payout policy only when there is investor demand for dividends and share repurchases.

Our results suggest that insiders only pay dividends in response to external pressures. More significantly, we find that catering effects moderate the negative relationship between managerial entrenchment and payout policy. In other words, firms with entrenched managers pay dividends only when there is investor demand for dividend-paying firms. While this evidence holds for dividends, we do not find similar results for share repurchases. This evidence is not so surprising because firms use dividends to disburse permanent cash flows and temporary cash flows to finance share repurchases (Jagannathan et al., 2000). There is evidence of the catering theory (Fama and French, 2001; Baker and Wurgler, 2004a,b; Li and Lie, 2006), and the catering-driven substitution between dividends and share repurchases (Jiang et al., 2013; Kulchania, 2013).

The findings of insider ownership support the argument that insider ownership strengthens entrenchment tendencies and exacerbates agency problems (Jensen, 1986; Eckbo and Verma, 1994; Short et al., 2002). For example, Eckbo and Verma (1994) argue that owner-managers prefer retained earnings to payouts. In line with our central prediction, we find that catering effects attenuate the adverse impact of insider ownership on dividends. Furthermore, unlike insider ownership, we do not see any moderating effects of catering on the relationship between institutional ownership and payout policy. This result complements the argument by Kahn and Winton (1998), who conclude that institutional investors are unlikely to force firms to pay dividends if they view increased investments as an avenue to enhance the future value of their stakes in the firms rather than short-term cash flows from dividends.

Finally, we adopt the control function approach (Wooldridge, 2015; Kieschnick and Moussawi, 2018) to address potential endogeneity concerns associated with our managerial entrenchment variables. Given that the state of incorporation defines the provisions in the corporate charter, and hence the nature of a firm's governance structures, we estimate the control functions using state dummies as instruments. Our results remain robust after controlling for potential endogenous variables. We perform additional robustness checks, using alternative measures of managerial entrenchment and catering theory. Our initial results are robust to these alternative proxies. Thus, catering effects moderate the impact of managerial entrenchment on payout policy.

Our study makes several additional contributions to the literature. First, we document the mediating role of catering to the relationship between managerial entrenchment and payout policy. Unlike previous studies that examine the effects of managerial entrenchment on payout policy (La Porta et al., 2000; Hu and Kumar, 2004; John and Knyazeva, 2006; Adjaoud and Ben-Amar, 2010), this is the only study that establishes the effects of catering theory on the adverse impact of managerial entrenchment on payout policy. Second, we extend the catering-driven substitution between dividends and share repurchases by Jiang et al. (2013) and Kulchania (2013) and introduce the impact of managerial entrenchment on the substitution between dividends and share repurchases. Third, we examine the extent to which catering effects mediate the relationship between insider ownership and payout policy, as well as institutional ownership and payout policy. Our results underscore how external investor demands for dividends and repurchases can influence managerial decisions. From a policy perspective, the finding that managers (even entrenched managers) listen to the demands of shareholders implies that governments and other stakeholders interested in strengthening corporate governance regulations can focus on encouraging greater shareholder participation.

The rest of our paper is organised as follows. Section 2 reviews relevant literature and formulates hypotheses, and Section 3 describes the data used and defines the variables. Next, Section 4 discusses the estimation model, whereas Section 5 presents and discusses the results. Section 6 presents the robustness tests and Section 7 concludes.

2 Literature review and hypotheses

2.1 Theory: Managerial entrenchment and dividends

Agency theory suggests that even though dividends provide a mechanism to reduce principal-agent conflicts, entrenched managers are less likely to pay dividends (Crutchley and Hansen, 1989; Moh'd et al., 1995; Chang et al., 2016). Rozeff (1982) opines that dividend payments are a bonding cost incurred by firms seeking to maximise shareholder wealth. Within this view, dividend payments reduce agency costs in two ways. First, to the extent that monies spent by managers on their private benefits are a function of free cash flows (Jensen, 1986), dividend payouts will reduce agency problems by freeing resources out of the control of insiders and ultimately reduce insider expropriation. Second, dividend payments reduce agency problems by facilitating capital markets monitoring of firm performance and operations (Easterbrook, 1984). The reason is that dividend dissipates internal funds and increases the likelihood that managers will have to resort to capital markets. Consequently, managers subject themselves to external third-party audits (Moh'd et al., 1995), leading to investigations by several stakeholders such as security exchanges, banks, and other suppliers of capital (Farinha, 2003). In effect, managers are apt to increase transparency through the release of new information to attract the required funding. Nevertheless, entrenched managers have incentives to avoid market discipline and to retain cash for perquisite consumption

(Crutchley and Hansen, 1989; Moh'd et al.,1995). Therefore, if dividends dissipate internal funds, then entrenched managers are likely to restrain dividend payments.

However, under the agency theory framework, La Porta et al. (2000) provide two contrasting views (the substitute and outcome models) on dividend payments. The substitute model argues that "insiders interested in issuing equity in the future pay dividends to establish a reputation for decent treatment of minority shareholders" (La Porta et al. 2000, p.1). Within the substitute model, managers (including entrenched managers) voluntarily establish a good reputation for better shareholder treatment to raise external capital. It implies that corporate governance quality and dividend payments are substitutes (Adjaoud and Ben-Amar, 2010: La Porta et al. 2000). Accordingly, poorly governed firms (firms with entrenched managers) have greater agency conflicts (Adjaoud and Ben-Amar, 2010) and are more likely to use dividends as a potent tool to alleviate agency conflicts. Consequently, the substitute model expects a positive (negative) relationship between managerial entrenchment (governance quality as captured by a lack of or reduced managerial entrenchment) and dividend policy (La Porta et al., 2000; John and Knyazeva, 2006). In other words, it expects entrenched managers to pay higher dividends to compensate shareholders for their poor governance (John and Knyazeva, 2006), leading to a positive relationship between managerial entrenchment and dividend policy.

In contrast, the outcome model suggests that corporate insiders pay dividends when pressured by minority shareholders to disgorge cash (La Porta et al. 2000). Farinha, (2003) opines that managerial opportunism and disdain for shareholder concerns are higher in firms with entrenched managers. As suggested by Bebchuk et al. (2009), entrenchment can take a variety of forms including staggered boards, limits to amending bye-laws and charter, supermajority shareholder votes, golden parachutes, and poison pills. Others, including Stulz (1988) as well as Farinha

(2003), also suggest that substantial insider ownership can entrench managers. Entrenchment insulates managers from external disciplining mechanisms, such as takeovers, product market competition, or managerial labour markets (Shleifer and Vishny, 1997). Hence, Bebchuk et al. (2009) argue that entrenchment harms the consequences and incidence of control transactions and increases shareholder value destruction activities such as shirking, empire-building, and perquisite consumption by insiders. As a result, managerial entrenchment reduces the probability of a successful tender offer (Stulz, 1988) and firm value (Bebchuk et al., 2009; Faleye, 2007) and collusion with other non-shareholding stakeholders to circumvent stringent internal control mechanisms (Surroca and Tribó, 2008).

Therefore, if dividends payments are as a result of shareholder pressure as suggested by the outcome model, then managerial entrenchment should exhibit a negative relationship with dividend payments (Adjaoud and Ben-Amar, 2010). This is because entrenched managers offer weaker protection rights to their shareholders. As a result, shareholders of firms managed by entrenched managers are unable to pressure insiders to pay dividends. Accordingly, the outcome model predicts a negative (positive) relationship between dividend payments and poor (good) governance quality as represented by managerial entrenchment. Thus, better-governed firms (as may be captured by a reduced or a lack of managerial entrenchment) will pay dividends in the absence of positive net present value (NPV) projects. On the contrary, managers in poorly governed firms (as may be captured by the presence of managerial entrenchment) will seek to expropriate corporate resources in the absence of positive NPV projects by engaging in empire building via mergers and acquisitions (M&As), and so on.

2.2 Managerial entrenchment and dividend policy

From agency theory perspective, entrenched managers are less likely to pay dividends because of the incentives for perquisite consumption (Jensen, 1986). Nevertheless, La Porta et al. (2000) provide two conflicting views (outcome and substitution models) on dividend payments.

Consistent with the conflicting views espoused by La Porta et al. (2000), existing empirical research has produced mixed results. Generally, the direction of the reported relationship in these studies could be traced to the measure of managerial entrenchment. For instance, Jiraporn and Chintrakarn (2009) examine the effect of managerial entrenchment on dividend payments in the US. Using the staggered board as a proxy for managerial entrenchment, they report that managerial entrenchment impacts positively on dividend payments. Their evidence suggests that even among dividend-paying firms, those with staggered boards pay higher dividends. They interpret their results to imply that entrenched managers incur bonding costs (by paying higher dividends) to compensate shareholders for the poor internal corporate governance.

In a related study, Hu and Kumar (2004) report that several possible managerial entrenchment variables, such as long service, service length, and compensation ratio increase dividend payouts. Thus, this suggests that increases in executive entrenchment increase dividend payments. This study supports the substitution model of dividend payments (La Porta et al., 2000). It indicates that entrenched managers seek to alleviate agency costs by paying out dividends to free up excess cash which could otherwise be used to finance inefficient projects and managerial perquisites. Other studies, such as Farinha (2003), use managerial share ownership as a proxy for entrenchment to explore the effect of managerial entrenchment on dividend payments in the UK. Farinha (2003 reports a U-shaped relationship between managerial entrenchment and dividend payments. The

result is interpreted to mean that after a critical entrenchment level, the coefficient of managerial share ownership changes from positive to negative. Schooley and Barney Jr (1994) find a similar U-shaped relationship between managerial entrenchment (managerial ownership) on dividend payments in the US.

There is also evidence of the effect of several other features of corporate governance and firm attributes on dividend payout policies. For example, Sharma (2011) documents a positive (negative) relationship between the propensity to pay dividends and director tenure (director busyness and equity compensation). Balachandran et al. (2019) report that in the Australian imputation tax environment, insider ownership has a positive relationship on dividend policy, but foreign institutional ownership reduces the propensity to pay dividends. Additionally, Adhikari and Agrawal (2018) and Grennan (2019) find that firms' dividend and repurchase decisions are a function of the policies of their industry peers. Their evidence suggests that relative to shares repurchases, peer influence on dividend payments appears stable across industries and firms.

Another strand of the literature that uses a composite measure of managerial entrenchment has also produced evidence in support of the outcome model of dividend payments. For example, Adjaoud and Ben-Amar (2010) find that dividend payments by Canadian firms are an outcome of effective corporate governance and that firms with stronger corporate governance pay higher dividends. Similarly, the results of Jiraporn (2006) using US data indicate that managerial entrenchment is negatively associated with payout policy. Jiraporn (2006) attributes the finding to the free cash flow hypothesis (Jensen, 1986). Thus, entrenched managers reduce dividend payments to retain cash to finance managerial perquisites, empire-building, or for the financing of inefficient projects that may enhance personal prestige. Similarly, in the UK, Florackis and Ozkan (2009) assert that their composite measure of managerial entrenchment increases agency costs.

