The effect of ownership structure on dividend policy: Evidence from Turkey

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Abstract

Purpose – *The paper aims to investigate the impact of ownership structure on dividend policy of listed firms in Turkey. Particularly, it attempts to uncover the effects of family involvement (through ownership and board representation), non-family blockholders (foreign investors, domestic financial institutions and the state), and minority shareholders on dividend decisions in the post-2003 period as it witnesses the major economic and structural reforms.*

Design/methodology/approach – *The paper employs alternative dividend policy measures (the probability of paying dividends, dividend payout ratio and dividend yield) and uses appropriate regression techniques (logit and tobit models) to test the research hypotheses, by focusing on a recent large panel dataset of 264 ISE-listed firms (non-financial and non-utility) over a ten-year period 2003-2012.*

Findings – *The empirical results show that foreign and state ownership are associated with a less likelihood of paying dividends, while other ownership variables (family involvement, domestic financial institutions and minority shareholders) are insignificant in affecting the probability of paying dividends. However, all the ownership variables have a significantly negative impact on dividend payout ratio and dividend yield. Hence, the paper presents consistent evidence that increasing ownership of foreign investors and the state in general reduce the need for paying dividends in the Turkish market.*

Research limitations/implications – *Due to the absence of empirical research on how ownership structure may affect dividend policy and the data unavailability for earlier periods in Turkey, the paper cannot make comparison between the pre-and post-2003 periods. Nevertheless, this paper can be a valuable benchmark for further research.*

Practical implications – *The paper reveals that cash dividends are not used as a monitoring mechanism by investors in Turkey and the expropriation argument through dividends for Turkish families is relatively weak. Accordingly, the findings of this paper may benefit policy makers, investors and fellow researchers, who seek useful guidance from relevant literature.*

Originality/value – *To the best of the authors' knowledge, this paper is the first to examine the link between ownership structure and dividend policy in Turkey after the implementation of major reforms in 2003.*

Key words *Dividend policy, ownership structure effect, Istanbul Stock Exchange*

Paper type *Research paper*

1 Introduction

In their classic study, Berle and Means (1932) emphasised the predominance of widely held corporations where ownership structure is dispersed among small shareholders but the control is concentrated in the hands of managers. The image of Berle and Means widely held corporation is extensively accepted in finance literature as a common structural form for large firms in the well-developed common law countries (such as the US, UK, Canada, and Australia). In this respect, one of the most widely studied explanations for why firms pay dividends is the agency cost theory, which derives from the problems involved with the separation of management (the agent) and ownership (the principal), and the differences in managerial and shareholder priorities, also known as *the principal-agent conflict* (Jensen and Meckling, 1976). This theory argues that cash dividends can be used as a tool to mitigate agency problems in a company by reducing free cash flow and forcing management to enter the capital market for financing, hence leading to induce monitoring by the market (Rozeff, 1982; Easterbrook, 1984; Jensen, 1986). Prior research has paid extensive amounts of attention to the principal-agency conflict and mostly focused on the developed countries, where financial markets are well-regulated and relatively transparent; mostly contain the publicly-held firms with dispersed ownership and the control is in the hands of professional managers.

In contrast, outside the developed countries, renowned cross-country studies have provided evidence that concentrated ownership is the prevailing form of the ownership structure in most developing economies. For instance, La Porta *et al.* (1999) examined the ownership structures of large firms in 27 different countries and suggested that relatively a few of these firms are widely held; rather they are heavily concentrated and are commonly controlled by families or the states. Claessens *et al.* (2000) reported that single shareholder controls more than two-thirds of publicly listed East Asian firms and families dominate about 40% of all listed companies. Furthermore, Faccio *et al.* (2001) found that families, which often supplied a top manager, are the main players in East Asia and Western Europe. According to Shleifer and Vishny (1997), family-owned firms govern a majority of the developing economies in South America. Consequently, increasing evidence reveals that ownership structure is heavily concentrated in developing economies; mainly family-controlled firms are widespread around the world and engage a growing importance in the economic globe.

Moreover, Shleifer and Vishny (1997) argued that when large shareholders, especially family owners, hold almost full control, they tend to generate private benefits of control (such as expending the companies' cash flow, paying themselves extreme salaries, providing top managerial positions and board seats to their family members). In these cases, the prominent agency problem is therefore expropriation of the wealth of minority owners by the controlling

shareholders, which is the conflict between controlling shareholders (principal) and minority shareholders (principal), in other words *the principal-principal conflict.* Likewise, Villalonga and Amit (2006) stated that families tend to have more motivation to expropriate minority shareholders' wealth than any other controlling large shareholders. Anderson and Reeb (2003) emphasised that family owners may act for their own interests over the other investors, such as by lessening firm risk, enhancing their control at the cost of minority owners, and misusing internal resources by participating in non-profitable projects that benefit them. In this respect, Daily *et al.* (2003) suggested that agency cost theory may function differently in family-controlled publicly listed firms, and that prior findings from widely held corporations may not readily generalise into this setting. Accordingly, it is extremely important to consider ownership structure of companies in developing (emerging) markets in understanding dividend policy related to the agency problems in these markets.

