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## How relevant is dividend policy under low shareholder protection?

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### ABSTRACT

This paper contributes to the debate on why firms pay lower dividends in the stakeholder-oriented governance regimes of Continental Europe than in the market-oriented Anglo-American world. We examine the stakeholder-oriented regime of the Netherlands, before sweeping governance reforms in 2004 defused some major anti-shareholder provisions widely employed by Dutch firms. We find that (i) the payouts of Dutch firms are low due to their habitual use of anti-shareholder provisions, and (ii) dividends and shareholder control are complementary rather than substitute mechanisms in mitigating agency concerns. We find no evidence that controlling shareholders would allow firms to relax their dividend behavior. On the contrary, they demand higher rather than lower dividends to counterbalance the negative impact of anti-shareholder provisions. The highest dividends are paid by firms controlled by corporate insiders, along with institutional investors with superior monitoring skills and incentives. These findings are unlikely to be specific to the Netherlands and could possibly be extended to other stakeholder-oriented regimes.

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## 1. Introduction

Why firms pay lower dividends, all else equal, in the stakeholder-oriented governance regimes of Continental Europe than in the market-oriented Anglo-American world, remains a major puzzle of the comparative corporate governance literature (He et al., 2017; Fatemi and Bildik, 2012; Pinkowitz et al., 2007). Previous studies observe the concentrated ownership structures of Continental European firms, and propose two alternative explanations rooted in agency theory. On one hand, Goergen et al. (2005) view dividends and shareholder control as substitute control devices. Then, dividends should be lower in the presence of a large controlling shareholder, since they need not constitute an additional control device and would lead to unnecessary liquidity constraints. On the other, Gugler and Yurtoglu (2003) argue that low dividends may also be explained by the agency conflict between the controlling shareholder and minority shareholders. Then, if the incumbent shareholder is sufficiently powerful, it withholds dividends to expropriate minority investors for its private benefit.

This paper contributes to the debate on the relationship between dividends and shareholder control, by examining whether firms' dividend behavior is affected by their use of anti-shareholder provisions. The argument that Continental European firms pay low dividends because they have controlling shareholders is clearly incomplete. It is well-known that firms in stakeholder-oriented governance systems often adopt anti-shareholder devices which violate the one-share-one-vote rule

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(Francis et al., 2011). This can be symptomatic of their prioritization of stakeholder interests over shareholder value, and may also be the reason behind their low dividend payouts. If this is the case, it is difficult to see why the presence of large shareholders would make dividends redundant as a control device. On the contrary, large shareholders should demand higher rather than lower dividends, to prevent being expropriated and ensure greater focus on shareholder value. This argument implies that dividends and shareholder control are not substitute but complementary control devices.

The stakeholder-oriented governance regime of the Netherlands before major governance reforms in 2004 is a natural choice for the investigation of these issues (Cziraki et al., 2014). Dutch firms are well-documented to pay low dividends and have concentrated ownership structures (He et al., 2017; Fatemi and Bildik, 2012; La Porta et al., 2000). At the same time, they tend to impose major restrictions on shareholder control. Firstly, they often adopt poison pills (known as preference shares) and golden shares (priority shares), or replace ordinary voting shares with tradable depository receipts (certificates). Secondly, once they reach a certain size, they must adopt an institutional form called the structured regime, which formally strips shareholders of many of their rights. In a bid to strengthen shareholder rights, the 2004 changes in the Dutch Corporate Governance Code and enactment of the Structured Regime Reform Act defused much of the power of these anti-shareholder provisions. Nonetheless, their occurrence remains common with >90% of Dutch listed firms restricting shareholder control one way or another (e.g. Shearman & Sterling, 2007).

We use an extension of Lintner's (1956) partial adjustment model and random-effects panel probit regressions over the period 1996–2004 to investigate whether anti-shareholder provisions affect Dutch firms' dividend behavior, and whether accounting for these challenges the substitutability of dividends and shareholder control as alternative control devices. The general patterns of Dutch dividend behavior is similar to those reported for Germany and other Continental European countries (Andres et al., 2009; Ferris et al., 2009). Payouts tend to be low and fairly flexible, and we find them to be unrelated to reported earnings that He et al. (2017) find highly managed in the Netherlands. Instead, Dutch firms seem to formulate dividend decisions based on operating cash flows. The dividend dynamics show no statistical relationship with agency problems as measured by firm size, leverage, and investment opportunities (Fama and French, 2001). Overall, Dutch firms appear to interpret dividend policy flexibly, and only to a limited extent do they pay dividends to disgorge free cash flow. This may owe to the fact that many firms have large controlling shareholders, which makes dividends redundant as an agency control device. However, it is also likely that firms restrict shareholder control to an extent that shareholders are too weak to enforce optimal payout policies.

Our empirical results support this latter argument. Of the equity-based anti-shareholder devices, only preference shares have an adverse impact on dividend behavior. However, >70% of the sample firms use preference shares to restrict shareholder control. Firms using preference shares both have lower target payout ratios and engage in less dividend smoothing. This is unsurprising, since these instruments dilute shareholders' voting and cash flow rights simultaneously, to the benefit of management-friendly third parties.

We also find that firms that operate under the structured regime, including Dutch multinationals that voluntarily retain it despite being exempted, pay lower dividends and do less dividend smoothing. Firms that must only adopt a mitigated form of the regime because they are majority-owned by a foreign shareholder, show signs of being tightly monitored and do not relax their dividend behavior. Firms under the full and voluntary regimes, which constitute nearly 60% of the sample firms, reduce their target payout both *ceteris paribus*, and because they are more likely to use preference shares.

In light of these results, it is unsurprising that we find no evidence that controlling shareholders would allow firms to relax their dividend policy further. Once anti-shareholder provisions are accounted for, the target payout ratio and extent of dividend smoothing increase rather than decrease in the equity share of the largest shareholder. There is also little indication that dividend behavior would be driven by the agency conflict between large shareholders and minority shareholders. In other words, firms relax their dividend behavior because of their habitual use of anti-shareholder provisions, and the presence of a strong main shareholder actually forces them to increase their payouts to more optimal levels.

The relationship between the dividend dynamics and the identity of the large shareholder lends further support to this argument. Firms' target payout ratios are significantly higher when they are controlled by institutional investors with superior monitoring skills and incentives. Share ownership by corporate insiders such as management and supervisory board members also leads to increased payout. Overall, these results suggest that dividends and shareholder control act as complementary rather than substitute control devices. This finding is unlikely to be specific to the Netherlands, and could thus be extended to other stakeholder-oriented governance regimes.

The remainder of the paper is set out as follows. In Section 2 we provide an overview of the background literature, describe the Dutch governance regime, and formulate testable hypotheses. A description of our sample and the methodology employed is provided in Section 3. The empirical results are discussed in Section 4. Finally, Section 5 allows for some concluding remarks.

## 2. Agency problems, payout policy, and the implications of the Dutch governance system

### 2.1. The agency control function of payout policy

Corporate payout is generally viewed as a control device that helps reduce managerial discretion, and as such is part of the firm's optimal monitoring/bonding package (Rozeff, 1982). Jensen (1986) describes how payout reduces free cash flow

that managers may otherwise divert for personal use or to fund unprofitable projects. Easterbrook (1984) adds that regular dividend payments may force management to raise external capital for new projects, inflicting market discipline on the firm. Dividends and share repurchases are alternative mechanisms in mitigating free cash flow concerns. However, dividends impose a more permanent cash flow commitment; managers believe that markets attach a premium to consistent dividend payers and interpret dividend cuts as a negative signal (Brav et al., 2005). Jiang et al. (2013) show that the substitution of dividends and share repurchases depends on time-varying dividend and repurchase premia.

The fact that firms enter into dividend smoothing has been well-documented since Lintner (1956) and Fama and Babiak (1968). Fudenberg and Tirole (1995) attribute dividend smoothing to the private control benefits of management. Michaely and Roberts (2012) show that public firms smooth dividends more than do private firms, implying that the scrutiny of public markets plays a central role. Marsh and Merton (1987) and DeAngelo and DeAngelo (1990) observe that managers try to avoid dividend cuts, and prefer to leave dividends unchanged if a dividend increase would likely have to be reversed in the future. Accordingly, Jagannathan et al. (2000) show that firms with high operating cash flows tend to pay dividends, while those with higher non-operating or more volatile operating cash flows resort more to share repurchases. Leary and Michaely (2011) show that dividend smoothing is most common among firms that are not financially constrained, face low levels of asymmetric information, and are most susceptible to agency conflicts. Guttman et al. (2010) add that firms follow a partially pooling dividend policy, such that the same dividends are paid for a range of different earnings realizations. Grennan (2019) find that dividend policies also have peer effects, such that firms increase dividends and speed up the time taken to make a dividend change in response to peer changes.

The control function of corporate payout is evidently linked to the severity of the manager-shareholder conflict. Agency costs are assumed to be lowest in small firms with abundant growth prospects (Fama and French, 2001). In these firms, high payouts may lead to excessive reliance on external financing, which can exacerbate underinvestment risk (Myers, 1977) and harm the incumbent shareholders (Goergen et al., 2005). Agency problems may also be alleviated by alternative mechanisms that reduce the marginal control benefits of corporate payout. Fluck (1999) develops a model where dividends depend on the effectiveness of outside shareholders in disciplining management. The control function of payout may also be substituted by leverage and managerial ownership (Jensen et al., 1992), though the desired relationship with the latter is non-monotonic due to managerial entrenchment concerns (Fenn and Liang, 2001; Morck et al., 1988; Schooley and Barney, 1994).