Others, including Pinkowitz et al. (2006) and Lee (2011), report that the rarity of dividend payments in firms with entrenched managers makes dividend payments in these firms more value relevant.

These studies emphasise that entrenched managers are less likely to pay dividends. As a result, in firms with entrenched managers, the firm value effects of dividend payments are higher because it signifies an intention to reduce free cash flows that would be deployed for private benefits. Further, Renneboog and Szilagyi (2020) posit that managerial entrenchment reduces dividend payments even in the presence of controlling shareholders. Thus, controlling shareholders and dividend payments are complements rather than substitutes in mitigating agency conflicts. Their findings are in line with Wang and Yang (2011), who argue that entrenched managers have no incentive to reduce agency problems because entrenchment provides them with an avenue to make discretionary decisions that increase their utility.

Furthermore, Misangyi and Acharya (2014) suggest that corporate governance mechanisms combine in complex ways so that there are simultaneous substitutability and complementarity. Hence, a composite entrenchment index may be a better proxy for managerial entrenchment relative to a single measure. Additionally, despite the theoretical tension espoused by La Porta et al. (2000) regarding their outcome and substitute models of dividend payments, classical agency theory suggests that entrenched managers are less likely to pay dividends. Further, Consequently, we lean towards the studies that used a composite index and argue in favour of agency theory and the outcome model's suggestion that entrenched managers will restrain dividend payments. We, therefore, hypothesise that:

Hypothesis 1: Managerial entrenchment reduces dividend payments.

2.3 Managerial entrenchment, catering, and payout policy

Baker and Wurgler's (2004a) catering theory of dividend suggests that managers are likely to cater to investors' demand by paying dividends when investors place a high stock price on dividend payers and not pay when investors prefer non-payers. Their empirical evidence indicates that aggregate dividend payouts are significantly and positively related to their measure of dividend premium. In a separate study, Baker and Wurgler (2004b) find that the dividend premium is related to the propensity to pay dividends. Thus, the catering theory of dividends suggests that managers cater to investors' demands in terms of dividend payments. Li and Lie (2006) extend the catering theory of dividends and suggest that changes in existing dividends are associated with the premium that the capital market places on dividends. They further argue that the capital market rewards managers for considering investor preferences by changing the level of dividends.

By extension, Jiang et al. (2013) report that managers not only respond to investor demand for dividends but also share repurchases. They document that managers consider dividends and share repurchases as substitute payout mechanisms and that the dividend premium negatively affects share repurchases while the repurchase premium negatively affects the propensity to pay dividends. Consistent with this, Kulchania (2013) suggests that catering incentives play a major role in the substitution between dividends and repurchases and that dividend changes have a more pronounced effect when firms act in accordance with the catering hypotheses. Nevertheless, these studies do not consider catering effects in firms with entrenched managers.

The shareholder power hypothesis (Bebchuk, 2005) suggests that shareholders can force managers to act in their interest when they have greater legal and corporate governance power. Thus, compared to the board, shareholders are better at disciplining managers (even entrenched

managers) (Bebchuk, 2005; Iman, 2007). This is because managers (especially entrenched managers) can avoid board discipline by dominating boards and significantly reducing director and board effectiveness (Faleye, 2007; Thomas and Wells, 2010). However, as owners of the firm, shareholders are rarely dominated by managers and are in a better position to discipline managers (whether entrenched or not) in a way that maximises their interests (Bebchuk, 2005).

La Porta et al. (1999) suggest that relative to civil law countries, common law countries offer shareholders greater power because the active capital markets make it easier for investors to discipline managers. Ferris et al. (2009) report that the exercise of shareholder power may be more pronounced in common law countries due to the rights and protection provided to shareholders in these jurisdictions. Thus, the active capital markets in common law countries make it easier for investors to discipline managers (La Porta et al., 1999). Therefore, as entrenched managers observe the immense shareholder rights and power in these jurisdictions, they may seek avenues to incur a bonding cost to avoid investor discipline (Jensen, 1986; Jo and Pan, 2009). This need to incur bonding costs may be particularly relevant when entrenched managers need to raise capital from external capital markets (La Porta et al. 2000). To the extent that catering incentives present a viable bonding opportunity, entrenched managers are apt to respond to alleviate shareholder concerns about agency conflict. Thus, we argue that although entrenched managers may have higher inclination to restrain dividend payments to facilitate managerial perquisite consumption, catering incentives weaken the negative influence of managerial entrenchment on dividend payment, because managers (even entrenched managers) respond to shareholders' demand for dividends (as proxied by dividend premiums) in order to raise capital and avoid discipline. We, therefore, hypothesise that:

Hypothesis 2: Catering incentives weaken the negative managerial entrenchment–dividend

payments relationship.

3 Sample data and variable definitions

3.1 Sample data

We draw our sample from the Compustat North America Database and the Center for Research in Security Prices (CRSP) over the period 1990-2016. The Institutional Shareholder Services' (ISS) RiskMetrics (formerly IRRC) database for corporate charter features provides the data for the managerial entrenchment index and RiskMetrics' directors' database for board composition. Insider ownership data is extracted from the Thomson Reuters Insider Filing Data as reported on SEC Forms 3 and 4, whereas the Thomson Reuters Institutional (13f) Holdings database provides the institutional ownership data. The sample period is dictated by the fact that the database for the managerial entrenchment and other corporate governance variables starts from 1990.

Following Baker and Wurgler (2004a) and Jiang et al. (2013), we restrict our sample to firms that have share code of 10 or 11. The sample includes only firms with non-negative total assets. We exclude utility firms (SIC code 4900-4999) and financial firms (SIC code 6000-6999). We then winsorise all variables at the upper and bottom 1% to reduce the effects of outliers. This filtering gives a total sample of 80,478 firm-year observations for 9,677 firms. The data for the managerial entrenchment index starts from 1990 and covers only the S&P 1500 firms, and the insider ownership dataset begins from 1996. Therefore, as shown in Table 1, the managerial entrenchment variables restrict the sample size and the number of observations in the regression tables.

3.2 Payout measures

We model the choice between dividend payments and share repurchases. Thus, the dependent variable for dividend payments takes a value of 1 if the firm is classified as a dividend payer for a particular year and 0 otherwise. The decision to pay dividends is important because investors categorise shares based on whether they pay dividends and as an indication of safety (Baker and Wurgler, 2004a). The level of dividend payment is a secondary consideration. Moreover, even though the number of dividend payers continues to decline, there is no significant observable decline in the payout ratio (Fama and French, 2001). However, we augment our analyses by calculating and using the ratio of cash dividends scaled by the book value of assets to estimate the level of dividend payments.

Our measure of repurchases is similar to Baker and Wurgler (2004a), Li and Lie (2006), Bonaime and Ryngaert (2013), and Kulchania (2013), who use Purchases of Common and Preferred Stock (PRSTKC) adjusted for the decrease in Preferred Stock Redemption (PSTKRV).[1] Thus, for the choice model of repurchases, the dependent variable takes a value of 1 if the firm has a positive non-zero amount of repurchases and 0 otherwise. Again, we compute the ratio of repurchases to the book value of assets to determine the level of repurchases.

3.3 Managerial entrenchment proxies

3.3.1 Entrenchment index

Our managerial entrenchment measure is the Eindex metric by Bebchuk et al. (2009), which contains the following six provisions: classified or staggered boards, limits to charter amendments,

[1] Banyi et al. (2008) identify this measure as the most accurate proxy for actual common shares repurchased, especially for firms with high levels of employee stock option exercises.

limits to shareholder bylaw amendments, supermajority requirements for mergers, poison pills, and golden parachutes.[2] The first four provisions - classified or staggered boards, limits to charter amendments, limits to shareholder bylaw amendments, and supermajority requirements for mergers - limit the extent to which a majority of shareholders can impose their will on management. The last two provisions - poison pills and golden parachutes - represent measures that are taken in preparation for a hostile takeover. We follow Giroud and Mueller (2011) and Morellec et al. (2012) and use the Eindex from the latest available year for the intermediate years for the period 1990 to 2006.

Bebchuk et al. (2009) argue that these six provisions have garnered shareholder opposition because they arrogate significant powers to managers to influence the strategic decisions of the firm. Entrenchment can have adverse effects on management behaviour and incentives, including pursuing value-destroying projects, increasing shirking, and empire-building. Using the Eindex to measure managerial entrenchment, Bebchuk et al. (2009) find that increases in the index are associated with reduced firm value and negative abnormal returns. Therefore, managerial entrenchment might lead to reductions in dividend payments, in line with the 'outcome model' (La Porta et al., 2000).[3]

[2] The Institutional Shareholder Services' (ISS) RiskMetric's Governance database (formerly known as the IRRC Takeover Defense database) provides two separate feeds of governance provisions. The first feed, the ISS Governance dataset, provides the governance provisions for the largest 1500 companies for the years 1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006. The second feed, known as RiskMetrics governance data, was released for the year 2007, which resulted from a different collection process and contained, therefore, different variables. The governance data for the second feed spans the period 2007 to 2016 of our sample.

[3] In robustness checks, we use the alternative takeover index (ATindex) of Cremers and Nair (2005). The ATindex consists of three provisions, namely the presence of staggered boards, preferred blank check ('poison pill'), and restrictions on shareholder voting to call special meetings or act through written consent. Again, for intermediate years in the 1990-2006 period, the ATindex from the latest available is used.

3.3.2 Insiders on board

Insiders on the board is the fraction of board members who are also managers of the company or family members of managers of the company. This measure captures the proportion of insiders on the board (Kieschnick and Moussawi, 2018).[4] Concerning our measure, a high proportion of insiders on the board will undermine the control of managerial excesses and hence adversely affects payouts. Conversely, dividends can substitute for independent directors on the board, consistent with the substitution hypothesis that firms with weak corporate governance need to establish a reputation by paying dividends (La Porta et al., 2000; Al-Najjar and Hussainey, 2009).

3.3.3 Insider ownership

This measure is calculated based on Thomson Reuters Insider Filing Data as reported on SEC Forms 3 and 4. Insiders include all executives, officers, and beneficial owners who directly hold more than 10% of the firm's share. Morck et al. (1988) argue that increased managerial ownership can result in entrenchment effects leading to managerial opportunism in pursuit of value-destroying investment strategies that undermine the interests of outside shareholders. Thus, insider ownership is associated with restricted payouts (Morck et al., 1988; Jensen et al., 1992). However, studies such as Farinha (2003) and Farinha and López-de Foronda (2009) find that below entrenchment level, insider ownership and dividend policies act as substitute corporate governance devices. As insider ownership increases and entrenchment-related agency costs are exacerbated, firms use dividend policy as a compensating monitoring force.

[4] Previous studies (e.g. Rozeff, 1982; Schellenger et al., 1989) argue that board composition substitutes for dividend policy as a monitoring mechanism.

3.3.4 Institutional ownership

We obtain data for institutional ownership from the Thomson Reuters Institutional (13f) Holdings database. We measure institutional ownership as the fraction of stock owned by institutional investors (Morellec et al., 2012). Shleifer and Vishny (1986) argue that large shareholders have greater incentives to monitor management and potentially increase payouts. However, most large shareholders have significant voting rights to affect corporate decisions without resorting to dividend payments as a disciplining mechanism (Hu and Kumar, 2004).