As in many other emerging markets, the concentrated ownership structure (by large controlling shareholders) has been the prevailing form in Turkey, where corporate ownership is characterised by highly concentrated family ownership with the existence of other large shareholders such as foreign, institutional and state ownerships (Gursoy and Aydogan, 1999; Yurtoglu, 2003; IIF, 2005; Sevil et al., 2012). Prior studies (e.g. Ararat and Ugur, 2003; IIF, 2005; Aksu and Kosedag, 2006) pointed out various corporate governance problems and the lack of efficient transparency and disclosure practices experienced by Turkish firms until the early 2000s. These included the concentrated and pyramidal ownership structures dominated by families, inconsistent and unclear accounting and tax regulations, and weak minority shareholders' protection, which all create an environment that may easily foster corruption, share dilution, assets stripping, tunnelling, insider trading and market manipulation.[1]

However, the new Turkish government (following the November 2002 elections, which resulted in a one-party government, the political uncertainty to some degree faded away) signed a standby agreement with the IMF and began to implement major economic programs and structural reforms for a better working of the market economy, outward-orientation and globalisation, starting March 2003 (CMB, 2003; Adaoglu, 2008; Birol, 2011). Furthermore, Turkey's progress in achieving full membership of the EU in this period also provided the strongest motivation in establishing new reforms, rules and regulations in line with the EU directives and best-practice international standards to improve corporate governance and transparency and disclosure practices; therefore, to integrate its economy with Europe and to harmonise its institutions with those of the EU (IIF, 2005; Aksu and Kosedag, 2006).

In this context, the Capital Markets Board (CMB) of Turkey attributed great importance to improve communications with investors, issuers and other institutions in order to ensure that markets are functioning in a safer, more transparent and more efficient manner in accordance with regulations that were adopted in harmony with international norms and developments

[1] In fact, during the late 1990s, a considerably long list of cases in tunnelling took place in the Turkish public. Majority of these cases were simple resource transfers of controlling shareholders from their firms in the form of outright theft or fraud, whereas a number of listed firms' minority shareholders were harmed by these events; a bigger proportion represented wealth transfers from state banks to controlling owners of unlisted firms, involving in many cases the visible hands of politicians (Yurtoglu, 2003). Likewise, a number of well-publicised cases revealed that unfair treatment of minority shareholders was a serious corporate governance problem in Turkey since controlling families had the opportunities to expropriate profits from them, typically through the use of company assets or non-arm's length related party transactions (IIF, 2005).

(CMB, 2003). Accordingly, one of the most important developments[2] was that in cooperation with the World Bank and the Organisation for Economic Cooperation and Development (OECD), the CMB published its Corporate Governance Principles in 2003, which was aimed to improve the corporate governance practices of the firms listed on the Istanbul Stock Exchange (ISE).

Considering the implementation of various major economic and structural reforms starting with the fiscal year 2003, and with many areas improved in Turkish corporate governance practices, its capital market is still heavily concentrated and characterised by high family ownership (IIF, 2005; Caliskan and Icke, 2011). Also, the ISE attracted a significant amount of foreign investment during the period 2003-2012 (Adaoglu, 2008; CMB, 2012).[3] Moreover, the CMB of Turkey implemented much more flexible mandatory dividend policy regulations during this period, which provided more flexibility to the ISE-listed firms in setting their own dividend policies. In addition, the Turkish tax regime imposed an uneven tax treatment between capital gains and dividends for some investors at the beginning of 2006. Consequently, we argue that high stock-ownership concentration might have important implications on dividend policy decisions of the listed-firms in Turkey.

Accordingly, our paper empirically investigates the association between ownership structure and dividend policy, which is still unexplored in the emerging Turkish market, over a decade after Turkey implemented major economic and structural reforms as well as the publication of the CMB's Corporate Governance Principles in 2003. The paper firstly contributes to the dividend literature by providing insight about the role of ownership concentration on corporate payout decisions in an emerging market (a civil law originated country), which employed the common laws in order to integrate with world markets. Second, it examines the relationship between family involvement (through ownership and board representation) and dividend policy from the principal-principal conflict perspective to identify whether families tend to expropriate the wealth from minority investors through dividends after the implementation of major reforms in 2003. Third, it also focuses on investigating the effects of non-family blockholders (particularly, foreign investors, domestic financial corporations and the state) on dividend policy of Turkish firms over the relevant period. Finally, it further attempts to detect the relationship between minority shareholders and dividend policy in the Turkish market.