Regarding the monitoring effectiveness of outside shareholders, several issues warrant consideration. Firstly, shareholders have better incentives and ability to monitor management when they hold large, concentrated equity blocks (Grossman and Hart, 1980). This suggests that when strong shareholders exert their power, dividends need not constitute an additional control device and may lead to unnecessary liquidity constraints and underinvestment risk (Chae et al., 2009; Goergen et al., 2005). Accordingly, cross-country studies show that in the stakeholder-oriented governance regimes of Continental Europe where ownership structures are more concentrated, payouts are generally lower and more flexible than those in the market-oriented Anglo-American world (Fatemi and Bildik, 2012; He et al., 2017; La Porta et al., 2000). Country-level studies also show some evidence in this regard, including Rozeff (1982) and Moh'd et al. (1995) for the US and Renneboog and Trojanowski (2011) for the UK.

Secondly, controlling shareholders may be efficient monitors, but like management, they may also keep payout levels low to expropriate minority shareholders. Expropriation by insider shareholders is more relevant an issue in Continental Europe where the legal protection of minority shareholders is low and firms often adopt anti-shareholder devices that violate the one-share-one-vote rule (Bae et al., 2012; Byrne and O'Connor, 2017; Francis et al., 2011; Kaprielyan and Brady, 2018; La Porta et al., 2000). Faccio et al. (2001) argue that rational investors may anticipate expropriation and demand higher dividends from firms that are more likely to expropriate them. Still, minority shareholders may only be able to force higher payouts if they are sufficiently powerful or if firms have reputational needs to access capital markets (Bulow and Rogoff, 1989). Accordingly, Faccio et al. (2001) find that in Continental Europe, payouts are higher when multiple large shareholders are present. For Germany, Gugler and Yurtoglu (2003) report that payout levels decrease in the power of the largest shareholder but increase in the power of the second largest shareholder.

And thirdly, payout levels have been shown to be affected by the identity of the controlling shareholder because (i) some shareholder classes may be better monitors than others; and (ii) the payout policies they enforce can reflect their specific payout preferences. Financial institutions are often credited with having a comparative advantage in monitoring efficiency (Grossman and Hart, 1980; Shleifer and Vishny, 1986). This translates into more flexible payout policies in institutionally controlled firms (Goergen et al., 2005; Renneboog and Trojanowski, 2011; Truong and Heaney, 2007). Nonetheless, it has been shown that institutional investors force firms with higher expected agency costs to pay more dividends (Crane et al., 2016). They also tend to expect at least some payout, either because they enjoy a preferential tax treatment or due to tax asset-liability management considerations (Allen et al., 2000; Grinstein and Michaely, 2005; Renneboog and Trojanowski, 2006 and 2011).

Previous studies find that payout levels are lowest in firms controlled by individuals, such as Gugler (2003) for Austria, Renneboog and Trojanowski (2006) for the UK and Gonzalez et al. (2017) for Latin America. Gugler (2003) argues that individuals are better able and incentivized to monitor firms directly<sup>1</sup>. Attig et al. (2016) and Mulyani et al. (2016) find that payout

<sup>1</sup> The preference of retail investors for dividends, as documented by Baker and Wurgler (2004) and Graham and Kumar (2006), is unlikely to apply to wealthy individuals with concentrated shareholdings.

levels are lowest for family firms in East Asia, and that controlling families have incentives to expropriate more firm resources during crises. Gugler (2003) finds that payouts are highest and smoothed the most in government-controlled firms. He attributes this to a double principal-agent problem, whereby steady dividend flows reflect greater managerial discretion to defend incumbency rents, and the efforts of ill-monitored politicians, to whom the managers are accountable, to keep their electorate happy. Gugler (2003) and Renneboog and Trojanowski (2006) characterize the dividend behavior of firms controlled by other non-financial firms as relatively normal. Gugler (2003) argues that these results are consistent with the expected 'ranking' of shareholder types in how efficiently they mitigate informational asymmetries and managerial agency costs. It is then surprising that managerial ownership, which Jensen et al. (1992) regard as an alternative control device, does not have a meaningful impact on dividend policy either, as shown by Fenn and Liang (2001) for the US and Renneboog and Trojanowski (2006) for the UK.

## 2.2. Payout policy in the Netherlands: Background and hypotheses

The Dutch model of corporate governance, known as the 'polder model', is a stakeholder-oriented insider system. The essence of the model is consensus seeking among the firm's various stakeholders, particularly between employers and employees<sup>2</sup>. The model complies with Franks and Mayer's (2001) definition of insider systems: the number of listed firms is relatively small, share ownership is highly concentrated, and takeover activity is minimal. Firms are also allowed considerable reporting discretion; enforcement is fairly weak and tax accounting is formally separate from financial accounting.

Dutch firms can use three equity instruments that violate the one-share-one-vote rule. Preference shares are Dutch-style poison pills that carry full voting rights. They are shares issued under takeover threat to a friendly trust office or outside investor. The buyer pays only 25% of the nominal capital upfront, and the issue size can be up to 50% or even 100% of the firm's outstanding capital. Priority shares are similar to French or British golden shares. They carry special voting privileges over issues such as merger approval, public offerings, the appointment of board members, charter amendments, and liquidation. They are usually sold to a friendly foundation. Certificates are tradable depository receipts. They are issued in exchange for ordinary voting shares, which are then deposited with the issuer, the administration office (Stichtingskantoor). Before the 2004 governance reforms, the management-friendly administration office took over all voting rights on the withdrawn shares and usually took a voting majority.

Importantly, the Dutch governance regime also imposes institutionalized restrictions on shareholder control. Once firms reach a certain size, they must switch to an institutional form called the structured (structuur) regime. The structured regime is compulsory for firms once (i) their subscribed capital exceeds €11.4 million, and (ii) they employ at least 100 employees and have a legally installed workers' council in place. Its immediate objective is to give the workers' council a role on the supervisory board. However, it also strips shareholders of many of their powers to the benefit of the supervisory board. The supervisory board's powers include the election of management and the supervisory board itself (by way of co-optation). Shareholders may still vote on dividend policy and takeovers. Relations between the management board and the supervisory board tend to be cordial, with the latter's members are elected from main financiers, customers or business partners (De Jong et al., 2007). Firms under the structured regime have been shown to smooth earnings more actively, report more conservatively and be less likely to meet or beat analyst expectations (Cuijpers et al., 2005).

The law establishes certain exemptions from the full adoption of the structured regime. Firms majority-owned by foreign entities can adopt a mitigated form of the regime. This model maintains co-optation but allows shareholders to vote on the annual accounts and appointment of management. Firms are exempted entirely if they have >50% of their employees abroad or they are majority-owned by a Dutch multinational under the structured regime. Still, most firms that are exempt retain a weaker form of the regime voluntarily, because full elimination requires a statute amendment that the supervisory board can block.

De Jong et al. (2005) find that the above anti-shareholder provisions, including the full and voluntary forms of the structured regime, have significantly negative valuation effects as measured by the market-to-book ratio. In most cases, Dutch firms use the various provisions cumulatively, thereby imposing severe constraints on shareholder control. Accordingly, annual shareholder meetings are met with a great deal of apathy in terms of attendance, and management-sponsored proposals, including recommendations on payout policy, are rarely contested (De Jong et al., 2006).

Groenewald (2005) and Cziraki et al. (2014) describe the major corporate governance reforms introduced in 2004 to shift more power to shareholders. Firstly, the new Dutch Corporate Governance Code (Tabaksblat Code) required that the holders of certificates be granted voting rights, encouraged proxy voting, facilitated shareholder communication, and called for a more active role of institutional investors in general meetings. The code also capped the number of supervisory board memberships that management and supervisory board members could assume at other companies. Secondly, the Structured Regime Reform Act reduced the powers of the supervisory board and increased shareholder power in other respects. It prescribed shareholder approval for the annual accounts, remuneration of the management and supervisory boards, sell-side and significant buy-side mergers and acquisitions, as well as joint ventures. Shareholders and certificate holders were permitted to place proposals on the agenda of general meetings. Shareholders and the workers' council were permitted

<sup>2</sup> The term 'polder model' has been used to describe the (slow) decision making process in Dutch politics, where all parties have to be heard. Governance in the Netherlands is characterized by the tri-partite co-operation of employers' organizations, labor unions and the government in the Social Economic Council. Despite criticism, this model has often helped to diffuse labor conflicts and avoid strikes.

to nominate supervisory board members before nominations by the board itself. Shareholders were further permitted to reject board nominations with one-third of the issued capital and dismiss the entire board with a majority vote.

### 2.2.1. The impact of shareholder power restrictions on dividend behavior

How the payout patterns of Dutch firms are affected by the various anti-shareholder provisions should naturally be subject to variation. Of the equity instruments, preference shares should have the biggest impact on dividend behavior. An important attribute of these securities is that they simultaneously dilute the voting and cash flow rights of common shareholders, leaving them with little leverage to force optimal payouts. The holders of preference shares are unlikely to demand high dividends, both because they are management-friendly and because preference shares are cheap to acquire. Therefore, *we hypothesize that firms using preference shares are less likely to pay dividends, and the dividends they pay are relatively low and unsmoothed*. In comparison, priority shares should have a less pronounced effect. These securities may relax pressure on management to reimburse shareholders, but otherwise obstruct shareholder control over specific issues unrelated to dividend policy. Nonetheless, *we hypothesize that firms using priority shares are less likely to pay dividends, and the dividends they pay are relatively low and unsmoothed*. Finally, firms issuing certificates should actually be incentivized to pay and smooth dividends. Before the 2004 governance reforms, these instruments carried full cash flow rights but no voting rights. Therefore, *we hypothesize that firms using certificates are more likely to pay dividends, and the dividends they pay are relatively high and smoothed*.