3.4 Dividend and repurchase premium

3.4.1 Dividend premium

The measure of catering theory of dividends is the dividend premium, which indicates that managers cater to investors by paying dividends when investors put a stock price premium on payers, and by not paying when investors prefer non-payers (Baker and Wurgler, 2004a,b). Dividend premium is defined as the difference in the logarithm of the value-weighted average market-to-book ratios of dividend payers and non-payers in a given year (Baker and Wurgler, 2004a). Following Fama and French (2001), we compute the market-to-book ratio as the market value (measured as the market value of equity plus the book value of debt) divided by the book value of the firm. The market value of equity is the closing share price multiplied by the number of shares outstanding. The book value of debt is the book value of the total asset minus the book value of equity.

Market imperfections, such as transaction costs, taxes, and institutional investment constraints, drive the preference for dividend payments (Baker and Wurgler, 2004a,b). Also, some investors are naive and have an uninformed time-varying demand for dividend-paying stocks. With limits

to arbitrage, the demand for dividends keeps the prices of payers and non-payers apart. Moreover, Thaler and Shefrin (1981) and Shefrin and Statman (1984) propose that some investors prefer formal dividends to homemade dividends to combat self-control problems. In other words, when investors value and prefer dividends, they assign a higher valuation (dividend premium) to firms that pay dividends. Baker and Wurgler (2004a) argue that rational managers then cater to investor demand by paying dividends when investors put higher prices (premium) on payers, and they do not pay when investors prefer non-payers. Thus, dividend premium is related to the propensity to pay dividends (Fama and French, 2001; Baker and Wurgler, 2004a).

3.4.2 Repurchase premium

We measure repurchase premium as the difference between the logarithm of the market-to-book weighted by the book assets of repurchase firms and non-repurchasers in a given year. Similarly, the repurchase premium captures investor sentiment associated with share repurchasing firms. Jiang et al. (2013) and Kulchania (2013) assert that firms cater to investor demand by repurchasing shares when investors place a premium on the stock price of firms that repurchase shares, and by paying dividends when investors place a higher value on dividend-paying firms.

3.4.3 Difference premium

The difference between the dividend premium and the repurchase premium is the difference premium. The difference premium captures the magnitude of the dividend premium versus the repurchase premium, indicating a substitution effect between dividends and share repurchase based on this difference premium magnitude. A catering-driven substitution between dividends and repurchases should be associated with a positive difference premium (Jiang et al., 2013;

Kulchania, 2013). In other words, a positive difference premium suggests investors prefer dividend-paying firms more than share repurchasing firms.

Finally, following Jiang et al. (2013), the dividend premium, repurchase premium, and difference premium are standardised to have zero mean and unit variance. Figure 1 shows the time series of the average dividend premium, the repurchase premium, and the difference premium. Overall, we observe a significant increase in repurchase premium compared to dividend premium, indicating a marked improvement in investor preference for repurchases, especially during and after the crisis. We follow Kulchania (2013) and use the difference premium in our main analysis. However, we also use the individual dividend and repurchase premia, positive and negative difference premium, and the raw values of the dividend premium, repurchase premium, and difference premium in robustness checks.

PLEASE INSERT FIGURE 1 HERE

3.5 Control variables

In line with Jiang et al. (2013) and Kulchania (2013), control variables used in the estimation include market-to-book ratio, cash ratio, free cash flow, firm size (Ln(Assets)), capital expenditure (Capex), profitability, leverage, stock returns, systematic risk, idiosyncratic risk, firm age, and options ratio. Appendix A provides further information on the construction of the above variables.

3.6 Summary statistics

Table 1 presents summary statistics for the full sample. Panel A of Table 1 reports the summary statistics of the firm-specific variables used as control variables in the regression models. Panel B provides the summary statistics for the managerial entrenchment proxies, which are the Eindex by

Bebchuk et al. (2009) and the ATindex by Cremers and Nair (2005), insiders on board, insider ownership, and institutional ownership. As shown in Panel A, the mean of the market-to-book ratio for the full sample is 1.381, whereas that of free cash flow is 2.2%. Profitability averages 5.2%, and the leverage ratio is 22% for our sample. The average firm age is 15 years, with a maximum of 91 years.

PLEASE INSERT TABLE 1 HERE

Panel B reports average Eindex of 2.486 and ATindex of 2.029. These measures provide preliminary evidence of managerial entrenchment associated with our sample. The average percentage of insiders on the board is 18.3%, which suggests a possible insider influence on corporate decisions. Insider ownership is about 10.7%, and institutional investors own 48.4% of the stocks. The firm characteristics and corporate governance measures provide some indications of agency problems and likely adverse impact on payout policy.

3.7 Univariate analysis

Before analysing the effects of managerial entrenchment on payout policy, and the likely moderating effect of catering on this relationship, we compare the firm characteristics and the entrenchment measures as reported in Table 2 of dividend payers versus non-payers (Panel A), and between share repurchasing firms and non-repurchasers (Panel B). Consistent with prior studies (Jiang et al., 2013; Kulchania, 2013), we report that dividend-paying firms have more free cash flows and are larger, more profitable, and older than non-paying firms. The mean Eindex is higher for dividend payers than non-payers, even though the mean difference is statistically insignificant. However, the statistically significant positive mean difference of ATindex between non-payers and dividend payers is consistent with strong governance firms paying dividends

compared to weak governance firms. The insider ownership for non-payers is about 13.0% compared to 8.0% for dividend payers. The percentage of institutional ownership is approximately 46.7% for non-payers compared to 50.6% for dividend payers.

PLEASE INSERT TABLE 2 HERE

Panel B of Table 2 shows a statistically significant negative mean difference of repurchase premium between share repurchasing firms and non-repurchasers. This result supports the catering theory in which firms repurchase shares in response to external investor demands for repurchasing firms. We also find that repurchasing firms have more free cash flows, are larger firms, more profitable, and are older firms compared to non-repurchasers. The mean difference of Eindex is negative and statistically significant, suggesting possible managerial entrenchment associated with repurchasers. However, this is not conclusive evidence that entrenched managers favour share repurchases. The average percentages of insider ownership and institutional ownership for repurchasers are respectively 9.2% and 56.4% compared with 12.2% and 42.2% for non-repurchasers.

4 Methodology

Our baseline model estimates Hypothesis 1, that managerial entrenchment is negatively related to the likelihood of dividend payments and share repurchases. The logit regression model specified as follows:

$$Pr\left({}^{Div_{it}}/_{Repur_{it}}=1\right)=logit=\alpha_{it}+\beta_1 Entrenchment_{it}+\beta_i CONTROLS_{it}+\mu_{it} \quad (1)$$

where Div_{it} *and* $Repur_{it}$ are the dependent variables which take values of 1 for dividend payers and repurchasers and zero otherwise; and $Entrenchment_{it}$ is the proxy for managerial entrenchment,

which comprises Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership. These proxies are defined in Section 3.3. Using Ln(Eindex) instead of (Eindex) is similar to Kieschnick and Moussawi (2018) and avoids any incidence of outliers influencing the results.[5] Consistent with studies such as Jiraporn and Chintrakarn (2009) and Adjaoud and Ben-Amar (2010), we expect a negative relationship between the measures of managerial entrenchment and dividend policy. $CONTROLS_{it}$ includes market-to-book ratio, cash ratio, free cash flow, leverage, firm size (ln(Assets)), profitability, capital expenditure (Capex), stock returns, systematic risks, idiosyncratic risks, firm age, and options ratio. Finally, u_{it} is the firm-year specific error term. We also include industry and year dummies to control for specific industry and year effects.[6]

We set up a second logit regression model to examine Hypothesis 2, that the decision to pay dividends and repurchase shares is influenced by both catering effects and managerial entrenchment. The logit regression model specified as follows:

$$Pr\left({}^{Div_{it}}/_{Repur_{it}}=1\right)=logit=\alpha_{it}+\beta_1 Catering_t+\beta_2 Entrenchment_{it} +\beta_3(Entrenchment_{it}\times Catering_t)+\beta_i CONTROLS_{it}+\mu_{it} \quad (2)$$

where Div_{it} and $Repur_{it}$ are the dependent variables which take values of 1 for dividend payers and repurchasers and zero otherwise; $Catering_t$ represents Difference premium, which proxies for investor demand for dividends and share repurchases (i.e. catering effects); and $Entrenchment_{it}$ is the proxy for managerial entrenchment, which comprises Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership. These proxies are defined in Section 3.3. $Entrenchment_{it} \times Catering_t$ is the interaction between managerial entrenchment and difference premium.

[5] In unreported results, we also find similar results when we use the raw values of Eindex.
[6] The literature identifies these factors to determine dividend payments and share repurchases (e.g. Grullon and Michaely, 2002; Jiang et al., 2013; Kulchania, 2013).

Consistent with our hypothesis, we expect a positive coefficient for the interaction term, which will indicate that catering effects moderate the negative relationship between managerial entrenchment and payout policy.

The $CONTROLS_{it}$ includes market-to-book ratio, cash ratio, free cash flow, leverage, firm size (ln(Assets)), profitability, capital expenditure (Capex), stock returns, systematic risks, idiosyncratic risks, firm age, and options ratio. Finally, u_{it} is the firm-year specific error term. We also include industry and year dummies to control for specific industry and year effects.[7]

5 Empirical results

5.1 Managerial entrenchment and payout policy

We first run logit regression to test Hypothesis 1, that managerial entrenchment reduces dividend payments. On the one hand, entrenched managers commit to payouts as a substitute for agency problems to build a reputation for future equity issues (La Porta et al., 2000; Hu and Kumar, 2004). On the other hand, the 'outcome model' (La Porta et al., 2000) asserts that firms with weak shareholder rights (high managerial entrenchment) are associated with lower dividend payments since entrenched managers tend to expropriate minority shareholders. Our measures of managerial entrenchment include the 'entrenchment proxy, (Eindex)' by Bebchuk et al. (2009), Insiders on board, Insider ownership, and Institutional ownership. Unlike previous studies, we test each of the entrenchment proxies separately before combining them to avoid any omitted variables bias in the estimations. In addition to the control variables (Section 3.5), we also include both industry and year fixed effects.

[7] The literature identifies these factors to determine dividend payments and share repurchases (e.g. Grullon and Michaely, 2002; Jiang et al., 2013; Kulchania, 2013).

Table 3 presents the results of the logit regression defined in Equation (2). Columns (1)-(5) are for dividends, Columns (6)-(10) are for share repurchases, and Columns (11)-(15) are for total payout. The coefficients of Ln(Eindex*)* are negative and statistically significant at the 1% level in Column (1) and 5% level in Column (5) for dividends. This result implies that firms with entrenched managers are less likely to pay dividends. We do not find a significant effect on share repurchases (Columns (6)-(10)) and total payout (Columns (11)-(15)). The coefficients of insiders on the board are negative and significant for dividends, share repurchases, and total payout. This result is consistent with the argument that independent directors improve board monitoring and better align with shareholder interests (Ryan Jr and Wiggins III, 2004). We also find a significantly negative coefficient of insider ownership for dividends. This evidence is consistent with owner-managers' preference for retained earnings compared to payouts (Eckbo and Verma, 1994).