The remainder of this paper is organised as follows. Section 2 reviews the theoretical background and develops the research hypotheses. Sections 3-5 discuss the data sample, variables descriptions, and research design and models. Section 6 illustrates the empirical findings, and Section 7 concludes the paper.

2 Literature review and research hypotheses

2.1 Family control and dividend policy

[2] Some other significant developments included the adoption of International Financial Reporting Standards (IFRS), restructuring the public and private banking system, and enhancing of scrutiny and supervisory framework to minimise credit risk concentration and prevent insider lending, accelerating privatisation of state-owned enterprises, and creating private pension and mutual funds to enhance monitoring in public firms' corporate governance.

[3] This period was indeed greatly attracted to foreign investors. The ratio of stocks owned by foreign investors to total stocks in the ISE was 51.5% by the end of 2003 and steadily increased to 72.3% by the end of 2007. Probably, due to the 2008 global crisis, this ratio decreased to 67.5% in 2008 and showed a further slightly declining pattern in the following years to 65.8% by the end of 2012, which still revealed a serious contribution from foreign investors, holding about two-thirds of the total equities in custody in the ISE (CMB, 2003; 2012).

In most emerging economies, companies usually have controlling shareholders that hold significant fractions of stocks, typically founding families. La Porta *et al.* (1999) stated that family members involve directly in the management of their companies on almost all occasions; therefore, family control is a very effective organisation governance way of monitoring managers in order to provide more efficient management and supervision, which leads to zero or lower owner-manager agency cost (the principal-agent conflict), than other large shareholders or dispersed corporations. Nevertheless, due to the absence of sufficient monitoring, family owners (since they are the insiders) can increase access to the use of companies' funds that may lead to higher principal-principal conflicts.

Family owners may use their controlling power to exacerbate the principal-principal conflicts in various ways. For instance, Morck and Yeung (2003) identified the "other people's money" problem, which involves the situation in which families have significant control over a firm, with very little investment in that firm. Indeed, by the separation between cash flow and control rights through pyramidal company structures or multiple classes of voting power of shares, controlling shareholders can redirect resources to themselves and gain "private benefits of control", such as paying themselves extreme salaries and providing top managerial positions and board seats to their family members although they are not capable (Shleifer and Vishny, 1997). Another common form of expropriation of wealth from minority owners is referred to as "tunnelling". This is defined as the transfer of assets and profits, within a family-owned business group. In this case, the controlling family transfer assets and profits to firms in which they have higher ownership, from firms with lower ownership, through non-market prices (Johnson *et al*, 2000). In short, the principal-principal conflict may be the salient agency problem and seriously harm the interests of minority shareholders in family-controlled firms.

Another way in which families can exercise control is through board representation. In fact, top executives almost always come from the controlling family (La Porta *et al.*, 1999; Faccio *et al.*, 2001; Yoshikawa and Rasheed, 2010). The corporate governance literature suggests that a firm's board of directors can play an important role in mitigating agency problems, particularly by monitoring executive management (Fama and Jensen, 1983; Farinha, 2003). However, controlling-family members sitting on the boards can reduce the effectiveness of the board of directors as a monitoring mechanism by executing policies that benefit themselves and hence can increase the costs of potential expropriation of minority shareholders' wealth in the firm (La Porta *et al.*, 1999).

A few recent studies have investigated and reported mixed evidence concerning whether families either mitigate or exacerbate conflicts between controlling and minority shareholders, and how family control affects corporate dividend policy. Faccio *et al.* (2001) examined the relationship between dividend policy and ownership structure and control in East Asia, compared to a benchmark sample of West European firms. Their analysis showed that the prominent agency problem in both regions is wealth expropriation by controlling shareholders (predominantly the families) from outside shareholders. Especially, this type of expropriation is more likely to increase when the corporation is linked up with a subsidiary group of companies that are all governed by the same owner, which was found to be the case for about half of the firms in Western Europe and East Asia. In addition, the presence of multiple blockholders increased dividend payments in Western Europe but decreased in East Asia, implying that other large shareholders tend to help reduce the controlling shareholder's expropriation of minority owners in Europe, whereas they seem to exacerbate it in Asia.