We must also distinguish the various forms of the structured regime in how they affect dividend behavior. We have mentioned that even before the 2004 reforms, the structured regime allowed shareholders to vote on dividend policy. However, payout recommendations are typically put to vote in conjunction with other management-sponsored proposals and are almost always passed. Overall, this dictates that under the structured regime, payouts should be relatively low and unsmoothed. Still, only under the full and voluntary forms of the regime are agency problems expected to be significantly amplified. Under the mitigated regime, management remains monitored because (i) shareholders maintain the right to vote on management appointments and (ii) the foreign majority owner has powerful monitoring incentives. Then, dividend payouts may be low and unsmoothed, but this may simply reflect the controlling shareholder trading off free cash flow concerns against the risk of underinvestment. Overall, *we hypothesize that firms under the structured regime are less likely to pay dividends, and the dividends they pay are relatively low and unsmoothed. The impact is greatest under the full and voluntary forms of the regime, and relatively smaller under the mitigated regime*.

### 2.2.2. The impact of ownership structure on dividend behavior

A complementary prediction on dividend policy, already made for the mitigated structured regime, is that dividends are low and flexible in the presence of a strong incumbent shareholder with powerful monitoring incentives. This argument assumes that when alternative agency mechanisms are at work, dividends need not constitute an additional control device and may simply lead to unnecessary liquidity constraints and underinvestment risk. However, there is certainly a risk that the incumbent shareholder keeps payouts low to expropriate minority shareholders to its private benefit. Then, strong minority shareholders may actually force higher payouts in order to mitigate expropriation risk. Therefore, *we hypothesize that the probability of dividend payouts and the level and smoothing of dividends (i) decreases in the equity stake of the largest shareholder and (ii) increases in the equity stake of the second largest shareholder*.

How the identity of the major shareholders affects dividend behavior is typically motivated by previous studies with (i) clientele arguments and (ii) the monitoring skills and effectiveness of the various shareholder classes. For the Netherlands, it is difficult to make predictions on tax-based payout preferences, because most legal entities enjoy a preferential tax treatment on dividend income, the tax rules tend not to discriminate between dividends and realized capital gains. Notably, Dutch non-financial firms and holding companies pay no tax on dividends paid by subsidiaries if they comply with certain substantial holding rules. The tax rules applicable to major individual investors are also favorable, because once their equity interest reaches 5%, they pay a flat tax of 25%.

With the limited relevance of tax-based payout preferences, the link between dividend behavior and the identity of large shareholders should be based on each shareholder class's monitoring skills and individual cash flow needs. To the extent that dividends and shareholder control are substitute mechanisms in mitigating agency concerns, we expect the following. Firstly, *we hypothesize that firms controlled by financial institutions smooth dividends less, but are more likely to be dividend payers and the dividends they pay are relatively high*. As has been discussed, institutional investors are normally credited with having a comparative advantage in monitoring efficiency, but they otherwise expect regular cash flow streams.

Secondly, *we hypothesize that firms controlled by corporate insiders, individual investors, holding companies and non-financial firms are less likely to pay dividends, and the dividends they pay are relatively low and unsmoothed over time*. It is well-documented that insider ownership reduces the agency problem arising from the separation of ownership and control. Previous studies also show that agency concerns are mitigated efficiently by wealthy private individuals due to their powerful monitoring incentives. Finally, holding companies and non-financial firms tend to hold their subsidiaries closely, often in pyramidal structures, and be actively involved in their management.

Finally, *we hypothesize that firms controlled by the government and foundations are more likely to be dividend payers, and the dividends they pay are relatively high and smoothed over time*. The dividend behavior of government-controlled firms should be driven by the double principal-agent problem identified earlier. The relationship between dividends and foundations is not examined by previous studies, but these investors are typically assumed to have weak monitoring skills and incentives.



### 3. Data and methodology

#### 3.1. Descriptive statistics

Our sample covers Dutch firms listed on Euronext Amsterdam and the new market NMAX over the period between 1996 and 2004. We exclude banks, insurance companies and other financial firms (SIC codes 6000–6900), as well as utilities (SIC codes 4900–4949). Finally, we retain only those firms that are present for at least three years of the sample period in the *Worldscope Disclosure dataset* and the yearly stock exchange guide *Handboek Nederlandse Beursfondsen*. The final sample contains 150 firms with a total of 962 firm years, representing more than two thirds of Dutch listed non-financial firms and around 90% of the market capitalization of the Amsterdam exchanges. Accounting data on each firm is gathered from *Worldscope*. To determine whether the firms operate under a particular type of the structured regime and whether they use anti-shareholder devices, we consult the Kluwer book *Monitoring Corporate Governance in Nederland 1998*. For firms not included in this volume, we consult the annual reports.

[Table 1](#) summarizes the financial characteristics of the sample firms in constant 2004 prices. The results show that the market value of the median firm is relatively high at €269.8 million. There is also considerable skewness in firm size; the mean market value is €2.8 billion, driven by multinationals such as Royal Dutch Shell, Philips and AkzoNobel. The mean and median book values of total assets are €2.0 billion and €274.1 million, respectively. While the average market-to-book ratio is 3.64, the median is considerably lower at 1.89. The typical firm is reasonably profitable with a net income of €10.9 million and a return on assets (ROA) of 5.19%. The median operating cash flow is €21.6 million. The sample firms tend to be moderately levered, with the median debt-to-assets ratio at 0.23. Dividends are paid in 758 of the 962 firm years, and typically amount to €5.4 million.

[Table 2](#) examines dividend behavior in greater detail. The proportion of dividend payers declines over the sample period, from 88.0% in 1996 to 74.4% in 2004. The payout ratios of the dividend payers follow a cyclical pattern. During the 1996–2000 stock market rally, dividends as a percentage of net income decline from an average 34.0% to 19.5%. Thereafter, they pick up again notwithstanding a temporary fall in 2002, reaching 41.1% in 2004. These patterns are not unlike those reported for the US ([Fama and French, 2001](#); [Julio and Ikenberry, 2004](#)). Dividends as a percentage of operating cash flows exhibit similar trends but are more stable. Over the whole sample period, dividend payers pay an average 28.7% of their net income and 15.2% of their operating cash flows. For the aggregate sample of payers and non-payers, the same figures are 17.5% and 11.4%, respectively.

[Table 3](#) illustrates the use of shareholder power restrictions by the sample firms. Of the 150 firms, only 14 impose no limitations on shareholder rights. Nearly two thirds operate under the structured regime; 65 under the full regime, 8 under the mitigated regime, while 24 retain the regime voluntarily. A total of 126 firms employ anti-shareholder equity instruments, and 70 use more than one. The use of preference shares (1 0 7) is the most common, followed by certificates (46) and priority shares (43)<sup>3</sup>. Firms under each form of the structured regime are more likely to use and combine these securities.

#### 3.2. Share ownership

We hand-collect ownership data from the various editions of *Handboek Nederlandse Beursfondsen*. As these handbooks were published bi-yearly prior to 1999, we assign ownership changes to the correct year using information from the annual reports. Equity block ownerships exceeding 5% are classified into eight mutually exclusive categories: (i) corporate insiders (management and supervisory board members and their families); (ii) financial institutions (banks, insurance firms, investment and pension funds, venture capitalists); (iii) independent individuals; (iv) non-financial firms; (v) the government; (vi) foundations; (vii) holding companies; and (viii) administration offices. Individual and institutional investors are classified into the various categories based on *Handboek Nederlandse Beursfondsen*, the *Amadeus* database and annual reports.

To approximate the influence of the various shareholder classes on corporate decision making, we follow [Crespi and Renneboog's \(2003\)](#) approach and construct a two-stage voting game. In the first stage, all shareholders of a particular type (e.g. all financial institutions) form a coalition. In the second stage, such coalitions participate in a voting game where the payout policy is decided upon. The two-stage approach advocated here is relevant due to similarities in the payout preferences and monitoring efficiency of investors of the same type.

We use two alternative measures of shareholder influence: ownership concentration and Banzhaf power indices ([Banzhaf, 1965](#)). Banzhaf indices are voting power measures obtained by modeling voting games with policy-seeking motives (I-power). In effect, they capture the ability of shareholders to win voting games on dividend policy either by themselves or by forming voting coalitions. Previous empirical research has often used Shapley values to measure shareholder power ([Shapley and Shubik, 1954](#); [Milnor and Shapley, 1978](#)). However, [Leech \(2002\)](#) argues that Shapley values are inappropriate in the context of shareholder voting, because they model voting games with the prize being the power itself (P-power).<sup>4</sup> As the shareholder voting games can be regarded as oceanic, we employ a generalization of the Banzhaf value proposed by [Dubey and Shapley \(1979\)](#). Under some regularity conditions, such oceanic Banzhaf indices are calculated by taking

<sup>3</sup> The use of the three equity instruments is not correlated significantly, except a very mild negative correlation between priority shares and certificates.

<sup>4</sup> A detailed discussion about the differences in I- and P-power and the most appropriate voting games can be found in [Felsenthal and Machover \(1998\)](#).

**Table 1**  
Descriptive characteristics.

Variables	N	Mean	Median	St. dev.
Firm size (€ millions)	962	2846.8	269.8	13380.7
Book value of assets (€ millions)	962	2041.8	274.1	7928.6
Debt-to-assets ratio	962	0.25	0.23	0.19
Market-to-book ratio	962	3.64	1.89	9.14
Operating cash flow (€ millions)	962	209.0	21.6	1012.0
Net income (€ millions)	962	63.9	10.9	765.2
Return on assets (ROA)	962	3.36%	5.19%	14.54%
Dividend payout (€ millions)	962	45.4	2.5	317.4

Note: Statistics are computed for the pooled sample of 962 firm years, measured at year-end and expressed in constant 2004 prices. Firm size is the sum of the market value of equity and the book value of debt. The debt-to-assets ratio is the book value of debt divided by the book value of assets. The market-to-book ratio is the ratio of the market value of equity to the book market of equity.