PLEASE INSERT TABLE 3 HERE

Our results hold after accounting for the impact of firm characteristics on the propensity to pay dividends or repurchase shares (Fama and French, 2001). The negative coefficient for the market-to-book ratio is consistent with the argument that high-growth firms commit free cash flows to undertake investments rather than payouts (Zwiebel, 1996; La Porta et al., 2000). We also find a positive effect of free cash flows on payouts, in line with reducing the agency costs of free cash flows through payouts (Jensen, 1986; Jiang et al., 2013; Kulchania, 2013). Our results are also consistent with large firms' preference for dividend payments and share repurchases. Large firms with limited growth opportunities and unlimited free cash flows are more likely to disgorge cash to shareholders through dividends and share repurchases (Fama and French, 2001; Denis and Osobov, 2008). Capital expenditure is also negatively related to the propensity to pay dividends (Grullon et al., 2002).

Similar to Grullon et al. (2002) and Benartzi et al. (1997), we find that profitable firms are more likely to pay dividends. These firms are also expected to repurchase shares and increase total payouts. Consistent with the life cycle theory, the results indicate that firms tend to increase cash dividends and payouts as they become mature (Fama and French, 2001; Grullon et al., 2002; DeAngelo and DeAngelo, 2006). Like Jiang et al. (2013), we control for risk – Systematic risk and Idiosyncratic risk – which might explain the payout behaviour of firms. Overall, we find significant support for Hypothesis 1, that managerial entrenchment is associated with reduced dividend payments. Thus, firms with entrenched managers are more likely to utilise free cash flows in pursuit of value-destroying investment strategies at the expense of dividend payments (Jensen, 1986).

5.2 Managerial entrenchment, catering, and payout policy

Our next analysis focuses on whether catering theory moderates the relationship between managerial entrenchment and payout policy. Hypothesis 2 asserts that although entrenched managers may be inclined to retain dividend payments to increase the amount of corporate resources available for managerial perquisites, they may pay a dividend when investors demand with a view to avoiding market discipline. We test the catering effects on payout policy using the Difference premium as described in Section 3.4 (Baker and Wurgler, 2004a; Jiang et al., 2013; Kulchania, 2013). Using the difference premium allows us to capture the catering-driven substitution between dividends and repurchases (Kulchania, 2013). Table 4 presents the logit regression estimation of the effects of catering theory on the relationship between managerial entrenchment and dividend payment (Columns (1)-(6)) and share repurchases (Columns (7)-(12)).

PLEASE INSERT TABLE 4 HERE

The coefficient of Difference premium is significantly positive for dividends (Column 1) and negative for share repurchases (Column 7). This result provides evidence that firms are more (less) likely to pay dividends (repurchase shares) when the dividend premium is higher than the repurchase premium. These findings are consistent with the catering-driven substitution between dividends and share repurchases (Jiang et al., 2013; Kulchania, 2013). We do not find a significant effect of the difference premium when we control for the measures of managerial entrenchment.

Our focus is to establish whether the catering effects mediate the managerial entrenchment influence on dividends and share repurchases. Here, we interact each of the managerial entrenchment measures with the difference premium. The coefficient of the interaction term Ln(Eindex)×Difference premium is positive and statistically significant at the 1% level (Columns (2)&(6)) for dividends. This result suggests that firms with entrenched managers pay dividends when investors exert pressure on them to do so. Thus, the catering effects of dividend payments dominate the adverse effects of managerial entrenchment on dividend policy. Our findings shed light on the significance of investor pressures in forcing firms with weak governance to disgorge free cash flows to shareholders to reduce the agency costs of free cash flow. While prior studies on the managerial entrenchment and dividend policy argue that dividends are used as substitutes to minimise agency costs (Hu and Kumar, 2004), the evidence we find indicates that weak governance firms are unlikely to use dividends to reduce agency problems unless there is deliberate investor demand for dividends. We do not see such moderating catering effects on share repurchases.

The coefficient of the interaction term Insiders on board×Difference premium is positive and significant for dividends at the 1% level (Columns (3)&(6)). We do not find a significant effect on share repurchases with coefficient significant at only the 10% level. This evidence highlights the

mediating impact of catering effects on the relationship between insiders on board and dividend payout. Stated differently, while firms with insiders on board are less likely to pay dividends, they cater to external demand for dividends to avert negative market response associated with non-dividend payments. We also find a positive coefficient of the interaction term Insider ownership×Difference premium for dividends, indicating that catering effects mediate the negative impact of insider ownership on dividend payments. Thus, our findings are consistent with the argument that insiders would always indulge their preference for utilising free cash flows to undertake investment projects that might be value-destroying unless there is external demand for dividend payments. We do not find such effects for share repurchases.

The coefficients of the interaction term Institutional ownership×Difference premium are not significant for both dividends (Columns (5)&(6)) and share repurchases (Columns (11)&(12)). In other words, firms that have high levels of institutional ownership do not necessarily respond to investor demand to pay dividends or repurchase shares. This result suggests that while institutional ownership has a negative relationship with dividends, outside investor demand for dividends is unlikely to revert firms' decisions to pay dividends. We argue that the institutional shareholders hold sway in payout policy to preserve their preference at the expense of minority shareholders. Perhaps, along the lines of Kahn and Winton (1998), institutional investors are unlikely to force firms to pay dividends if they view increased investments as an avenue to enhance their future value in the firm rather than short-term cash flows from payouts. Overall, this suggests that increased institutional ownership is detrimental to the interests of minority shareholders.

In sum, our findings support Hypothesis 2, that entrenched managers respond to investor demand for dividends. Thus, we find evidence that catering effects mediate the negative relationship between managerial entrenchment and dividends. We conclude that whereas managerial

entrenchment adversely affects minority shareholder interests, external pressures through demand for dividends substitute for monitoring and reduce agency problems related to payouts.

6 Robustness

6.1 Baseline regressions with corrections for endogeneity

To address endogeneity concern associated with our corporate governance measures, we follow Wooldridge (2015) and Kieschnick and Moussawi (2018) and use the control function approach.[8] We first regress a firm's corporate governance measures – Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership – on the control variables along with state dummy variables (if a firm is incorporated in California, Texas, Maryland, Minnesota, Ohio, Nevada, New York, and Pennsylvania) as instruments. Next, we use the residuals from this regression as a control function for the endogenous corporate governance variables. Finally, we include the control function in the baseline regression model along with the endogenous corporate governance variables.[9]

Using the states of incorporation as instruments satisfies the relevance and exclusion restriction conditions. First, as Kieschnick and Moussawi (2018) argue, state law controls the provisions in the corporate charter, which defines different anti-takeover provisions across states. Second, the provisions in the corporate charter as espoused in the state corporate law likely influences other governance structures. Third, it is unlikely that the state of incorporation correlates with payout

[8] Terza et al. (2008) argue that two-stage prediction models, such as 2SLS, can produce biased and inconsistent estimators in nonlinear models. However, they demonstrate that the estimates of the control function are more consistent than those of the 2SLS.
[9] Kieschnick and Moussawi (2018) explain that the logic of the control function approach is to control that part of the endogenous variable that correlates with the error term.

policy. The impact on payout policy has more to do with the headquarters of the firm than the state of incorporation (Gao et al., 2011).

Table 5 provides the results for the control functions using the states of incorporation as instruments. Consistent with Kieschnick and Moussawi (2018), there is a partial correlation between the state of incorporation and our entrenchment variables. We identify the endogenous entrenchment variables used in the baseline results by looking at the coefficients of the control functions in Table 6. A statistically significant control function associated with an entrenchment measure implies the associated entrenchment variable is endogenous. Thus, we then control for this control function in the baseline regressions for the decision to pay dividends and repurchase shares. As shown in the reported output of Table 6, the control functions for Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership are potentially endogenous for dividends. Consequently, we treat Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership as endogenous variables in the baseline regressions for both dividends and share repurchases.

PLEASE INSERT TABLE 5 HERE

PLEASE INSERT TABLE 6 HERE

Table 7 shows the logit regression output with corrections for endogeneity. Similar to our earlier results in Tables 3 and 4, we find evidence for the catering-driven substitution between dividends and share repurchases. The coefficient for Ln(Eindex*)* is not significant for dividends, but negative and significant for share repurchases. There is a significant negative relationship between insider ownership and dividends, in line with the earlier results in Table 3. More importantly, we confirm our findings of the mediating role of catering effects on the negative relationship between

managerial entrenchment on payout policy. Specifically, we find positive and significant coefficients for the interaction terms (Ln(Eindex)×Difference premium, Insiders on board×Difference premium, and Insider ownership×Difference premium) for dividends (Column 2). Therefore, we conclude that endogenous variables do not drive our earlier results.

PLEASE INSERT TABLE 7 HERE

6.2 Alternative managerial entrenchment measure

We use the alternative takeover index, ATindex, by Cremers and Nair (2005) as alternative entrenchment proxy. Table 8 reports the results of the logit regressions using the Ln(ATindex). Generally, our results are consistent with the baseline results of both catering effects on dividends and share repurchases, and the negative impact of managerial entrenchment on dividends. However, the interaction term Ln(ATindex)×Difference premium is not significant for the dividends. Thus, we find evidence of catering effects but not the mediating impact of catering on the negative relationship between managerial entrenchment and dividend payments.

PLEASE INSERT TABLE 8 HERE

6.3 Individual dividend and repurchase premia

We follow Jiang et al. (2013) and use individual dividend premium and share repurchases premium in the regressions to determine the separate effects on dividends and share repurchases. Table 3.4 reports the logit regressions estimating the effects of managerial entrenchment on dividends (Columns (1)-(4)) and share repurchases (Columns (5)-(8)). Our results are similar to earlier results when we use individual dividend premium and share repurchases premium. The measures of

catering effects are Dividend premium and Repurchase premium. We interact the dividend premium and repurchase premium with each of the proxies for managerial entrenchment.

PLEASE INSERT TABLE 9 HERE

The coefficient of Ln(Eindex) is negative and significant for dividends. While the interaction term Ln(Eindex)×Dividend premium is marginally significant at the 10% level, the coefficients of the interaction terms Ln(Eindex)×Repurchase premium and Insiders on board×Repurchase premium are negative and statistically significant at the 5% and 1% levels, respectively (Column (4)). We interpret this finding similar to the earlier results, which suggests catering effects mediate the negative relationship between managerial entrenchment and dividend payments. We do not find similar results for share repurchases. Overall, when we use the individual Dividend premium and Repurchase premium in place of the Difference premium, our results of the catering effects on the relationship between managerial entrenchment and payout policy remain the same.