Chen *et al.* (2005) reported a significant negative association between dividend payouts and family ownership of up to 10% of the firm's stockholdings and a positive correlation for family shareholding between 10% and 35% for only small Hong Kong companies. Moreover, Wei *et al.* (2011) found that families have lower cash dividend payouts and lower tendencies to distribute dividends compared to non-family firms in China. Gonzalez *et al.* (2014) examined the effects of family involvement on dividend policy and how family involvement influences agency cost problems between large and minority shareholders. Their results showed that family influence in relation to the amount and probability of dividend payments varies considerably according to the type of family involvement.

2.3 Other large shareholders, monitoring and dividend policy

Shleifer and Vishny (1986) suggested that if legal protection does not provide enough control rights to small investors, perhaps large shareholders might mitigate the shareholders conflict by an efficient monitoring of the management. Grossman and Hart (1980) argued that managements of the companies should be monitored, which must be effectively done by larger shareholders. The existence of such large shareholders can mitigate *the free rider problem* of monitoring managers and therefore reducing agency costs.

Large shareholders may take several distinct forms depending on the proportion of shares held and the type of legal owners, such as management or board ownership, family and foreign shareholders, the state and financial institutions ownerships (La Porta *et al.*, 1999). The identity of large shareholder can be an important factor in determining financial polices of corporations.

2.3.1 Foreign ownership and dividend policy

Foreign investors with large shareholdings might be efficient monitors of their companies in emerging markets, due to their expertise of establishing better global standards and practices. Further, foreign ownership increases foreign analysts' interests in these firms and it is true that foreign analysts generally ask managements to disclose their financial policies, providing more monitoring on the managements' activities and hence with less need for the dividend-induced monitoring device (Glen *et al.*, 1995; Manos, 2002; Jeon *et al.*, 2011). This suggests a negative relationship between foreign ownership and dividend payments. According to Glen *et al.* (1995), most industrial country investors often hold stocks of developing markets for their long-run growth potential, not for the short-term cash dividend income they will generate, which also suggests a negative correlation between foreign ownership and dividend payments.

Although foreign investors generally have substantial global investment experiences and are in a better position to assess a corporation's performance, it is however disputed whether foreign investors have information disadvantages in trading local stocks, due to geological, cultural and political differences. Therefore, the task of monitoring managements in emerging markets could be more difficult and costly for foreign investors, which suggests the importance of and the need for the dividend-induced capital market monitoring increase, with the increase in the percentage of foreign shareholdings, leading to a positive influence of foreign share-ownership on dividend payments (Manos, 2002; Jeon *et al.*, 2011).

There is limited evidence in understanding the effect of foreign investors on dividend policy in emerging markets. For instance, Lin and Shiu (2003) investigated foreign ownership in Taiwan and reported that foreign investors tend to hold shares with low dividend yields, whereas Manos (2002) in India and Jeon *et al.* (2011) in Korea found that they have a preference for

dividend-paying companies and therefore larger foreign ownership leads to distribute more dividends in these markets.

2.3.2 Institutional ownership and dividend policy

Dividends payments push corporations to enter the external capital markets for supplementary funding and thus increase the capital market monitoring (Rozeff, 1982; Easterbrook, 1984). However, Demsetz and Lehn (1985) and Shleifer and Vishny (1986) argued that institutional blockholders, such as pension funds, insurance companies, investment and unit trusts, and banks, might act as a monitoring mechanism on the firm's management, consequently reducing in general the need for high dividend payouts.

Zeckhauser and Pound (1990) argued that institutional shareholders are not likely to involve with direct monitoring, due to their arm's length investment perspective. In fact, institutions generally prefer to encourage firms to pay higher dividends, and so they have to approach to the external capital market for future financial requirements. Likewise, Farinha (2003) suggested that institutions might force companies to pay higher dividends to augment better monitoring by capital markets, especially when they think that their own direct monitoring exercises are inefficient or too costly. In this case, a positive relationship between institutional ownership and dividend payout ratio is expected.

Having analysed the influence of shareholder ownership identity on dividend policy, Kouki and Guizani (2009) reported that Tunisian firms paid out lower dividends when they had higher institutional ownership, consistent with the effective monitoring role of institutional investors. Contrarily, Abdelsalam *et al.* (2008) documented a positive association between institutional ownership and dividend policy decisions of Egyptian companies. Similarly, Manos (2002) found the impact of institutional ownership on the payout ratios of Indian firms was positive, which is inconsistent with the argument that the ability of institutions in terms of more effective monitoring reduces the need for the dividend-induced mechanism. Indeed, this was consistent with the dividend-induced monitoring preferences of institutions in India, reflecting that greater agency conflicts in the emerging Indian market, hence the level of direct institutional monitoring was inefficient.