**Table 2**  
Dividend payout ratios.

Year	<i>All firms</i>			<i>Dividend payers only</i>			<i>Dividend payers (of all firms)</i>
	N	% of net income	% of operating cash flow	N	% of net income	% of operating cash flow	
1996	100	30.7%	16.5%	88	34.0%	17.4%	88.0%
1997	118	22.0%	12.3%	103	27.4%	14.4%	87.3%
1998	124	18.0%	11.8%	102	23.1%	14.9%	82.3%
1999	119	15.2%	10.9%	93	20.3%	14.6%	78.2%
2000	112	11.4%	8.6%	85	19.5%	11.7%	75.9%
2001	106	19.8%	13.4%	80	38.4%	20.0%	75.5%
2002	98	14.2%	9.6%	73	31.8%	15.3%	74.5%
2003	95	13.8%	9.8%	67	36.1%	12.9%	70.5%
2004	90	21.5%	13.4%	67	41.1%	16.0%	74.4%
All	962	17.5%	11.4%	758	28.7%	15.2%	78.8%

**Table 3**  
Shareholder power restrictions.

	Total	Structured regime				
		No	Yes	Full	Voluntary	Mitigated
No anti-takeover devices	24	14	10	2	4	4
One device is used	58	23	35	26	8	1
Preference shares	42	16	26	20	6	0
Priority shares	8	5	3	1	1	1
Certificates	8	2	6	5	1	0
Two devices are used	68	16	50	35	12	3
Preference/Priority	32	6	24	16	6	2
Preference/Certificate	33	10	23	16	6	1
Priority/Certificate	3	0	3	3	0	0
Three devices are used	2	0	2	2	0	0
Preference shares – total	107	28	75	54	18	3
Priority shares – total	43	10	32	22	7	3
Certificates – total	46	12	34	26	7	1
Total	150	53	97	65	24	8

the values for a modified, finite game consisting only of the major players, and making an appropriate adjustment for the required majority threshold (Felsenthal and Machover, 1998). Throughout the later analysis, the ownership variables and Banzhaf indices are lagged by one period. We deem this necessary to eliminate any simultaneity bias, because specific payout policies may inherently attract investor clienteles and thus lead to endogeneity problems.

The distribution of the sample firms' ownership and the corresponding Banzhaf power indices are summarized in Table 4. The data show that ownership concentration is very high among Dutch listed firms, corresponding to similar figures reported for Germany by Goergen et al. (2005) and Andres et al. (2009). The largest blockholder holds the majority of ordinary shares in 35.9% of the 962 observations, and controls at least 25% in 54.6% of observations. Other shareholders tend to be comparatively weak. A second largest blockholder is present in 65.4% of observations, but only in 6.0% of all cases does it hold a blocking minority of at least 25%, a regulatory threshold in the Netherlands. A third largest blockholder is present in



**Table 4**  
Distribution of voting rights and voting power.

	N	Block-holdings	% of share ownership			Banzhaf power index		
			Mean	>50%	>25%	Mean	>50%	>25%
Largest shareholder	962	100%	38.7%	35.9%	54.6%	98.6%	73.2%	94.6%
2nd largest shareholder	962	65.4%	7.3%	0	6.0%	1.4%	0	7.5%
3rd largest shareholder	962	46.4%	3.1%	0	0	1.4%	0	5.8%
Administration offices	962	22.3%	17.2%	18.2%	21.4%	22.1%	21.9%	22.3%
Insiders	962	13.1%	5.2%	5.3%	8.4%	8.9%	8.6%	9.4%
Financial institutions	962	57.8%	14.8%	6.0%	24.2%	40.5%	39.2%	42.4%
Individuals	962	11.5%	2.0%	0.7%	2.0%	4.3%	3.7%	4.8%
Holding companies	962	18.3%	5.1%	9.1%	7.7%	7.6%	9.1%	8.6%
Non-financial firms	962	27.7%	7.4%	4.9%	9.8%	12.6%	11.7%	13.7%
Government	962	3.0%	1.4%	1.1%	2.8%	3.0%	3.0%	3.0%
Foundations	962	2.2%	0.5%	0.0%	1.0%	0.9%	0.6%	1.4%

Note: Statistics are computed for the pooled sample of 962 firm years. All blockholdings of 5% or more are gathered. The construction of the Banzhaf power index is explained in Section 3.2.

46.4% of all observations. The mean value of the Banzhaf power indices is 98.6% for the largest blockholder, and 1.4% for both the second and third largest blockholders.

The results show that the widespread use of certificates lends a great deal of voting power to administration offices. Certificates are issued by less than a third of the sample firms, but those that do tend to withdraw the majority of their ordinary voting shares. Accordingly, administration offices appear as blockholders in only 22.3% of all observations, but they hold effective voting control in 21.9% and absolute voting majority in 17.2% of observations. Corporate insiders including management and supervisory board members hold equity blocks in 13.1% of observations, and have a mean Banzhaf index of 8.9%. Financial institutions constitute the most powerful class of outside shareholders. They hold equity blocks in 57.8% of observations, and their coalitions have a mean Banzhaf index of 40.5% despite holding only 14.8% of ordinary shares on average. The other powerful classes are non-financial firms and holding companies, which hold equity blocks in 27.7% and 18.3% of all observations, and have mean Banzhaf indices of 12.6% and 7.6%, respectively. Similar to administration offices, holding companies hold absolute majority in nearly half of the firms they hold equity in. Independent individuals tend to be minority investors; they hold equity blocks in 11.5% of observations, but have a mean equity share of just 2.0% and a mean Banzhaf index of 4.3%. The Dutch government and foundations have relatively few equity interests but often tend to have a blocking minority in the firms they hold equity in.

### 3.3. Methodology

We conduct a two-stage multivariate analysis to investigate how dividend behavior is affected by shareholder power restrictions, ownership structures and other firm characteristics. First, we explain the likelihood that a firm pays dividends using random-effects panel probit regressions. In these models, the dependent variable equals 1 if a firm paid dividends in a particular year and 0 otherwise. The basic model includes a fixed set of regressors to control for firm-specific characteristics that include the current and lagged level of ROA, firm value, leverage, and investment opportunities as measured by the market-to-book ratio. We employ indicator variables corresponding to each shareholder power restriction and their interactions with ROA, and later include the ownership variables defined above. We also control for industry-specific and year-specific effects.

In the second stage, the actual dynamics of dividends are analyzed using an extension of Lintner's (1956) partial adjustment model. Lintner assumes that firms maintain a target payout ratio, and adjust (smooth) payout only gradually to earnings shocks over several years. For any year  $t$  the dividend payout of firm  $i$  is assumed to be related to earnings  $\Pi_{it}$  by a desired payout ratio  $\tau_i$ :

$$D_{it}^* = \tau_i \cdot \Pi_{it} \quad (1)$$

In year  $t$ , firm  $i$  adjusts to the target dividend payout only partially, such that:

$$D_{it} - D_{i,t-1} = \alpha_i + \delta_i \cdot (D_{it}^* - D_{i,t-1}) + \varepsilon_{it} \quad (2)$$

where  $\alpha_i$  is a constant,  $D_{it} - D_{i,t-1}$  is the actual change in dividends,  $D_{it}^* - D_{i,t-1}$  is the desired change in dividends,  $\delta_i$  is the speed of adjustment and  $\varepsilon_{it}$  is the error term. Rearranging (2) and substituting (1) into (2) then yields

$$D_{it} = \alpha_i + (1 - \delta_i) \cdot D_{i,t-1} + \delta_i \cdot \tau_i \cdot \Pi_{it} + \varepsilon_{it} \quad (3)$$

Our empirically testable model is formulated using (3) such that

$$D_{it} = \alpha_i + \beta_1 \cdot D_{i,t-1} + \beta_2 \cdot \Pi_{it} + \varepsilon_{it}, \quad (4)$$

where  $\alpha_i$  is the firm-specific effect,  $\beta_1$ , and  $\beta_2$  are model parameters, and  $\varepsilon_{it}$  is the error term. Here, the implicit target payout ratio is given by  $\tau_i = \frac{\beta_2}{1-\beta_1}$ , while the speed of adjustment is  $\delta_i = 1 - \beta_1$ , or correspondingly the extent of dividend smoothing is  $\beta_1$ . It is useful to point out that the target payout ratio increases in both the smoothing coefficient  $\beta_1$  and the impact coefficient  $\beta_2$ . As before, we add to the basic model a fixed set of regressors to control for firm-specific characteristics i.e. firm size, leverage and market-to-book ratio, and also control for industry and year effects. To test our hypotheses pertaining to the impact of shareholder power restrictions and ownership structures, we later include as regressors interactions of the governance dummies and ownership variables with both  $D_{i,t-1}$  and  $\Pi_{it}$ . Then, the sums of the smoothing and impact coefficients on  $D_{i,t-1}$  and  $\Pi_{it}$ , respectively, define the target payout ratios and smoothing levels associated with each restriction and ownership characteristic.

The above partial adjustment specification constitutes a set of dynamic panel data models with the lagged dependent variable included as a regressor. Baltagi (2001) finds that in such a framework, traditional estimators such as the fixed-effects within-estimator may lead to severe biases in those specifications in particular where the time dimension of the panel is fairly small. Several GMM-type estimators have been proposed as more suitable alternatives. Arellano and Bond (1991) suggest a simple estimator based on a first-differenced equation where the differences are instrumented by lagged levels of the regressors. We employ Blundell and Bond's (1998) GMM-in-systems estimator, which improves on this technique by including lagged differences of the dependent variable as instruments for equations in levels (in addition to using levels as instruments for the differences).

## 4. Empirical results

### 4.1. General patterns in dividend behavior

We begin the empirical analysis by observing some general patterns in Dutch dividend behavior. The probit and partial adjustment models in their basic form are depicted in Table 5 as Model (1a) in Panel A and Model (1b) in Panel B, respectively. The probit regression in Model (1a) shows that dividend payers, relative to non-payers, tend to be larger, more profitable, less levered, and have fewer growth opportunities. This suggests that the probability of a dividend payout increases in the severity of agency problems.