6.4 Alternative definition of difference premium

We use an alternative definition of Difference premium in line with Jiang et al. (2013). Jiang et al. (2013) define frequent/regular dividend payers as firms that paid dividends in years *t-1*, *t-2*, and *t-3* and non-payers otherwise. Frequent/regular repurchasers and non-repurchasers are defined analogously. The Difference premium is then computed as the dividend premium using this 'strict' definition of dividend payers and non-payers minus repurchase premium using the strict definition of repurchasers and non-repurchasers. Table 10 shows the logit regression with the new Difference premium as a proxy for catering effects. All other variables are defined as used in previous tables.

PLEASE INSERT TABLE 10 HERE

Using the strict definition of difference premium does not change our earlier results. The negative managerial entrenchment effect on dividends remains unchanged. Consistent with the baseline results using the 'loose' definition of difference premium, the interaction terms Ln(Eindex)×Difference premium and Insiders on board×Difference premium are positive and significant at the 1% level for dividends. Overall, our main prediction holds to the extent that catering mediates the relationship between managerial entrenchment and dividends.

6.5 Managerial entrenchment, catering, and the level of payouts

Table 11 presents the OLS and Tobit regressions estimation of the effects of managerial entrenchment and catering on the level of dividends and share repurchases. The dependent variable is the ratio of cash dividends to total assets (Columns 1&2 for dividends), the ratio of share repurchases to total assets (Columns 3&4 for repurchases), the ratio of total payout (dividends plus share repurchases) to total assets (Columns 5&6). Consistent with earlier models, the independent variables are entrenchment index Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership. Difference premium measures catering effects. The interaction terms between the managerial entrenchment proxies and the difference premium measure the mediating impact of catering effects on the relationship between managerial entrenchment and payout policy.

PLEASE INSERT TABLE 11 HERE

Consistent with the baseline results in Table 3, we find a negative effect of managerial entrenchment on the level of dividend payments but not share repurchases and total payout. Our catering effects proxy is not statistically significant, indicating that the firms only cater to the demand to pay dividends but not the amount of dividends. The interaction term Ln(Eindex)× Difference premium is positive and statistically significant for the dividends. Since the other

interaction terms are not significant, we argue that there is a limited mediating effect of catering on the negative relationship between managerial entrenchment and amount of dividend payments. However, we still find evidence supporting the catering-driven substitution between dividends and share repurchases (Jiang et al., 2013; Kulchania, 2013). The coefficients of the control variables have the expected signs as those reported in Table 3.

7 Conclusion

We test the managerial entrenchment impact on payout policy. Prior literature presents two competing arguments for the effect of managerial entrenchment on payout policy, namely the 'outcome model' and the 'substitution hypothesis'. According to the outcome model, corporate insiders succumb to minority shareholder pressures to distribute cash. The substitution hypothesis, on the other hand, argues that insiders pay dividends to establish a reputation to enhance future equity issuance prospects. The other strand of the literature explains that firms cater to investor demand for dividends to avoid adverse market reactions for non-payments. Our paper synthesises these two strands of the literature and explores the mediating role of catering effects on the relationship between corporate governance and payout policy.

Consistent with our central prediction, we find that managerial entrenchment and weak governance decrease the propensity to pay dividends. Using dividend/repurchase premium to measure investor demands for payouts, we find evidence for the catering effects on payout policy and establish a catering-driven substitution between dividends and share repurchases. Next, we document a mediating role of catering effects on the relationship between corporate governance and payout policy. Specifically, we find evidence that entrenched managers pay dividends only when there is an external demand for dividends. Further, strong governance firms (using different board

characteristics as proxies) are associated with a high propensity to pay dividends. Weak governance firms, with a high proportion of insiders on the board and insider ownership, pay dividends in response to catering effects. Finally, our baseline results are consistent with a battery of robustness tests, using alternative proxies for catering effects, managerial entrenchment, and dealing with endogeneity issues. Thus, catering effects mediate the relationship between corporate governance and payout policy.

Our results have important policy implications for management, regulators, shareholders and corporate decision-makers, especially governments in common law countries. In these countries, there is little shareholder involvement in corporate decision-making because the dispersed ownership structure leads to a separation of ownership from control. As a result, the board becomes the most important corporate governance mechanism, and entrenched managers can expropriate corporate resources by rendering the board effective. The findings of our analyses that entrenched managers generally reduce dividend payments but pay dividends when investors demand it supports the case for increasing shareholder participation in corporate decisions in these countries. Thus, policymakers, governments and regulators in these countries can strengthen corporate governance by encouraging greater shareholder participation in corporate decisions. Further, because cash retention (non-payment of dividends) increases the free cash flow problem, shareholders can reduce the expropriation potential of entrenched managers by participating in corporate decisions.

Appendix A: Variable definitions

Our variables are constructed using CRSP/Compustat, Execucomp, RiskMetrics Governance, RiskMetrics Directors databases.

Variable	Definition
Dividends	Dollar amount spent on dividends is the value of common dividends (DVC).
Share repurchases	Dollar amounts spent on repurchases are calculated using Purchase of Common and Preferred stock (PRSTKC) after adjusting for the decrease in Preferred Stock Redemption (PSTKRV) from previous year.
Market-to-book ratio	Market value of assets to book value of assets.
Dividend premium	The difference in the logarithm of the average market-to-book ratios of dividend payers and non-payers in a given year.
Repurchase premium	The difference in the logarithm of the average market-to-book ratios of repurchase firms and non-repurchasers in a given year.
Difference premium	Dividend premium minus repurchase premium.
Cash ratio	Cash and cash equivalent (CHE) to total assets (AT).
Free cash flow	Gross operating income (OIBDP) minus depreciation (DP), tax payments (TXT) and interest expenses (XINT) divided by total assets (AT).
Ln(Assets)	Logarithm of total assets (AT).
Capex	Capital expenditure to total assets (AT).
Profitability	Gross operating income (OIBDP) to total assets (AT).
Leverage	Long-term debt (DLTT) to total assets (AT).
Stock returns	The buy-and-hold return adjusted for the value-weighted market return.
Systematic risks	Standard deviation of fitted values from a regression of the firm's daily excess stock returns on the market factor (i.e. the CRSP value-weighted market return less the risk-free rate).
Idiosyncratic risks	Standard deviation of residuals from a regression of the firm's daily excess stock returns on the market factor (i.e. the CRSP value-weighted market return less the risk-free rate).
Firm age	Log of years on Compustat.
Options ratio	Options outstanding to the number of shares outstanding.
Eindex	Sum of the number of the six anti-takeover provisions, restricting shareholder rights introduced by Bebchuk et al. (2009). The anti-takeover provisions are as follows: staggered boards, limits to amend bylaws, limits to amend charter, supermajority to approve a merger, golden parachute, and poison pill.
ATindex	The sum of the number of the three anti-takeover provisions restricting shareholder rights introduced by Cremers and Nair (2005). These three provisions are as follows: staggered boards, preferred blank check ('poison pill'), and restrictions on shareholder voting to call special meetings or act through written consent.
Insiders on board	Proportion of board accounted for by managers or their family members, derived from RiskMetrics directors' database.
Insider ownership	Fraction of stock owned by insiders who directly hold more than 10% of the firm's shares.
Institutional ownership	Fraction of stock owned by institutional investors.

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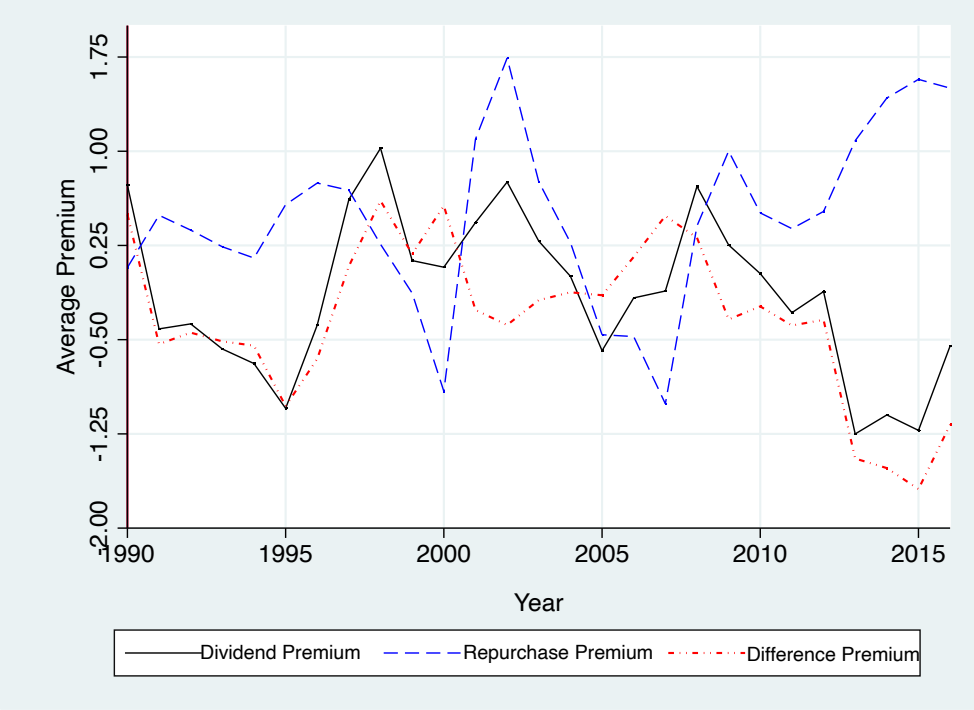

Figure 1: Time Variations in Premium

The figure plots the mean dividend, repurchase and difference premium over the sample period. The sample consists of listed non-financial firms in the US drawn from *Compustat* over the period from 1990 to 2016.

Table 1: Summary statistics

The table provides the summary statistics for both firm characteristics and proxies for managerial entrenchment. The sample is drawn from the Compustat North America Database and the Centre for Research in Security Prices (CRSP) over the period 1990-2016. Data for the managerial entrenchment proxies are extracted from the Institutional Shareholder Services' (ISS) RiskMetrics (formerly IRRC) database for corporate charter features, and RiskMetrics' directors' database for insiders on board. The initial sample consists of 80,478 firm-year observations for 9,677 firms, and final sample is made up of 16,624 firm-year observations. All the variables are defined in Appendix A.

Panel A: Firm variables	*N*	Mean	SD	Min	Median	Max
Market to book	80478	1.381	1.451	0.000	0.949	18.634
Cash ratio	80478	0.163	0.188	0.000	0.087	0.804
Free cash flow	80478	0.022	0.109	-0.471	0.040	0.238
Ln(Assets)	80478	5.975	2.000	2.303	5.786	12.989
Capex	80478	0.063	0.068	0.000	0.041	0.955
Profitability	80478	0.052	0.141	-0.531	0.075	0.340
Leverage	80478	0.220	0.187	0.000	0.198	0.938
Stock returns	80478	0.109	0.175	-0.382	0.127	0.357
Systematic risk	80478	0.055	0.048	0.001	0.042	0.247
Idiosyncratic risk	80478	0.120	0.073	0.022	0.103	0.419
Firm age	80478	15.167	15.674	0.000	10.000	91.000
Options ratio	80478	0.009	0.025	0.000	0.001	0.183
Panel B: Proxies for entrenchment						
Eindex	16624	2.486	1.328	0.000	3.000	5.000
ATindex	16624	2.029	0.798	0.000	2.000	3.000
Insiders on board	15948	0.183	0.110	0.000	0.143	1.000
Insider ownership	31311	0.107	0.191	0.000	0.017	0.866
Institutional ownership	42540	0.484	0.313	0.000	0.498	0.984

Table 2: Univariate results

The table shows the firm characteristics, managerial entrenchment measures and corporate insider dynamics for non-payers and dividend payers (Panel A), and non-repurchasers and share repurchasers (Panel B). The initial sample consists of 80,478 firm-year observations for 9,677 firms, and final sample is made up of 16,624 firm-year observations. All the variables are defined in Appendix A. *** indicates significance at the 1% level.