2.3.3 State ownership and dividend policy

State ownership is another common form of concentrated control in some countries, particularly in countries with poor shareholder protection (La Porta *et al.*, 1999). It is a fact that state firms are generally extremely inefficient, since they tend to use firms to pursue political objectives and their losses result in massive deficiencies of their economies, which is contrary to the efficiency purpose for their existence (Kikeri *et al.*, 1992). Further, Gugler (2003) argued that state-controlled corporations are likely to contain *a double* principal-agent problem. Although the citizens are the ultimate owners, they do not have direct control on these companies but their elected representatives do. However, politicians might not vigorously or accurately monitor the state-owned corporation and this leads to even greater principal-agent conflicts between managers and the citizen owners of the state-owned corporations. In this respect, elected politicians, who are responsible for all government activities, may have a strong preference for dividends from a state-owned company, since dividend payments can be good enough to convince citizens that the corporation performs well.

Moreover, the awareness of massive failure of state companies that causes burdens on national budgets in most cases has recently generated a popular world-wide reaction, so called "*privatisation*" that substitutes governmental control with private cash flow ownership and control. Privatisation generally provides comparatively more effective organisational structures and a substantial enhancement in performance of privatised firms (Megginson *et al.,* 1994). However, it is possible that privatisation does not work as well as intended; for instance, when companies are privatised in the absence of large owners, which provides managers with more discretion. In these cases, agency problems stemmed from managerial control might increase; although the inefficiency of governmental control decreases, the problems of managerial discretion can be almost as severe as the former problems of governmental control in these companies (Shleifer and Vishny, 1997).

A few studies showed evidence that firms with high state ownership are characterised by high dividend payouts. Gugler (2003) found that principal-agent conflict is more severe in state-controlled firms in Austria. The study reported that state ownership and control have a positive effect on target payout ratios, and state-controlled firms in Austria are more reluctant to cut dividends, which is consistent with the managerial agency cost explanation. Wei *et al.* (2004) also showed that there is a significantly positive correlation between the state ownership and cash dividends in China. Similarly, Wang *et al.* (2011) and Lam *et al.* (2012) showed that Chinese firms with higher state ownership are likely to pay higher cash dividends. However, Kouki and Guizani (2009) found a significantly negative relationship between dividend per share and the state ownership in the context of emerging Tunisian market in contrast with the evidence of previously mentioned studies.

2.4 Minority shareholders and dividend policy

Conflicts of interest between corporate insiders (for instance, managers) or large controlling owners and outside investors (specifically minority shareholders) have been crucial to the studies of modern corporations (Berle and Means, 1932; Jensen and Meckling, 1976). Insiders may vary from country to country. For instance, in the US, the UK or Canada, where companies are relatively dispersed, typically their managers are in the controlling positions, whereas in most other countries - especially in emerging markets, companies are generally controlled by large shareholders, such as family owners (La Porta *et al.,* 1999). The insiders who control the companies' assets can use these funds for their own purposes without benefiting minority shareholders through various formats such as outright theft, misusing firms' resources, excessive salaries, asset sales (selling other companies that they control at favourable prices) to themselves and so on (Jensen, 1986; Shleifer and Vishny, 1997; Johnson *et al.,* 2000). Nevertheless, regardless of the identity of controlling shareholders, the victims are always the minority investors (La Porta *et al.,* 2000).

Even though minority shareholders have stronger protections in countries such as the US and UK, researchers hypothesised and reported a positive association between ownership dispersion among outside shareholders and dividend payout. The presence of large number of small investors leads to a lower ownership concentration level, which increases the possible agency problems associated with the free-rider problem due to the higher ownership dispersion and the need for outside monitoring. Therefore, Rozeff (1982) and Easterbrook (1984) hypothesised that minority shareholders desire higher dividend payout, since their ability of control over companies is weak. Indeed, a string of studies that followed Rozeff's (1982) work

reported a positive relationship between ownership dispersion and dividend payments in developed markets, including Schooley and Barney (1994), Moh'd *et al.* (1995) and Farinha (2003).

Moreover, Shleifer and Vishny (1997) argued that, in countries where minority investors do not have much protection rights, large investors (generally families, the states or banks) might have a controlling power on managers, but this does not still provide enough protection to existing and potential minority investors. In this case, La Porta *et al.* (2000) suggested that these minority shareholders would typically seek for dividend payments in order to reduce what is left for expropriation. However, in emerging markets such as China, where dividends are taxed as ordinary income but capital gains are not, small investors may have preference for capital gains over dividends (Wang *et al.*, 2011). According to Wei *et al.* (2004), small investors in China are too poorly informed for even the rights they essentially have, hence they have neither the incentive nor the ability to collect information and monitor the managements. They characteristically care about the appreciation or depreciation of shares they hold, and depend on short-run capital gains rather than cash dividend income. In this respect, an inverse relationship can be expected between the proportion of small investors' shareholdings and dividend payout ratio. In fact, Lam *et al.* (2012) reported that Chinese firms with higher public (small) ownership tend to pay lower cash dividends, reflecting the preference of small investors for capital gains over dividends, due to the advantageous tax treatment of capital gains and the weak legal protections for minority shareholders in China.