The partial adjustment model in Model (1b) shows some notable peculiarities in the dividend dynamics. Firstly, we specify the model using operating cash flows rather than net income, because the latter shows no statistical relationship with dividends. For Germany, Goergen et al. (2005) and Andres et al. (2009) find similar results. Secondly, payout levels show no statistical relationship with firm size, leverage and the market-to-book ratio. These results cast doubt on the role of dividends in mitigating agency concerns in the Netherlands. Thirdly, the implied target payout ratio predicted by the model is considerably higher than the payout ratios observed empirically. In Model (1b) of Panel B, the implied target payout is 38.5% of operating cash flow ( $\tau_i = \frac{0.10}{1-0.74}$ ), a substantial departure from the average 11.4% observed in Table 2. Dividend smoothing practices cannot fully explain this discrepancy. In the model, the level of dividend smoothing is relatively high at  $\beta_1 = 0.74$  (the speed of adjustment is correspondingly low at  $1-0.74 = 0.26$ ), comparable to that reported for Germany by Goergen et al. (2005) and Andres et al. (2009).

### 4.2. The impact of shareholder power restrictions on dividend behavior

The remainder of Table 5 illustrates how the various shareholder power restrictions affect the dividend behavior of Dutch firms. The economic effects and how they correspond to the hypotheses formulated in Section 2.2.1 are summarized in Table 6.

#### 4.2.1. The likelihood of dividend payout

In Panel A of Table 5, Models (2a) and (4a) show how the likelihood of a dividend payout is affected by the use of preference shares, priority shares, and certificates. Interestingly, none of these anti-shareholder devices reduce the propensity of firms to pay dividends, implying that the need for capital market access deters firms from stopping dividends completely. Still, the various securities affect the extent to which payout likelihood is linked to profitability. To that end, each of our prior hypotheses is confirmed. Firstly, the payout propensity of firms using preference shares declines rather than increases in ROA. Secondly, there is some indication that firms using certificates are more likely to pay dividends at higher levels of profitability. And thirdly, priority shares have no discernible impact on payout likelihood.

Models (3a) and (4a) show the impact of each form of the structured regime on payout likelihood. Contrary to our prior hypotheses, there is no evidence that imposition of the full structured regime would affect the propensity of firms to pay dividends. Furthermore, the large, internationally diversified firms that voluntarily retain the regime are actually more likely to pay. These results suggest that firms under the full and voluntary forms of the structured regime avoid expropriating shareholders entirely. This corresponds to the argument that firms moderate expropriation to maintain continued access to capital markets (Bulow and Rogoff, 1989; Michaely and Roberts, 2012). It is likely that this option is more valuable for the multinationals under the voluntary regime, because they tend to be more exposed to international capital markets and have relatively more dispersed ownership structures (Choi and Park, 2019; Zheng, 2019).

**Table 5**  
The impact of shareholder power restrictions on dividend policy.

Panel A: Likelihood of dividend payout								
Variables	(1a)		(2a)		(3a)		(4a)	
	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat
Return on assets (ROA <sub>it</sub> )	5.79	4.45***	5.56	3.23***	7.55	3.22***	7.74	3.04***
Lagged return on assets (ROA <sub>it-1</sub> )	7.65	5.39***	7.76	5.51***	7.80	5.43***	7.93	5.50***
Full structured regime			-0.31	-0.79			-0.14	-0.34
Voluntary structured regime			1.14	1.85*			1.32	2.14**
Mitigated structured regime			-2.77	-2.59***			-2.73	-2.55**
ROA <sub>it</sub> *Full structured regime			1.15	0.48			-1.14	-0.44
ROA <sub>it</sub> *Voluntary structured regime			-1.53	-0.44			-4.89	-1.22
ROA <sub>it</sub> *Mitigated structured regime			40.06	3.23***			37.61	2.92***
Preference shares					-0.19	-0.45	-0.20	-0.49
Priority shares					-0.37	-0.86	-0.26	-0.63
Certificates					-0.17	-0.41	-0.32	-0.85
ROA <sub>it</sub> *Preference shares					-5.76	-2.35**	-5.62	-2.19**
ROA <sub>it</sub> *Priority shares					3.39	1.33	3.60	1.32
ROA <sub>it</sub> *Certificates					4.85	1.92*	6.96	2.20**
Firm size	0.54	4.88***	0.47	4.70***	0.55	4.97***	0.48	4.54***
Debt-to-assets	-1.31	-1.82*	-1.24	-1.72*	-1.24	-1.72*	-1.18	-1.61
Market-to-book	-0.82	-6.40***	-0.96	-6.61***	-0.84	-6.59***	-0.95	-6.49***
Intercept	-3.17	-2.10**	-2.48	-1.80*	-3.01	-2.04**	-2.33	-1.70*
Industry dummies	Yes		Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes		Yes	
No. of observations	962		962		962		962	
No. of firms	150		150		150		150	
Wald test ( $\chi^2$ )	91.03***		93.19***		102.42***		101.00***	
Log likelihood	-249.81		-237.70		-245.29		-232.80	
Sigma u	1.65		1.44		1.59		1.40	
Rho	0.73		0.67		0.72		0.66	
LR test of rho = 0	160.23***		115.04***		140.77***		100.49***	

  

Panel B: Dividend dynamics								
Variables	(1b)		(2b)		(3b)		(4b)	
	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat
Lagged dividend (D <sub>it-1</sub> )	0.74	8.81***	0.80	10.30***	0.83	4.09***	1.33	4.87***
Operating cash flow (CF <sub>it</sub> )	0.10	6.86***	0.09	6.36***	0.04	1.73*	-0.04	-1.45
D <sub>it-1</sub> *Full structured regime			-0.43	-4.01***			0.20	3.87***
D <sub>it-1</sub> *Voluntary structured regime			-0.48	-1.74*			-0.66	-2.52*
D <sub>it-1</sub> *Mitigated structured regime			-0.59	-0.59			-0.61	-0.87
CF <sub>it</sub> *Full structured regime			-0.04	-1.74*			-0.02	-2.29**
CF <sub>it</sub> *Voluntary structured regime			-0.03	-1.18			0.07	2.43**
CF <sub>it</sub> *Mitigated structured regime			0.08	0.25			-0.04	-0.16
D <sub>it-1</sub> *Preference shares					-0.62	-7.52***	-0.64	-25.55***
D <sub>it-1</sub> *Priority shares					0.05	0.23	-0.45	-1.74*
D <sub>it-1</sub> *Certificates					0.20	0.64	-0.23	-0.73
CF <sub>it</sub> *Preference shares					-0.01	-0.80	0.00	0.22
CF <sub>it</sub> *Priority shares					0.04	1.70*	0.11	3.91***
CF <sub>it</sub> *Certificates					-0.01	-0.21	0.06	1.30
Firm size*1000	-23.80	-1.06	-3.74	-0.81	12.46	1.05	8.12	1.01
Debt-to-assets*1000	-65.70	-0.52	-24.38	-0.59	-75.88	-0.93	-56.40	-1.38
Market-to-book*1000	-44.72	-0.76	6.99	1.15	-8.41	-1.30	-1.99	-0.46
Intercept	385,795	1.00	64,904	1.08	-140,385	-0.89	-93,029	-0.87
Industry dummies	Yes		Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes		Yes	
No. of observations	962		962		962		962	
No. of firms	150		150		150		150	
p-value of F-test ( $\chi^2$ )	>0.001		>0.001		>0.001		>0.001	

(continued on next page)

Table 5 (continued)

Panel B: Dividend dynamics									
Variables	(1b)		(2b)		(3b)		(4b)		
	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	
Hansen test	36.89		93.69		129.69		1.5e+06***		
AR(1) test z-statistic	-1.28		-1.17		-1.34		-1.21		
AR(2) test z-statistic	1.07		1.10		1.33		1.16		

Note: Panel A shows random-effects panel probit models where the dependent variable is 1 if a firm pays dividends and 0 otherwise. ROA is net income to the average of total assets at the beginning and end of the year. Firm size is market value of equity plus book value of debt. Debt-to-assets is book value of debt to book value of assets. Market-to-book is market to book value of equity. Panel B shows partial adjustment models where the dependent variable is the dividend amount. The models are estimated using GMM-in-systems with up to two lagged levels of the regressors used as instruments in the first-differenced equation. The Hansen test of overidentifying restrictions verifies the appropriateness of moment conditions imposed. The Z-statistics use heteroscedasticity and autocorrelation-consistent standard errors. The autocorrelation tests have an asymptotic standard normal distribution. \*, \*\* and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

Table 6

Summary of the impact of shareholder power restrictions on dividend policy.

Panel A: Likelihood of dividend payout								
	Dividend likelihood				Sensitivity of dividend likelihood to ROA			
	Exp. sign	(2a)	(3a)	(4a)	Exp. sign	(2a)	(3a)	(4a)
Preference shares	-	nss		nss	-	-5.76**		-5.62**
Priority shares	-	nss		nss	-	nss		nss
Certificates	+	nss		nss	+	4.85*		6.96**
Full structured regime	-		nss	nss	-		nss	nss
Voluntary structured regime	-		1.14*	1.32**	-		nss	nss
Mitigated structured regime	-		-2.77***	-2.73**	-		40.06**	37.61***

  

Panel B: Dividend dynamics								
	Dividend smoothing: $\beta_1$				Target payout ratio: $\beta_2/(1 - \beta_1)$			
	Exp. sign	(2b)	(3b)	(4b)	Exp. sign	(2b)	(3b)	(4b)
Preference shares	-	-0.62***		-0.64***	-	-19.7%***		-25.0%***
Priority shares	-	nss		-0.45*	-	nss		nss
Certificates	+	nss		nss	+	nss		nss
Full structured regime	-		-0.43***	0.20***	-		-37.1%***	-0.8%***
Voluntary structured regime	-		-0.48*	-0.66*	-		-36.2%*	-3.0%***
Mitigated structured regime	-		nss	nss	-		nss	nss

Notes: This table presents a summary of dividend payout policy using the estimates of Table 5. For each of the statistically significant parameter estimates, we show the estimated size of the deviations from the reference values. In Panel B, the significance of the change in the target payout ratio is obtained using Wald tests which determine whether the deviations from  $\beta_1$  and  $\beta_2$  are jointly significant. \*, \*\* and \*\*\* denote significance at 10%, 5%, and 1% level, respectively. nss stands for 'not statistically significant'.