Panel A: Dividends

	Non-payers			Dividend payers			Mean Difference	
	N	Mean	Median	*N*	Mean	Median	Difference	*t*-stat
Dividend premium	46700	-0.089	-0.113	33778	-0.148	-0.117	0.058***	(13.25)
Market to book	46700	1.470	0.969	33778	1.257	0.926	0.213***	(20.62)
Cash ratio	46700	0.198	0.118	33778	0.114	0.063	0.084***	(64.46)
Free cash flow	46700	0.003	0.029	33778	0.048	0.052	-0.045***	(-58.54)
Ln(Assets)	46700	5.327	5.159	33778	6.872	6.851	-1.544***	(-116.89)
Capex	46700	0.061	0.038	33778	0.065	0.047	-0.003***	(-7.18)
Profitability	46700	0.026	0.058	33778	0.088	0.093	-0.062***	(-63.02)
Leverage	46700	0.207	0.168	33778	0.238	0.226	-0.031***	(-23.01)
Stock returns	46700	0.108	0.127	33778	0.112	0.127	-0.004***	(-3.32)
Systematic risk	46700	0.062	0.049	33778	0.045	0.035	0.017***	(49.83)
Idiosyncratic risk	46700	0.140	0.123	33778	0.093	0.078	0.047***	(96.05)
Firm age	46700	10.689	8.000	33778	21.358	17.000	-10.670***	(-101.18)
Options ratio	46700	0.010	0.001	33778	0.006	0.000	0.004***	(20.67)
Eindex	6632	2.482	3.000	9992	2.488	3.000	-0.006	(-0.28)
ATindex	6632	2.054	2.000	9992	2.012	2.000	0.043***	(3.39)
Insiders on board	6660	0.199	0.167	9288	0.172	0.125	0.027***	(15.65)
Insider ownership	16639	0.130	0.028	14672	0.080	0.010	0.049***	(23.02)
Institutional ownership	24345	0.467	0.453	18195	0.506	0.553	-0.039***	(-12.57)

Panel B: Share repurchases

	Non-repurchasers			Share repurchasers			Mean Difference	
Variables	*N*	Mean	Median	*N*	Mean	Median	Difference	*t*-stat
Repurchase premium	48813	0.437	0.490	31665	0.468	0.490	-0.031***	(-6.22)
Market to book	48813	1.400	0.909	31665	1.351	1.001	0.049***	(4.67)
Cash ratio	48813	0.169	0.088	31665	0.154	0.086	0.015***	(11.14)
Free cash flow	48813	0.005	0.030	31665	0.047	0.054	-0.042***	(-54.59)
Ln(Assets)	48813	5.601	5.378	31665	6.553	6.478	-0.952***	(-67.78)
Capex	48813	0.065	0.042	31665	0.058	0.041	0.007***	(14.45)
Profitability	48813	0.033	0.062	31665	0.083	0.092	-0.050***	(-49.85)
Leverage	48813	0.227	0.204	31665	0.209	0.191	0.018***	(13.50)
Stock returns	48813	0.115	0.127	31665	0.100	0.127	0.015***	(11.92)
Systematic risk	48813	0.058	0.045	31665	0.049	0.039	0.009***	(25.97)
Idiosyncratic risk	48813	0.133	0.115	31665	0.100	0.085	0.033***	(63.42)
Firm age	48813	12.544	8.000	31665	19.210	14.000	-6.666***	(-60.25)
Options ratio	48813	0.010	0.001	31665	0.006	0.000	0.004***	(24.01)
Eindex	6415	2.332	2.000	10209	2.582	3.000	-0.251***	(-11.90)
ATindex	6415	2.017	2.000	10209	2.036	2.000	-0.018	(-1.44)
Insiders on board	5747	0.195	0.167	10201	0.176	0.143	0.019***	(10.82)
Insider ownership	15802	0.122	0.021	15509	0.092	0.014	0.030***	(13.90)
Institutional ownership	24001	0.422	0.385	18539	0.564	0.628	-0.142***	(-47.74)

Table 3: Managerial entrenchment and payout policy

The table provides the output of the logit regression estimations of dividends (Columns 1-5), share repurchases (Columns 6-10), and total payout (Columns 1-15). The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise; 1 for repurchasers and 0 otherwise; and 1 for positive nonzero total payout and 0 otherwise. Ln(Eindex) by Bebchuk et al. (2009), Insiders on board, Insider ownership, and Institutional ownership are the proxies of managerial entrenchment. Refer to Appendix A for definitions and measures of all the variables in the model. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dividends					Share repurchases					Total payout				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Ln(Eindex)	-0.168***				-0.228**	0.063				-0.050	0.006				-0.204*
	(0.007)				(0.023)	(0.215)				(0.536)	(0.923)				(0.066)
Insiders on board		-0.450**			-0.746**		-0.866***			-0.778**		-1.106***			-1.494***
		(0.040)			(0.048)		(0.000)			(0.016)		(0.000)			(0.000)
Insider ownership			-0.442***		-0.868***			-0.087		-0.328*			-0.254***		-0.761***
			(0.000)		(0.000)			(0.208)		(0.063)			(0.001)		(0.000)
Institutional ownership				-1.176***	-2.387***				0.855***	0.060				-0.181***	-1.146***
				(0.000)	(0.000)				(0.000)	(0.741)				(0.000)	(0.000)
Market to book	-0.066***	-0.058**	0.011	0.083***	-0.083**	-0.128***	-0.140***	-0.106***	-0.102***	-0.138***	-0.090***	-0.105***	-0.066***	-0.033***	-0.100***
	(0.005)	(0.010)	(0.466)	(0.000)	(0.014)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.004)
Cash ratio	-1.470***	-1.146***	-1.004***	-0.879***	-1.147***	0.686***	0.685***	0.597***	0.352***	0.866***	0.186	0.191	0.247**	0.021	0.317
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.309)	(0.298)	(0.022)	(0.800)	(0.259)
Free cash flow	2.408***	2.448***	0.912***	0.273	2.045**	3.562***	3.628***	2.741***	1.583***	2.788***	2.717***	3.098***	2.014***	1.135***	1.653**
	(0.000)	(0.000)	(0.007)	(0.279)	(0.026)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.045)
Ln(Assets)	0.377***	0.362***	0.329***	0.405***	0.299***	0.251***	0.210***	0.251***	0.166***	0.305***	0.333***	0.265***	0.335***	0.331***	0.308***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Capex	-3.251***	-3.403***	-2.059***	-1.382***	-3.782***	-0.977**	-1.164**	-0.615**	-0.943***	-2.283***	-2.257***	-2.457***	-1.338***	-1.178***	-3.410***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.039)	(0.018)	(0.034)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Profitability	1.893***	1.604***	1.826***	1.879***	3.237***	1.912***	2.136***	1.179***	1.219***	2.867***	1.457***	1.589***	1.298***	1.291***	3.066***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	-0.397**	-0.333*	-0.762***	-0.720***	0.134	-1.285***	-0.964***	-1.095***	-0.871***	-1.050***	-1.132***	-0.803***	-1.024***	-0.991***	-0.687**
	(0.021)	(0.051)	(0.000)	(0.000)	(0.610)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.019)
Stock returns	-11.708***	-4.664*	-0.707	-1.911***	-10.027	0.207	1.515	-0.033	-0.315	4.243	-5.153	1.154	0.314	-1.013**	-5.274
	(0.001)	(0.058)	(0.644)	(0.000)	(0.129)	(0.923)	(0.480)	(0.980)	(0.501)	(0.352)	(0.105)	(0.652)	(0.830)	(0.028)	(0.522)
Systematic risk	-2.922***	-2.486***	-2.468***	-1.906***	-2.406**	-2.145***	-2.170***	-1.928***	-1.855***	-2.507***	-2.681***	-2.281***	-2.252***	-1.970***	-2.689***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.015)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.006)
Idiosyncratic risk	-8.098***	-8.217***	-5.866***	-5.774***	-9.962***	-6.110***	-5.374***	-4.767***	-3.657***	-5.552***	-8.109***	-7.308***	-5.362***	-4.861***	-8.575***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm age	0.831***	0.806***	0.690***	0.491***	0.911***	0.081***	0.082***	0.190***	0.256***	-0.047	0.517***	0.518***	0.480***	0.405***	0.425***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.002)	(0.000)	(0.000)	(0.266)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Options ratio	-6.907*	1.211	2.533**	6.489***	-1.493	-4.937*	-4.589	-1.624*	1.868***	-10.695*	-7.356**	0.286	-1.098	3.780***	-7.210
	(0.051)	(0.733)	(0.017)	(0.000)	(0.846)	(0.088)	(0.128)	(0.094)	(0.006)	(0.077)	(0.037)	(0.936)	(0.251)	(0.000)	(0.383)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15753	15218	30836	42171	7978	16533	15784	31240	42513	8705	15409	14879	30806	42218	7354
pseudo-R^2	0.361	0.338	0.323	0.300	0.373	0.165	0.153	0.159	0.148	0.173	0.249	0.235	0.245	0.219	0.241
Chi-squared	7716.07	7037.89	13730.02	17257.85	3982.84	3632.81	3148.55	6886.84	8592.58	1898.34	3876.79	3525.51	9517.65	12225.51	1662.55
F-test	-6831.86	-6899.41	-14421.22	-20123.54	-3345.45	-9212.31	-8740.29	-18208.82	-24816.65	-4534.08	-5852.30	-5727.15	-14677.11	-21797.25	-2623.62