2.5 Research context in Turkey and hypotheses development

Firms listed on the ISE were subject to strict dividend policy regulations, when it first started to operate in 1986. According to the first mandatory dividend policy, the ISE-listed firms were obliged to distribute at least 50% of their distributable income as a cash dividend, which was known as "first dividend" in the Turkish capital market. Without paying the first dividend, all other dividend payments (e.g. payments to employers) or maintaining it as retained earnings, were not legally possible (Adaoglu, 1999). A limited number of studies (for example, Adaoglu, 2000; Aivazian *et al.*, 2003) conducted in early periods in Turkey reported that cash dividend payments were solely dependent on the firms' current year earnings as forced by regulations, which did not provide the ISE firms much flexibility to set their own dividend policies.

After the implementation of major reforms in 2003, the CMB of Turkey, however, imposed much more flexible mandatory dividend policy regulations. The CMB replaced the second mandatory dividend policy that forced the ISE firms to pay at least 20% of their distributable income as a first dividend but the listed firms did not have to pay the first dividend entirely in cash. They had the option of distributing it in cash dividends or stock dividends or a mixture of both, which was subject to the board of directors' decision. The total payment could not, however, be less than 20% of the distributable income for the fiscal year 2003. Further, for the fiscal year 2004, the CMB increased the minimum percentage of mandatory dividend payments for the ISE-listed firms from 20% to 30%, which also stayed at this level for the fiscal year 2005. Then, the minimum percentage of mandatory dividend payment level was again reduced to 20% in the fiscal year 2006 and remained at this level for the fiscal years 2007 and 2008. Nonetheless, from the fiscal year 2009 and onwards (2010, 2011 and 2012), the CMB decided to not determine a minimum dividend payout ratio and abolished mandatory minimum dividend payment distribution requirement for the ISE firms, which provided total freedom for

the ISE-listed firms to make their own dividend policy decisions. In this respect, the heavily concentrated ownership structures of the ISE firms might play a crucial role in determining their dividend policies in the post-2003 period.

Before 2006, a 15% withholding tax used to be imposed on all kinds of investment instruments (deposits, equities, bonds, mutual funds) regardless of the type of the investor (resident/non-resident, individual/corporate). However, the Turkish tax regime on investment instruments changed significantly at the beginning of 2006 (TSPAKB, 2007). Under the current Turkish tax system, cash dividends and capital gains are taxed differently. Table 1 illustrates a summary of the Turkish tax regime of capital gains and cash dividends on equity investments for the investors since 2006.

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As illustrated in the table, foreign investors, both individuals and corporations, are not subject to any taxes for capital gains derived from shares, whereas they are taxed with a 15% withholding tax rate for their cash dividends distributed on the shares they held. Similarly, domestic individual investors are not subject to any taxes for capital gains but they are subject to a 15% withholding tax for their cash dividend income. However, domestic corporations' taxation relatively differs from the other types of investors. Domestic corporations are not subject to any taxes for both capital gains and cash dividends that derived on equities of resident incorporations. It is also important to note that, even though domestic investors, both individuals and corporations, are exempt from taxation on capital gains, they are subject to 10% withholding tax for capital gains on the shares of investment trusts and exchange traded funds, if held less than one year, implying that the Turkish tax system encourages domestic investors to hold these type of shares for longer period.

Corporate dividend literature argues that uneven tax treatment of dividends and capital gains may affect investors' preferences and therefore dividend policy decisions of firms. For instance, *the tax preference theory* (Brennan, 1970; Elton and Gruber, 1970; Litzenberger and Ramaswamy, 1979) proposes that investors who receive favourable tax treatment on capital gains (lower taxes on capital gains than dividends) might prefer shares with none or low dividend payouts, since the income tax on dividends is greater and hence the high dividend payments will increase shareholders' tax burden. Consequently, due to the uneven taxation of capital gains and cash dividends in Turkey, the tax factor may also play a role in understanding the relationship between ownership structure of the firms, in other words various types of investors holding shares of the firms, and cash dividend policy in the emerging Turkish market.