The payout propensity of firms under the mitigated structured regime exhibits different patterns that are consistent with control by the foreign majority owner. We confirm that these firms are less likely to pay dividends, but their payout likelihood is strongly tied to their profitability (the interaction term is significant at the 1% level).

#### 4.2.2. The dynamics of dividend payout

How the dynamics of dividend payout are affected by shareholder power restrictions is shown in Panel B of Tables 5 and 6. Models (2b) and (4b) first illustrate the impact of the three equity instruments. Notably, the use of preference shares reduces the smoothing coefficient by 0.62 and the target payout ratio by 19.7%. This goes a long way in explaining why the dividend payouts of Dutch firms are typically low and flexible; Table 3 has shown that 107 out of the 150 sample firms use preference shares to restrict shareholder control. Certificates and priority shares do not induce statistically significant changes in dividend behavior, as indicated by the Wald tests. However, the change in the target payout ratio appears to be negative for certificates and positive for priority shares.

Model (3b) shows how each form of the structured regime affects dividend behavior, without controlling for the three equity instruments. For the full and voluntary forms of the regime, our hypotheses are fully confirmed. Firstly, firms smooth their payouts to a lesser extent. When the structured regime is not imposed, the smoothing coefficient on  $D_{i,t-1}$  is  $\beta_1 = 0.80$ . Under the full and voluntary forms of the regime, this smoothing coefficient is reduced by 0.43 and 0.48, respectively. Secondly, the full and voluntary regimes decrease the target payout ratio, at  $\tau_1 = 45.0\%$  for firms not under the regime, by 37.1% and 36.2%, respectively. When the full regime is imposed, this decrease is driven by a reduction in both the smoothing coefficient  $\beta_1$  and the impact coefficient  $\beta_2$ ; under the voluntary regime, the change in the two coefficients is similarly negative, although the reduction in the impact coefficient is statistically insignificant.

We find no statistical evidence that the mitigated form of the structured regime affects the target payout ratio or extent of dividend smoothing. Model (2b) shows that when the mitigated regime is imposed, the smoothing coefficient is lower by

0.59 and the target payout ratio by 23.5%, but the changes are statistically insignificant. This suggests that the control exerted by the foreign majority owner mitigates the exacerbation of agency problems otherwise induced by the imposition of the regime.

The final Model (4b) shows that the relaxed dividend behavior of firms under the full and voluntary structured regimes is actually driven by their habitual use of anti-shareholder equity devices. We have shown that of the firms under each regime, preferences shares are used by 83% and 75%, respectively, and the same firms are also more likely to issue certificates. Once these devices are controlled for, the results still suggest that dividend behavior is changed by the imposition of the full and voluntary regimes, but the reduction in the target payout ratio declines to just 0.8% and 3.0%, respectively.<sup>5</sup> Furthermore, the source of the change in dividend behavior is different in the two regimes. Under the full regime, the impact coefficient is reduced, moving the target payout ratio downwards. However, the smoothing coefficient is actually higher, thus all else equal these firms smooth dividends relatively more. For firms that retain the regime voluntarily, we find the opposite results: the impact coefficient is now higher but the smoothing coefficient remains reduced. It is not easy to fully explain these findings; one would expect that the Dutch multinationals under the voluntary regime would smooth dividends relatively more because of their greater reliance on global capital markets. Still, from the perspective of minority shareholders it is irrelevant whether the full and voluntary regimes change dividend behavior by their mere imposition, or by increasing the propensity of firms to use anti-shareholder devices.

#### 4.3. Payout policy and the allocation of shareholder control

Having illustrated the impact of shareholder power restrictions on dividend behavior, we now explore the relationship between payout patterns and firm ownership. Previous studies observe the similarly relaxed dividend behavior and highly concentrated ownership structures of German firms, and propose two key hypotheses for the relationship between the two. On one hand, [Goergen et al. \(2005\)](#) infer that in the presence of a strong main shareholder, dividends are reduced because they need not function as an alternative agency control device. On the other, [Gugler and Yurtoglu \(2003\)](#) find that the payout levels of German firms actually increase in the presence of a strong second largest shareholder, and instead attribute low dividends payouts to the incumbent shareholders' expropriation of minority investors.

A key contribution of this paper is that it simultaneously examines the impact of ownership and shareholder power restrictions on dividend behavior. The previous results show that dividend payout is strongly related to the severity of the management-shareholder conflict, and that this relationship is actually negative rather than positive. In other words, firms relax their dividend behavior *unless* shareholders are strong enough to enforce optimal payout outcomes. This assertion is certainly more intuitive than that made by [Goergen et al. \(2005\)](#) – after all, the level of free cash flow is unlikely to be affected by the mere concentration of control in the hands of a main shareholder. An important illustration of this issue is the payout patterns we have observed for the sample firms under the mitigated structured regime. We have found that even though these firms have powerful foreign majority owners, they do not relax their dividend payout relative to other firms, and their payout probability is in fact strongly linked to their profitability.

In the spirit of these results and the hypotheses formulated in [Section 2.2.2](#), we now investigate two important aspects of shareholder control: (i) the concentration of control in the hands of the two largest shareholders, and (ii) the concentration of control in the hands of specific shareholder classes. In the first case, control is measured by the percentage of share ownership. In the second, we introduce the Banzhaf power indices described in [Section 3.2](#). The comparison of the two measures is important, because they distinguish between the ability and incentives of shareholders to influence dividend decisions. The Banzhaf indices show whether a particular coalition of shareholders would be able to win a shareholder vote on the amount of dividends to be paid. However, they do not show whether the same shareholder coalitions would actually be prepared to bear the costs of doing so. In comparison, the percentage of ownership is a reliable measure of shareholder incentives, assuming that the greater the equity blocks held by the shareholders, the greater their incentives to monitor management and enforce optimal payout outcomes.

The results on how shareholder control affects dividend behavior are shown in [Table 7](#) and summarized in [Table 8](#). As before, Panels A and B analyze the likelihood of a dividend payout and the actual dividend dynamics, respectively.

##### 4.3.1. The impact of ownership concentration

In Panel A of [Tables 7 and 8](#), Models (1a) and (2a) show how the payout likelihood is affected by the concentration of control in the hands of the two largest shareholders. The results show insignificant statistical evidence that payout propensity would decrease in the equity share of the largest shareholder. However, we do find that the likelihood of a payout increases in the equity share of the second largest shareholder. This result is consistent with the argument of [Gugler and Yurtoglu \(2003\)](#) that strong minority shareholders demand dividends to avoid being expropriated by the main incumbent shareholder.

In Panel B on the actual dividend dynamics, Model (1b) produces quite different results. Both the smoothing and impact coefficients decrease in the equity share of the largest shareholder, and the coefficient changes are also jointly significant.

<sup>5</sup> The correlations between each form of the structured regime and the use of the anti-shareholder devices are low (in each case, they do not exceed 0.2) such that they do not induce multicollinearity in the model.

**Table 7**

The impact of shareholder power allocation on dividend policy.