Table 4: Managerial entrenchment, catering and payout policy

The table provides the output of the logit regression estimations of dividends (Columns 1-6) and share repurchases (Columns 7-12). The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise; 1 for repurchasers and 0 otherwise. Difference premium measures catering effects, Ln(Eindex) by Bebchuk et al. (2009), Insiders on board, Insider ownership, and Institutional ownership are the proxies of managerial entrenchment. The interaction between managerial entrenchment and catering effects are Ln(Eindex)×Difference premium, Insiders on board×Difference premium, Insider ownership×Difference premium, Institutional ownership×Difference premium. Refer to Appendix A for definitions and measures of all the variables in the model. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dividends						Share repurchases					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Difference premium	0.369***	0.703	1.184	1.338	1.325	0.191	-0.167***	-0.617	-1.068	-0.911	-1.027	-0.944
	(0.000)	(0.470)	(0.214)	(0.154)	(0.177)	(0.849)	(0.001)	(0.374)	(0.108)	(0.168)	(0.138)	(0.195)
Ln(Eindex)		-0.177*	-0.211**	-0.225**	-0.229**	-0.153		-0.071	-0.043	-0.052	-0.051	-0.065
		(0.083)	(0.035)	(0.025)	(0.022)	(0.135)		(0.390)	(0.599)	(0.521)	(0.531)	(0.428)
Insiders on board		-0.722*	-0.480	-0.768**	-0.747**	-0.470		-0.788**	-0.631*	-0.775**	-0.780**	-0.627*
		(0.056)	(0.218)	(0.042)	(0.048)	(0.228)		(0.015)	(0.058)	(0.016)	(0.016)	(0.061)
Insider ownership		-0.874***	-0.854***	-0.631***	-0.869***	-0.660***		-0.331*	-0.317*	-0.385**	-0.328*	-0.411**
		(0.000)	(0.000)	(0.007)	(0.000)	(0.005)		(0.061)	(0.072)	(0.050)	(0.063)	(0.036)
Institutional ownership		-2.380***	-2.402***	-2.388***	-2.362***	-2.359***		0.049	0.055	0.059	0.092	0.099
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		(0.786)	(0.762)	(0.743)	(0.634)	(0.608)
Ln(Eindex) × Difference premium		0.474***				0.537***		-0.223				-0.213
		(0.008)				(0.003)		(0.142)				(0.166)
Insiders on board × Difference premium			1.422***			1.492***			0.864*			0.942**
			(0.008)			(0.007)			(0.066)			(0.052)
Insider ownership × Difference premium				0.594**		0.515*				-0.172		-0.273
				(0.042)		(0.087)				(0.507)		(0.302)
Institutional ownership × Difference premium					0.103	0.145					0.128	0.225
					(0.740)	(0.650)					(0.623)	(0.395)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	80346	7978	7978	7978	7978	7978	80415	8705	8705	8705	8705	8705
pseudo-R^2	0.268	0.374	0.374	0.374	0.373	0.375	0.123	0.173	0.173	0.173	0.173	0.174
Chi-squared	29239.884	3990.04	3989.97	3986.98	3982.95	4002.14	13284.606	1900.50	1901.70	1898.79	1898.59	1905.19
F-test	-4.00e+04	-3341.85	-3341.89	-3343.38	-3345.40	-3335.80	-4.73e+04	-4533.00	-4532.40	-4533.86	-4533.96	-4530.66

Table 5: Estimation of control functions

The table shows the regression output of estimation of control functions to address endogeneity concerns. The dependent variables are each of the potentially endogenous entrenchment variables namely Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership. The independent variables are the entrenchment proxies and the state variables are dummy variables, which take on the value 1 if a firm is incorporated in that state and 0 otherwise. The control variables and time fixed effects are included. Refer to Appendix A for definitions and measures of all the variables in the model. The variance-covariance was estimated using Sandwich estimators with correction for clustering on firms. Numbers in parenthesis are the p-values associated with the null hypothesis that the coefficients equal zero. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	ln(Eindex)	Insiders on board	Insider ownership	Institutional ownership
Ln(Eindex)		-0.028***	-0.004	0.045***
		(0.000)	(0.538)	(0.000)
Insiders on board	-0.432***		0.173***	-0.139***
	(0.000)		(0.000)	(0.003)
Insider ownership	-0.024	0.059***		-0.052***
	(0.539)	(0.000)		(0.002)
Institutional ownership	0.212***	-0.042***	-0.046***	
	(0.000)	(0.005)	(0.003)	
California	-0.199***	0.025	0.020	-0.042*
	(0.000)	(0.201)	(0.342)	(0.065)
Texas	0.010	-0.000	0.005	-0.005
	(0.925)	(0.982)	(0.744)	(0.843)
Maryland	-0.304**	-0.027***	-0.034***	0.038
	(0.029)	(0.000)	(0.005)	(0.287)
Minnesota	0.005	-0.016*	0.018	-0.028
	(0.915)	(0.076)	(0.482)	(0.206)
Ohio	0.032	-0.009	-0.008	-0.042**
	(0.481)	(0.460)	(0.490)	(0.044)
Nevada	-0.235**	0.055*	0.061*	-0.019
	(0.014)	(0.081)	(0.095)	(0.680)
New York	-0.069	0.026*	-0.014	0.027
	(0.308)	(0.086)	(0.154)	(0.352)
Pennsylvania	0.081	-0.013	0.024	-0.017
	(0.299)	(0.428)	(0.140)	(0.571)
Control variables	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Observations	8946	8946	8946	8946
F statistic	43.415	13.636	8.796	28.986
p-value	0.000	0.000	0.000	0.000

Table 6: Test of endogeneity

The table provides the logit regression estimations of dividends (Columns 1-4) and share repurchases (Columns 5-8). The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise, and 1 for repurchasers and 0 otherwise. The proxies for managerial entrenchment are Ln(Eindex), Insiders on board, Insider ownership, and Institutional ownership. The control functions extracted from the output in Table 5 are included to test for potential endogeneity associated with each of the entrenchment proxies. The regressions include firm control variables and industry fixed effects. Refer to Appendix A for definitions and measures of all the variables in the model. Numbers in parenthesis are the p-values associated with the null hypothesis that the coefficients equal zero. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dividends				Share repurchases			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Eindex)	1.580***	-0.653***	-0.357***	-0.531***	-0.423	-0.283**	-0.084	-0.094
	(0.012)	(0.000)	(0.001)	(0.001)	(0.451)	(0.025)	(0.312)	(0.484)
Insiders on board	0.064	-14.362***	2.175***	0.082	-0.947**	-8.435***	0.153	-0.649
	(0.892)	(0.000)	(0.003)	(0.876)	(0.021)	(0.009)	(0.804)	(0.151)
Insider ownership	-0.826***	-0.038	-17.715***	-0.524**	-0.338*	0.137	-5.694*	-0.276
	(0.000)	(0.900)	(0.000)	(0.040)	(0.056)	(0.600)	(0.061)	(0.203)
Institutional ownership	-2.790***	-2.944***	-3.202***	3.881	0.139	-0.250	-0.201	1.002
	(0.000)	(0.000)	(0.000)	(0.159)	(0.521)	(0.262)	(0.390)	(0.664)
CF(ln(Eindex))	-1.850***				0.382			
	(0.004)				(0.502)			
CF(Insiders on board)		13.718***				7.712**		
		(0.000)				(0.016)		
CF(Insider ownership)			16.889***				5.379*	
			(0.000)				(0.077)	
CF(Institutional ownership)				-6.298**				-0.947
				(0.022)				(0.682)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7352	7978	7978	7978	8037	8705	8705	8705
pseudo-R^2	0.377	0.374	0.375	0.374	0.173	0.174	0.173	0.173
Chi-squared	3991.385	3996.281	4005.600	3988.059	1898.797	1904.103	1901.475	1898.512
F-test	-3341.178	-3338.730	-3334.070	-3342.841	-4533.854	-4531.201	-4532.514	-4533.996

Table 7: Baseline regressions with corrections for endogeneity

The table provides the output of the logit regression estimations of dividends (Columns 1&2) and share repurchases (Columns 3&4) with corrections for endogeneity. The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise; and 1 for repurchasers and 0 otherwise. The managerial entrenchment proxies include Ln(Eindex) by Bebchuk et al. (2009), Insiders on board, Insider ownership, and Institutional ownership. Difference premium measures catering effects. The regressions include the interactions between managerial entrenchment and catering effects: Ln(Eindex)×Difference premium, Insiders on board×Difference premium, Insider ownership×Difference premium, Institutional ownership×Difference premium. Firm control variables and industry fixed effects are included. Refer to Appendix A for definitions and measures of all the variables in the model. Numbers in parenthesis are the p-values associated with the null hypothesis that the coefficients equal zero. *** and ** indicate significance at the 1% and 5% levels, respectively.

	Dividends		Share repurchases	
	(1)	(2)	(3)	(4)
Ln(Eindex)	0.771	0.848	-1.880**	-1.926**
	(0.333)	(0.288)	(0.017)	(0.015)
Insiders on board	-0.690	-1.080	-12.205**	-12.176**
	(0.899)	(0.842)	(0.012)	(0.012)
Insider ownership	-15.395***	-15.794***	-1.817	-1.799
	(0.005)	(0.004)	(0.675)	(0.678)
Institutional ownership	-3.735	-3.612	-0.076	0.087
	(0.310)	(0.329)	(0.979)	(0.976)
Difference premium	1.917*	0.614	-1.085	-1.142
	(0.069)	(0.578)	(0.175)	(0.183)
Ln(Eindex) × Difference premium		0.613***		-0.196
		(0.001)		(0.208)
Insiders on board × Difference premium		1.614***		0.992**
		(0.004)		(0.041)
Insider ownership × Difference premium		0.528*		-0.279
		(0.082)		(0.294)
Institutional ownership × Difference premium		0.174		0.246
		(0.588)		(0.351)
CF(ln(Eindex))	-1.219*	-1.252*	1.508**	1.533**
	(0.089)	(0.081)	(0.033)	(0.031)
CF(Insiders on board)	3.017	3.866	11.219**	11.340**
	(0.542)	(0.435)	(0.011)	(0.011)
CF(Insider ownership)	14.756***	15.431***	2.135	2.046
	(0.004)	(0.003)	(0.604)	(0.620)
CF(Institutional ownership)	0.246	0.086	-0.106	-0.220
	(0.945)	(0.981)	(0.970)	(0.938)
Control variables	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Observations	7978	7978	8705	8705
pseudo-R^2	0.376	0.378	0.174	0.175
Chi-squared	4010.903	4033.891	1909.458	1916.459
F-test	-3331.419	-3319.925	-4528.523	-4525.023

Table 8: Alternative managerial entrenchment proxy

The table shows the logit regression estimations for dividend payments (Columns 1&2) and share repurchases (Columns 3&4). The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise; and 1 for repurchasers and 0 otherwise. The entrenchment index is the Ln(ATindex), which is the alternative takeover andex by Cremers and Nair (2005). Difference premium measures catering effects. The interaction terms are Ln(ATindex)×Difference premium, Insiders on board×Difference premium, Insider ownership×Difference premium, Institutional ownership×Difference premium. The regressions include firm control variables and industry fixed effects. Refer to Appendix A for definitions and measures of all the variables in the model. Numbers in parenthesis are the p-values associated with the null hypothesis that the coefficients equal zero. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dividends		Share repurchases	
	(1)	(2)	(3)	(4)
Ln(ATindex)	-0.601***	-0.566***	0.113	0.073
	(0.000)	(0.000)	(0.247)	(0.480)
Insiders on board	-0.777**	-0.576	-0.735**	-0.596*
	(0.039)	(0.142)	(0.022)	(0.074)
Insider ownership	-0.834***	-0.628***	-0.332*	-0.408**
	(0.000)	(0.008)	(0.060)	(0.037)
Institutional ownership	-2.410***	-2.345***	0.043	0.087
	(0.000)	(0.000)	(0.811)	(0.650)
Difference premium	1.586*	1.003	-0.919	-0.939
	(0.090)	(0.310)	(0.165)	(0.193)
Ln(ATindex) × Difference premium		0.054		-0.264*
		(0.760)		(0.087)
Insiders on board × Difference premium		1.161**		1.060**
		(0.036)		(0.029)
Insider ownership × Difference premium		0.504*		-0.263
		(0.092)		(0.318)
Institutional ownership × Difference premium		0.320		0.181
		(0.313)		(0.490)
Control variables	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Observations	7978	7978	8705	8705
pseudo-R^2	0.375	0.376	0.173	0.174
Chi-squared	4004.053	4013.130	1899.297	1907.571
F-test	-3334.844	-3330.305	-4533.604	-4529.467