Moreover, Turkey offers an ideal setting to investigate the relationship between family involvement and cash dividends since its corporate ownership structure is characterised by highly concentrated family ownership. Although some aspects of the family-owned firm structure sharply contrast with the basic concepts of corporate governance, other aspects of it may be advantageous in many cases. In family-owned companies, management and ownership are not separated, and Turks highly value close family ties. These ties, or sense of belonging to a larger social group, have done well in motivating manager employees to work hard for the well-being of the company. Therefore, overlapping ownership and management may help to minimise the managerial agency problems (Izmen, 2003). However, by upholding tight control, family members have in some instances obtained well-paid jobs and perks from the company, even if they are not capable. Further, controlling families have had the opportunities to expropriate

profits from minority investors, typically through the use of company assets or non-arm's length related party transactions (IIF, 2005). Also, Turkish families mostly generate the control through the presence of business groups, which are affiliations of industrial and financial companies, organised under the legal form of a "holding company" (Yurtoglu, 2003). Hence, the controlling families may have strong initiatives to expropriate wealth of minority shareholders, which will exacerbate the principal-principal conflict. If this is the case, families would prefer lower dividend payments to maintain cash flows that they can potentially expropriate. Accordingly, this implies a negative relationship between family ownership and dividend payout in the Turkish market.

In addition, tax considerations may also have an effect on families' attitudes towards cash dividends. In Turkey, domestic individual shareholders and foreign investors (both individuals and corporations) have tax advantages on capital gains over cash dividends; hence, they may prefer capital gains based on the tax preference theory and impose families to pay none or lower dividends, which implies a negative relationship between family ownership and dividend payout. On the other hand, uneven tax treatment may not be a concern for families, due to different clienteles with their own tax category circumstances consistent with the tax clientele theory. For instance, domestic Turkish corporations (both financial and non-financial corporations) generally have a neutral tax-treatment with respect to cash dividends and capital gains. Combining the ideas from the principal-principal conflict based on the expropriation argument and tax considerations, as well as the negative relationship generally reported from other emerging markets reported by a few studies, the following hypothesis can be formulated:

H1: There is a negative relationship between family ownership and dividend policy in Turkey.

Another basic characteristic of Turkish firms are insider boards in addition to concentrated family ownership. Owner families govern the boards of Turkish-listed firms and the boards are generally used as an internal mechanism of control by the controlling families (Yurtoglu, 2003; Caliskan and Icke, 2011). Further, Yurtoglu (2003) reported that at least half of the board directors are also members of the owner family in the family-controlled Turkish companies. According to the IIF (2005) report, 80% of listed companies in Turkey had at least one family member on the board and more than one-third of the board directors were, on average, from the controlling family

Even though many family firm boards have non-executive directors, they are likely to be small minorities in terms of numbers (hence taking little parts on the board) and they generally serve on the board of subsidiaries, which also minimises their power. In addition, the existence of the independent members on the boards is very limited (IIF, 2005; Ararat *et al.*, 2011; Caliskan and Icke, 2011). Hence, it can be argued that families generally dominate the boards of the ISE-listed firms they control by their direct involvement in many cases, and easily influence managerial decisions over the study period. Consistent with the negative relationship between family ownership and dividend policy anticipated from the previous discussion, we also hypothesise that family control through the board negatively affects dividend policy decisions.

H2: There is a negative relationship between the number of family members on board and dividend policy in Turkey.

From the agency cost perspective, the size of a board can play a significant role in monitoring executive management. Larger boards can provide greater expertise and diversity of specialisation as well as outside contacts that a firm may lack internally, and hence more efficient monitoring (Fiegener *et al.*, 2000; Gabrielsson, 2007). However, Jensen (1993) argued that large boards may be less efficient than smaller boards, since it can be more difficult to coordinate between large numbers, and if a board appropriately small with a sufficient number of independent directors, it can scrutinize its executive managers in much better way. Based on Jensen's (1993) argument, large boards might indicate weak monitoring. In our context, Turkish families are unlikely to appoint boards that will limit their control over their firm's resources and therefore regardless of the size of boards, smaller or larger, it is expected to have a weak monitoring role.

Hence, we assume that the Turkish firms will substitute such weak monitoring services with paying dividends, which is in line with the substitution hypothesis (La Porta et al., 2000). Therefore, the following hypothesis is formulated:

H3: There is a positive relationship between board size and dividend policy in Turkey.

Since Turkey has a liberal foreign policy, there are no constraints on foreign investments, repatriation of capital and profits. Foreign investors (both individuals and corporations) can freely buy and sell all types of securities and other capital market instruments on the condition that they have to use a Turkish intermediary for their capital market activities such as purchasing or selling shares, repo, portfolio management, investment consultancy, underwriting, and so on (TSPAKB, 2007; 2012).