<i>Panel A: Likelihood of dividend payout</i>									
Voting power measure	(1a)		(2a)		(3a)		(4a)		
	% of Shares		% of Shares		Banzhaf index		% of Shares		
Variables	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	
Return on assets (ROA <sub>it</sub> )	5.68	4.39***	8.10	3.14***	7.99	3.14***	8.09	3.31***	
Lagged return on assets (ROA <sub>it,t-1</sub> )	7.67	5.41***	7.99	5.50***	7.75	5.47***	7.80	5.41***	
Largest shareholder	-0.40	-0.62	-0.46	-0.68					
2nd largest shareholder	4.76	2.23**	3.61	1.65*					
Insiders					0.95	1.62	1.01	1.14	
Financial institutions					0.97	1.96**	2.21	2.79***	
Individuals					0.24	0.38	-1.43	-1.16	
Holding companies					1.14	1.89*	1.31	1.40	
Non-financial firms					0.38	0.71	-0.35	-0.44	
Government					0.22	0.25	-0.49	-0.28	
Foundations					1.07	0.61	10.19	1.22	
Preference shares			-0.13	-0.33	-0.22	-0.57	-0.30	-0.77	
Priority shares			-0.13	-0.30	-0.24	-0.61	-0.30	-0.78	
Certificates			-0.32	-0.83	-0.42	-1.13	-0.49	-1.32	
ROA <sub>it</sub> *Preference shares			-5.85	-2.27**	-5.45	-2.11**	-5.54	-2.22**	
ROA <sub>it</sub> *Priority shares			3.28	1.21	3.40	1.24	3.23	1.20	
ROA <sub>it</sub> *Certificates			6.80	2.14**	7.01	2.19**	6.81	2.17**	
Full structured regime			-0.23	-0.55	-0.27	-0.68	-0.29	-0.77	
Voluntary structured regime			1.18	1.91*	1.12	1.86*	1.02	1.78*	
Mitigated structured regime			-2.55	-2.40**	-2.75	-2.65***	-2.46	-2.46**	
ROA <sub>it</sub> *Full structured regime			-1.44	-0.56	-1.83	-0.69	-2.02	-0.78	
ROA <sub>it</sub> *Voluntary structured regime			-4.84	-1.21	-5.58	-1.40	-4.66	-1.24	
ROA <sub>it</sub> *Mitigated structured regime			36.80	2.81***	34.87	2.74***	30.39	2.37**	
Firm size	0.57	5.20***	0.51	4.69***	0.51	4.74***	0.54	4.95***	
Debt-to-assets	-1.35	-1.90*	-1.19	-1.63	-1.24	-1.73*	-1.27	-1.80*	
Market-to-book	-0.80	-6.46***	-0.95	-6.49***	-0.92	-6.15***	-0.91	-6.24***	
Intercept	-3.86	-2.50***	-2.82	-1.93*	-3.34	-2.27***	-3.24	-2.23**	
Industry dummies	Yes		Yes		Yes		Yes		
Year dummies	Yes		Yes		Yes		Yes		
No. of observations	962		962		962		962		
No. of firms	150		150		150		150		
Wald test ( $\chi^2$ )	96.01***		101.85***		105.83***		107.61***		
Log likelihood	-247.38		-231.35		-229.54		-225.35		
Sigma u	1.57		1.37		1.31		1.24		
Rho	0.71		0.65		0.63		0.61		
LR test of rho = 0	150.36***		96.74***		77.56***		64.79***		
<i>Panel B: Dividend dynamics</i>									
Voting power measure	(1b)		(2b)		(3b)		(4b)		
	% of Shares		% of Shares		Banzhaf		% of Shares		
Variables	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	
Lagged dividend (D <sub>it,t-1</sub> )	0.82	14.31***	1.15	5.79***	0.77	2.15**	1.53	6.38***	
Operating cash flow (CF <sub>it</sub> )	0.09	11.24***	-0.02	-0.87	0.02	0.62	-0.04	-1.64	
D <sub>it,t-1</sub> * Largest shareholder	-1.27	-1.72*	0.50	1.97*					
D <sub>it,t-1</sub> * 2nd largest shareholder	-4.07	-1.20	1.50	1.14					
CF <sub>it</sub> * Largest shareholder	-0.07	-1.79*	-0.08	-2.86***					
CF <sub>it</sub> * 2nd largest shareholder	-0.72	-1.83*	-0.25	-1.16					
D <sub>it,t-1</sub> *Insiders					0.65	2.08**	0.64	1.42	
D <sub>it,t-1</sub> *Financial institutions					0.08	0.31	-1.36	-3.59***	
D <sub>it,t-1</sub> *Individuals					0.51	0.68	-0.12	-0.14	
D <sub>it,t-1</sub> *Holding companies					0.41	1.16	-0.88	-1.00	
D <sub>it,t-1</sub> *Non-financial firms					-0.86	-1.60	0.25	0.17	
D <sub>it,t-1</sub> *Government					-0.38	-0.90	0.32	0.85	
D <sub>it,t-1</sub> *Foundations					-1.69	-2.22**	2.62	0.75	
CF <sub>it</sub> *Insiders					-0.13	-2.10**	-0.26	-2.32**	
CF <sub>it</sub> *Financial institutions					0.04	2.27**	0.23	2.94***	
CF <sub>it</sub> *Individuals					-0.12	-1.04	-0.14	-1.10	
CF <sub>it</sub> *Holding companies					-0.09	-1.76*	-0.04	-0.43	
CF <sub>it</sub> *Non-financial firms					0.04	0.96	-0.28	-1.30	
CF <sub>it</sub> *Government					0.12	2.20**	0.03	0.34	

(continued on next page)



Table 7 (continued)

Panel B: Dividend dynamics								
Voting power measure Variables	(1b) % of Shares		(2b) % of Shares		(3b) Banzhaf		(4b) % of Shares	
	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat	Coeff.	Z-stat
CF <sub>it</sub> *Foundations					0.09	0.52	-0.71	-1.53
D <sub>i,t-1</sub> *Preference shares			-0.67	-28.21***	-0.64	-39.88***	-0.64	-36.67***
D <sub>i,t-1</sub> *Priority shares			-0.27	-1.46	0.01	0.06	-0.57	-2.48**
D <sub>i,t-1</sub> *Certificates			-0.46	-1.37	-0.08	-0.30	-0.15	-0.56
CF <sub>it</sub> *Preference shares			0.01	0.66	0.01	0.71	0.01	0.78
CF <sub>it</sub> *Priority shares			0.09	4.87***	0.01	0.32	0.10	4.09***
CF <sub>it</sub> *Certificates			0.10	2.50**	0.00	0.03	0.03	0.93
D <sub>i,t-1</sub> *Full structured regime			0.04	0.35	0.70	1.93*	0.01	0.05
D <sub>i,t-1</sub> *Voluntary str. regime			-0.50	-2.70***	-0.21	-0.97	-0.56	-2.44**
D <sub>i,t-1</sub> *Mitigated str. regime			-0.94	-1.78	-0.51	-1.43	-0.22	-0.46
CF <sub>it</sub> *Full structured regime			0.01	0.74	-0.11	-1.97*	-0.03	-0.88
CF <sub>it</sub> *Voluntary str. regime			0.05	2.41**	-0.04	-1.12	0.01	0.16
CF <sub>it</sub> *Mitigated str. regime			0.22	1.41	0.07	0.63	0.05	0.32
Firm size*1000	-13.12	-0.92	10.16	1.01	10.59	1.34	8.93	1.21
Debt-to-assets*1000	9.75	0.18	-57.90	-1.57	-44.76	-1.36	-40.23	-1.39
Market-to-book*1000	-0.43	-0.05	-3.07	-0.78	-1.87	-0.70	-1.93	-0.80
Intercept	132,113	1.18	-141823	-1.07	-118666	-1.21	-101701	-1.09
Industry dummies	Yes		Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes		Yes	
No. of observations	962		962		962		962	
No. of firms	150		150		150		150	
F-test ( $\chi^2$ )	>0.001		>0.001		>0.001		>0.001	
Hansen test	115.78		7.1e+06***		8.7e+10***		2.0e+08***	
AR(1) test z-statistic	-1.20		-1.19		-1.15		-1.15	
AR(2) test z-statistic	1.08		1.13		1.10		1.07	

Note: Panel A shows random-effects panel probit models where the dependent variable is 1 if a firm pays dividends and 0 otherwise. ROA is net income to the average of total assets at the beginning and end of the year. Firm size is market value of equity plus book value of debt. Debt-to-assets is book value of debt to book value of assets. Market-to-book is market to book value of equity. Panel B shows partial adjustment models where the dependent variable is the dividend amount. The models are estimated using GMM-in-systems with up to two lagged levels of the regressors used as instruments in the first-differenced equation. The Hansen test of overidentifying restrictions verifies the appropriateness of moment conditions imposed. The Z-statistics use heteroscedasticity and autocorrelation-consistent standard errors. The autocorrelation tests have an asymptotic standard normal distribution. \*, \*\* and \*\*\* denote significance at the 10%, 5%, and 1% level, respectively.

This suggests that both the target payout ratio and extent of dividend smoothing are reduced substantially when a strong main shareholder is present. However, we find no evidence that the dividend dynamics would be positively related to the equity share of the second largest shareholder. In fact, the results show an insignificant reduction in both dividend smoothing and the target payout ratio.

Notably, the inclusion of the shareholder power restrictions in Model (2b) completely transforms the relationship between control concentration and the payout patterns. Once the restrictions are accounted for, the target payout ratio and extent of dividend smoothing are both related positively rather than negatively to the equity share of the largest shareholder. Moreover, the equity share of the second largest shareholder shows a similar but statistically insignificant relationship with the dividend dynamics. These results provide additional evidence that the dividend behavior of Dutch firms is ultimately driven by the severity of the management-shareholder conflict, and that the relationship between the two is in fact negative rather than positive. In other words, firms relax their dividend behavior because of their habitual use of preference shares and other restrictions on shareholder power, and the presence of a strong main shareholder actually forces them to increase their payouts to more optimal levels. Overall, these findings challenge much of the evidence presented in the prior literature, and suggest that dividends and shareholder control act as complementary rather than substitute devices in mitigating agency concerns<sup>6</sup>.

#### 4.3.2. The impact of the identity of large shareholders

The remainder of Tables 7 and 8 demonstrates how the identity of large shareholders affects dividend behavior when the shareholder power restrictions are accounted for. The results are shown by the third and fourth models in both Panels A and B. It is useful to recall our prior hypotheses based on Gugler (2003), Goergen et al. (2005) and others. Each of these studies finds that the flexibility afforded firms in their dividend behavior increases in the expected 'ranking' of their shareholders in

<sup>6</sup> A possible explanation to the differences between our results and those presented by prior studies is that large shareholders influence dividend behavior indirectly, by controlling the firm's use of anti-shareholder devices. However, we find no evidence that this would be the case – the correlation between the use of the anti-shareholder devices and control concentration is typically negative but never exceeds -0.20.

**Table 8**

Summary of the impact of shareholder power allocation on dividend policy.