Table 9: Separate dividend and repurchase premia

The table shows the logit regression estimations for dividend payments in Columns 1–4, and share repurchases in Columns 5–8. The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise; and 1 for repurchasers and 0 otherwise. Ln(Eindex) by Bebchuk et al. (2009), Insiders on board, Insider ownership, and Institutional ownership are the proxies for entrenchment. Dividend premium and repurchase premium measure catering effects associated with dividends and share repurchases, respectively. The regressions also include the interaction terms between each of the entrenchment proxies and catering effects. The regressions include firm control variables and industry fixed effects. Refer to Appendix A for definitions and measures of all the variables in the model. Numbers in parenthesis are the p-values associated with the null hypothesis that the coefficients equal zero. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dividends				Share repurchases			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Eindex)	-0.228**	-0.228**	-0.246**	-0.119	-0.050	-0.050	-0.025	-0.065
	(0.023)	(0.023)	(0.015)	(0.270)	(0.536)	(0.536)	(0.760)	(0.460)
Insiders on board	-0.746**	-0.746**	-0.784**	-0.218	-0.778**	-0.778**	-0.888***	-0.668*
	(0.048)	(0.048)	(0.038)	(0.608)	(0.016)	(0.016)	(0.006)	(0.071)
Insider ownership	-0.868***	-0.868***	-0.832***	-0.596**	-0.328*	-0.328*	-0.336*	-0.396*
	(0.000)	(0.000)	(0.000)	(0.016)	(0.063)	(0.063)	(0.061)	(0.057)
Institutional ownership	-2.387***	-2.387***	-2.390***	-2.391***	0.060	0.060	0.049	0.104
	(0.000)	(0.000)	(0.000)	(0.000)	(0.741)	(0.741)	(0.788)	(0.624)
Dividend premium	1.526		0.884		-1.001		-1.113	
	(0.137)		(0.409)		(0.161)		(0.148)	
Repurchase premium		-2.189		-1.415		1.437		1.465
		(0.137)		(0.343)		(0.161)		(0.166)
Ln(Eindex) × Dividend premium			0.284*				-0.184	
			(0.097)				(0.197)	
Insiders on board × Dividend premium			0.691				1.055**	
			(0.226)				(0.031)	
Insider ownership × Dividend premium			0.259				-0.250	
			(0.415)				(0.369)	
Institutional ownership × Dividend premium			0.213				0.198	
			(0.520)				(0.464)	
Ln(Eindex) × Repurchase premium				-0.272**				0.041
				(0.023)				(0.668)
Insiders on board × Repurchase premium				-1.172***				-0.231
				(0.007)				(0.535)
Insider ownership × Repurchase premium				-0.465*				0.129
				(0.071)				(0.551)
Institutional ownership × Repurchase premium				-0.001				-0.094
				(0.997)				(0.671)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7978	7978	7978	7978	8705	8705	8705	8705
pseudo-R^2	0.373	0.373	0.374	0.375	0.173	0.173	0.174	0.173
Chi-squared	3982.838	3982.838	3988.032	3999.362	1898.344	1898.344	1905.614	1899.313
F-test	-3345.451	-3345.451	-3342.854	-3337.189	-4534.080	-4534.080	-4530.445	-4533.595

Table 10: Alternative definition of difference premium

The table shows the logit regression estimations for dividend payments (Columns 1&2), and share repurchases (Columns 3&4). The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise; and 1 for repurchasers and 0 otherwise. The managerial entrenchment proxies include Ln(Eindex) by Bebchuk et al. (2009), Insiders on board, Insider ownership, and Institutional ownership. Difference premium (strict definition) measures catering effects. The regressions include the interactions between managerial entrenchment and catering effects: Ln(Eindex) ×Difference premium, Insiders on board×Difference premium, Insider ownership×Difference premium, Institutional ownership×Difference premium. The regressions include firm control variables and industry fixed effects. Refer to Appendix A for definitions and measures of all the variables in the model. Numbers in parenthesis are the p-values associated with the null hypothesis that the coefficients equal zero. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dividends		Share repurchases	
	(1)	(2)	(3)	(4)
Ln(Eindex)	-0.228**	0.017	-0.050	-0.093
	(0.023)	(0.888)	(0.536)	(0.352)
Insiders on board	-0.746**	0.058	-0.778**	-0.672
	(0.048)	(0.904)	(0.016)	(0.109)
Insider ownership	-0.868***	-0.599**	-0.328*	-0.270
	(0.000)	(0.024)	(0.063)	(0.218)
Institutional ownership	-2.387***	-2.675***	0.060	0.278
	(0.000)	(0.000)	(0.741)	(0.221)
Difference premium	15.120	13.519	-9.921	-10.584
	(0.137)	(0.178)	(0.161)	(0.139)
Ln(Eindex) × Difference premium		0.782***		-0.155
		(0.001)		(0.414)
Insiders on board × Difference premium		2.177***		0.263
		(0.006)		(0.703)
Insider ownership × Difference premium		0.727*		0.164
		(0.094)		(0.656)
Institutional ownership × Difference premium		-0.812*		0.620
		(0.080)		(0.100)
Control variables	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Observations	7978	7978	8705	8705
pseudo-R^2	0.373	0.375	0.173	0.173
Chi-squared	3982.838	4007.830	1898.344	1901.878
F-test	-3345.451	-3332.955	-4534.080	-4532.313

Table 11: Catering, corporate governance and level of payout

The table shows the OLS and tobit regression estimations of the level of dividend payments (Columns 1(OLS)&2(Tobit)), share repurchases (Columns 3(OLS)&4(Tobit)), and total payout (Columns 5(OLS)&6(Tobit)). The dependent variable is a dummy variable equal to 1 for dividend payers and 0 otherwise; 1 for repurchasers and 0 otherwise; and 1 for positive nonzero total payout and 0 otherwise. The managerial entrenchment proxies include Ln(Eindex) by Bebchuk et al. (2009), Insiders on board, Insider ownership, and Institutional ownership. Difference premium measures catering effects. The regressions include the interactions between managerial entrenchment and catering effects: Ln(Eindex)×Difference premium, Insiders on board×Difference premium, Insider ownership×Difference premium, Institutional ownership×Difference premium. The regressions include firm control variables and industry fixed effects. Refer to Appendix A for definitions and measures of all the variables in the model. Numbers in parenthesis are the p-values associated with the null hypothesis that the coefficients equal zero. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	Dividends		Share repurchases		Total payout	
	OLS	Tobit	OLS	Tobit	OLS	Tobit
	(1)	(2)	(3)	(4)	(5)	(6)
Ln(Eindex)	-0.002***	-0.002**	0.002	0.002	0.000	0.000
	(0.002)	(0.014)	(0.222)	(0.190)	(0.889)	(0.885)
Insiders on board	-0.003	-0.003	-0.011	-0.011	-0.014*	-0.014*
	(0.449)	(0.398)	(0.129)	(0.115)	(0.096)	(0.079)
Insider ownership	-0.011***	-0.011***	0.001	0.001	-0.011	-0.011**
	(0.000)	(0.000)	(0.910)	(0.866)	(0.109)	(0.024)
Institutional ownership	-0.018***	-0.018***	0.005	0.005	-0.014***	-0.014***
	(0.000)	(0.000)	(0.245)	(0.240)	(0.003)	(0.002)
Difference premium	-0.006	-0.006	0.004	0.004	-0.003	-0.003
	(0.366)	(0.285)	(0.860)	(0.784)	(0.913)	(0.853)
Ln(Eindex) × Difference premium	0.007***	0.007***	0.005	0.005	0.013***	0.013***
	(0.000)	(0.000)	(0.115)	(0.105)	(0.000)	(0.000)
Insiders on board × Difference premium	0.001	0.001	0.027***	0.027***	0.025**	0.025**
	(0.908)	(0.881)	(0.005)	(0.006)	(0.018)	(0.021)
Insider ownership × Difference premium	0.004	0.004	0.015**	0.015***	0.020***	0.020***
	(0.115)	(0.125)	(0.028)	(0.006)	(0.008)	(0.001)
Institutional ownership × Difference premium	0.005	0.005*	0.002	0.002	0.006	0.006
	(0.177)	(0.059)	(0.665)	(0.651)	(0.365)	(0.318)
Market to book	0.003***	0.003***	0.007***	0.007***	0.010***	0.010***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash ratio	0.005*	0.005**	0.026***	0.026***	0.031***	0.031***
	(0.091)	(0.025)	(0.000)	(0.000)	(0.000)	(0.000)
Free cash flow	0.074***	0.074***	0.108***	0.108***	0.191***	0.191***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Ln(Assets)	-0.001***	-0.001***	0.002***	0.002***	0.001*	0.001*
	(0.005)	(0.000)	(0.000)	(0.000)	(0.100)	(0.062)
Capex	-0.022***	-0.022***	0.005	0.005	-0.019	-0.019
	(0.005)	(0.002)	(0.769)	(0.726)	(0.351)	(0.272)
Profitability	0.005	0.005	0.087***	0.087***	0.088***	0.088***
	(0.647)	(0.237)	(0.000)	(0.000)	(0.000)	(0.000)
Leverage	0.010***	0.010***	0.024***	0.024***	0.035***	0.035***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Stock returns	-0.091**	-0.091***	-0.137	-0.137*	-0.227	-0.227***
	(0.029)	(0.009)	(0.309)	(0.076)	(0.157)	(0.007)
Systematic risk	-0.030***	-0.030***	-0.037**	-0.037**	-0.068***	-0.068***
	(0.000)	(0.000)	(0.020)	(0.035)	(0.000)	(0.000)
Idiosyncratic risk	-0.037***	-0.037***	-0.038**	-0.038**	-0.076***	-0.076***
	(0.000)	(0.000)	(0.017)	(0.021)	(0.000)	(0.000)
Firm age	0.004***	0.004***	-0.002**	-0.002***	0.002**	0.002**
	(0.000)	(0.000)	(0.022)	(0.010)	(0.036)	(0.020)
Options ratio	-0.267***	-0.267***	0.099	0.099	-0.188	-0.188
	(0.000)	(0.000)	(0.667)	(0.470)	(0.418)	(0.208)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8946	8946	8946	8946	8946	8946
Adjusted R^2	0.296		0.234		0.318	
pseudo-R^2		-0.087		-0.103		-0.161
Chi-squared		3373.095		2623.113		3657.122
F-test	21076.795	21076.795	13986.444	13986.444	13187.513	13187.513