<i>Panel A: Likelihood of dividend payout</i>					
Voting power measure	<i>Exp. sign</i>	(1a) % shares	(2a) % shares	(3a) Banzhaf	(4a) % shares
<i>Shareholder power restrictions controlled for</i>					
Largest shareholder	–	nss	nss	Yes	Yes
2nd largest shareholder	+	4.76**	3.61*		
Insiders	–			nss	nss
Financial institutions	+			0.97**	2.21***
Individuals	–			nss	nss
Holding companies	–			0.73*	nss
Non-financial firms	–			nss	nss
Government	+			nss	nss
Foundations	+			nss	nss
<i>Panel B: Dividend dynamics</i>					
<i>Dividend smoothing: <math>\beta_1</math></i>					
Voting power measure	<i>Exp. sign</i>	(1b) % shares	(2b) % shares	(3b) Banzhaf	(4b) % shares
<i>Shareholder power restrictions controlled for</i>					
Largest shareholder	–	–1.27*	0.50**	Yes	Yes
2nd largest shareholder	+	nss	nss		
Insiders	–			0.65**	nss
Financial institutions	–			nss	–1.36***
Individuals	–			nss	nss
Holding companies	–			nss	nss
Non-financial firms	–			nss	nss
Government	+			nss	nss
Foundations	+			–1.69**	nss
<i>Target payout ratio: <math>\beta_2/(1 - \beta_1)</math></i>					
Voting power measure	<i>Exp. sign</i>	(1b) % shares	(2b) % shares	(3b) Banzhaf	(4b) % shares
<i>Shareholder power restrictions controlled for</i>					
Largest shareholder	–	–46.7%*	3.60%*	Yes	Yes
2nd largest shareholder	+	nss	nss		
Insiders	–			15.6%*	nss
Financial institutions	+			nss	14.4%***
Individuals	–			nss	nss
Holding companies	–			nss	nss
Non-financial firms	–			nss	nss
Government	+			nss	nss
Foundations	+			–4.1%**	nss

*Notes:* This table presents a summary of dividend payout policy using the estimates of Table 7. For each of the statistically significant parameter estimates, we show the estimated size of the deviations from the reference values. In Panel B, the significance of the change in the target payout ratio is obtained using Wald tests which determine whether the deviations from  $\beta_1$  and  $\beta_2$  are jointly significant. \*, \*\* and \*\*\* denote significance at 10%, 5%, and 1% level, respectively. nss stands for 'not statistically significant'.

terms of monitoring efficiency. Accordingly, we expect the dividends payouts to be (i) smoothed relatively less when the controlling shareholders are financial institutions, the insiders of the firm, individual investors, holding companies, or non-financial firms; and (ii) smoothed relatively more when the controlling shareholders are the government or foundations. The same ranking should broadly apply to the probability of a dividend payout as well as the target payout ratios. However, we expect firms controlled by financial institutions to be more likely to pay dividends and have higher target payouts, due to the cash flow clientele considerations discussed in Section 2.2.2.

How the probability of a dividend payout relates to shareholder identity is shown in Models (3a) and (4a) of Panel A. The results confirm that firms controlled by institutional investors are considerably more likely to pay dividends in any given year. This finding is fully robust across the two models which measure shareholder control using the Banzhaf indices and the percentage of ownership, respectively. Otherwise, there is no indication that payout propensity would decrease in the monitoring ability of the various shareholder classes. On the contrary, Model (3a) shows marginal evidence that firms are more rather than less likely to pay dividends when corporate insiders or holding companies hold effective voting control. In Model (4a), the results are similar but statistically insignificant. This suggests that while these investors would win a possible shareholder vote on dividends, their incentives to exert control over dividend behavior is not strictly tied to the size of their equity interests. This is unsurprising in both cases. On one hand, corporate insiders are individuals whose personal wealth is sensitive to their dividend income even when their equity blocks are relatively small. On the other, Table 4 has

shown that holding companies hold absolute majority in nearly half the firms they invest in. Therefore, an increase in their equity share may have little marginal impact on their incentives to force higher payouts.

Panel B shows how the identity of large shareholders affects the actual dividend dynamics. Model (4b) confirms that firms with concentrated institutional owners smooth dividends to a lesser extent but otherwise have higher target payout ratios. The same results are insignificant in Model (3b), however. This suggests that financial institutions do not commit to the costly enforcement of their desired payout outcomes unless the size of their equity interests motivates them to do so. The remainder of Model (3b) provides additional evidence that the target payout ratio increases rather than decreases in the monitoring effectiveness of large shareholders. The results confirm that corporate insiders force higher rather than lower payouts when they hold effective voting control. At the same time, the dividend behavior of firms controlled by foundations is relatively more rather than less relaxed, both in terms of the target payout ratio and extent of dividend smoothing.

As before, none of the results presented here suggest that dividends and shareholder control are substitute devices in mitigating agency problems. On the contrary, we find some evidence that Dutch firms show more rather than less discipline in their dividend behavior when strong shareholders with superior monitoring skills are present. This suggests that a firm's dividend policy is complementary to shareholder control, such that firms relax their dividend payouts unless strong shareholders with the appropriate incentives are present to force them otherwise.

#### 4.4. Extensions and robustness checks

As an important extension of our analysis, we examine whether the dividend payouts of Dutch firms with outstanding American Depositary Receipts (ADRs) are different from the rest of the sample. A related finding we have previously discussed is that Dutch multinationals under the voluntary structured regime are more likely to pay dividends. If this is due to their greater reliance on international capital markets, it is possible that the cross-listing of Dutch firms in foreign markets, and especially the US market, exerts discipline on their dividend behavior. We compile the list of Dutch firms with outstanding ADRs using Citi's Universal Issuance Guide and Capital Raising database. We also consult Amadeus database for cross-listings on other exchanges, and find that all Dutch firms with foreign listings have ADRs traded in the US as well. We distinguish between Level I and IV ADRs that require minimal or no review by the US Securities and Exchange Commission (SEC), and Level II and III ADRs that require extensive compliance with the SEC's reporting requirements.

The results show that during the sample period, 9% of the sample firms had Level II or III ADRs, and an additional 10% had Level I or IV ADRs outstanding. We find that only about a quarter of the firms under the voluntary structured regime have issued ADRs. Overall, there is no evidence that the dividend behavior of ADR issuers would be any less relaxed. The partial adjustment models show that ADR issuers neither pay higher dividends nor smooth dividends to a greater extent. Moreover, the panel probit models suggest that they are actually less rather than more likely to pay dividends.

In order to corroborate the results shown in Tables 5–8, we perform a variety of robustness checks. An important finding previously discussed is that the dividend dynamics of Dutch firms show no statistical relationship with proxies for the severity of agency problems, including firm size, leverage, and investment opportunities. Additional analysis reveals that this result is robust to alternative measures of our original control variables. For example, the regression results are unchanged when we proxy firm size using the book value of assets, the market value of equity, or total net sales rather than the market value of assets. Similarly, the results are invariant to the use of alternatives to the debt-to-assets ratio, such as debt-to-equity, the book or market value of leverage, as well as the book or market value of long leverage. We use several alternatives to the market-to-book ratio to measure investment opportunities, including Tobin's Q, sales growth, asset growth, and past profitability. Again, none of these variables show a robust relationship with the dividend dynamics.

To check for the robustness of the partial adjustment and panel probit models, we try several alternative model specifications including full adjustment models (Short et al., 2002) and Waud (1966) models, as well as allow the adjustment of dividends to earnings changes to be asymmetric. None of these specifications yield materially different results. As alternatives to the panel probit models, we run pooled probit and heteroscedasticity probit models with firm dummies included as regressors, and find that the results are comparable.

We also try alternative specifications of shareholder control in the regressions shown in Table 7. The only interesting results are obtained when we replace the ownership percentages in Model (4b) with dummy variables that equal 1 if a shareholder has a blocking minority of at least 25%, and 0 otherwise. By using these dummies, we make the implicit assumption that shareholders with a blocking minority already have sufficient incentives to enter into active policy seeking. The new results confirm our previous observations on how institutional and insider ownership affects dividend behavior.

We finally examine whether our results on payout behavior persist when we account for share repurchases in addition to dividends. It is possible that Dutch firms try to avoid permanent cash flow commitments and prefer to reimburse shareholders by repurchasing shares. However, similar to previous studies (La Porta et al., 2000; Eije and Megginson, 2008) we find no evidence for this. We gather data on share repurchases from the SDC and Amadeus databases, Dutch financial dailies, and published annual reports. Of the 962 firm years over our sample period, shares are only repurchased in 54 at an average €185.4 million. Combining these repurchases with dividends in our payout models, our original results remain. The dynamics of total payout continue to show no robust relationship with net income, firm size, leverage and the market-to-book ratio. There is also little indication that Dutch firms would switch smoothly between dividends and share repurchases depending

on their capacity to make cash flow commitments. Random-effects tobit models<sup>7</sup> reveal that relative to dividend payers, repurchasers are less profitable. However, there is no evidence that they would have greater non-operating or more volatile operating cash flows, or that they would be smaller, less levered or have a higher the market-to-book ratio.

## 5. Conclusion

The substitutability of dividends and shareholder control in mitigating agency problems is often cited to explain why firms, all else equal, pay lower dividends in Continental Europe than in the Anglo-American world. This paper has challenged this argument, by showing that the dividend behavior of Dutch firms is relaxed because of their habitual use of restrictions on shareholder control, and not because they have concentrated ownership structures or powerful controlling shareholders.

The stakeholder-oriented governance system of the Netherlands has been a natural choice for exploring the relationship between dividends, ownership, and anti-shareholder devices. Much like firms in similar regimes such as Germany, Dutch firms are well-documented to pay low dividends, have concentrated ownership structures, and impose strong restrictions on shareholder control. Our analysis has focused on the period up to 2004, which marked major governance reforms in the Netherlands including changes in the Corporate Governance Code and enactment of the Structured Regime Reform Act. Nonetheless, the use of anti-shareholder provisions remains widespread among Dutch publicly listed firms.

Our empirical analysis has shown that the dividend behavior of Dutch firms is most adversely affected by the use of Dutch-style poison pills known as preference shares, and the adoption of the full and voluntary forms of the structured regime, an institutional form that firms must adopt once they reach a certain size. Once these restrictions on shareholder control are accounted for, we find that firms' target payout ratios and the extent to which they smooth dividends increase rather than decrease in the equity interest of the largest shareholder. In other words, firms relax their dividend behavior because of their habitual use of anti-shareholder mechanisms, and the presence of a strong main shareholder actually forces them to increase their payouts to more optimal levels. The relationship between the dividend dynamics and the identity of the large shareholders lends further support to this argument: we find that firms pay more dividends when controlled by either institutional investors or corporate insiders.

Overall, our findings suggest that dividends are complements rather than substitutes to shareholder control in mitigating agency problems, which challenges much of the evidence in the prior literature. This finding is unlikely to be specific to the Netherlands, and could thus be extended to other stakeholder-oriented governance regimes.

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<sup>7</sup> We use double-censored random-effects tobit models to examine the relative popularity of dividends and share repurchases. In these models, the dependent variable is the ratio of share repurchases to total payout, but their configuration is otherwise identical to that of the random-effects probit models. The results are available on request.

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