After the implementation of the various major economic and structural reforms, including the publication of the CMB Principles of corporate governance in 2003, significant improvements have been observed in many areas in terms of the legal and institutional environment for corporate governance and transparency and disclosure practices in Turkey (IIF, 2005; Caliskan and Icke, 2011). In addition, the big Turkish financial intermediaries may help prevent the information asymmetry that foreign investors suffer, while they are investing in this market. Since the Turkish stock market became a promising emerging market with a fast growth, it has attracted a significant amount of foreign investment in the post-2003 period (CMB, 2012; Adaoglu, 2008). This may indicate that foreign investors invest for stocks in Turkish market for their long-run growth potential, not for the short-term cash dividend income, consistent with Glen *et al.*'s (1995) statement. Moreover, the uneven tax treatment between capital gains and cash dividends, imposed by the Turkish tax regime, which provides foreign shareholders with tax advantages for capital gains over dividends, also implies that foreign investors possibly prefer none or lower dividend payouts in order to reduce their tax burden on cash dividends. Therefore:

H4: There is a negative relationship between foreign ownership and dividend policy in Turkey.

Greater attention has been paid to the monitoring role of institutional investors in dividend policy literature. A number of studies investigated the impact of institutional investors on dividend policies of firms listed in emerging markets; however, they generally reported evidence supporting two opposing arguments. It is argued that institutional shareholding has a positive impact on the dividend policy, consistent with the argument that greater agency conflicts and poor legal protection given to the investors in emerging markets mean institutional investors fail to directly monitor management, hence they prefer dividend-induced capital market

monitoring. Contrarily, another argument suggests that there is a negative relationship between institutional ownership and dividend payout ratio, which is in line with the argument that institutional investors act as a monitoring mechanism on the firm's management, consequently reducing, in general, the need for high dividend payouts.

In Turkey, two legal entities, namely Turkiye Is Bankasi and OYAK Group, are the most common domestic financial institutions controlling a number of ISE-listed companies (Yurtoglu, 2003). Apart from these two corporations, the role of institutional investors in corporate governance is still new and the sector is underdeveloped (IIF, 2005). However, the CMB of Turkey put serious efforts in creating private pension and mutual funds in 2003 to enhance monitoring in public firms' corporate governance (CMB, 2003; Aksu and Kosedag, 2006). Although the CMB-regulated pension and mutual funds were relatively small at first, they have been growing. Supposedly, as their assets under management increase, they could become an important market player if they have the right incentives to contribute actively in the governance of the firms in which they invest (OECD, 2006). Accordingly, this implies that institutional investors may act as a monitoring mechanism on the firm's management in Turkey, consequently reducing, in general, the need for high dividend payouts. Therefore, we hypothesise that:

H5: There is a negative relationship between domestic institutional ownership and dividend policy in Turkey.

A large number of state-owned enterprises (SOEs) were founded and managed by the state during 1980s (Kepenek and Yenturk, 1996). However, the adoption of *privatisation* as one of the essential tools of the market economy was started in Turkey, from 1986 onwards, in the hope of reducing the size of the government and public spending, and increasing private sector involvement and foreign direct investment (Karatas, 2009). Furthermore, along with the implementation of major reforms in 2003, the new Turkish government accelerated the privatisation programme, which included the divestiture of considerably large SOEs. The new stage of privatisation process attracted a great amount of foreign direct investment (FDI) to Turkey and foreign corporations, partnering with powerful domestic collaborators, managed to obtain the ownership of these large SOEs. As a result, together with the abolition of legal barriers to enter the Turkish market, a substantial lessening in the state's direct engagement in the economy, increasing private sector, and FDI involvement and ownership may also indicate a better corporate governance and transparency and disclosure practices environment in Turkey (IIF, 2005; Aksu and Kosedag, 2006; Karatas, 2009).

Privatisation generally provides reasonably more effective organisational structures and a substantial improvement in performance of privatised corporations (Megginson *et al.*, 1994; Lopez-de-Silanes, 1994). However, it is also possible that privatisation may not work as well as intended and may lead to increases in agency costs of managerial control that can be almost as serious as the political control in these companies (Shleifer and Vishny, 1997). Indeed, the important aspect determining the efficiency of an enterprise is not whether it is state-owned or privately owned, but how it is managed (Cook and Kirkpatrick, 1988). In this context, a few researchers (Wei *et al.*, 2004; Wang *et al.*, 2011; Lam *et al.*, 2012) reported a positive relationship from China, whereas Kouki and Guizani (2009) found a negative relationship in Tunisia, between state ownership and dividend payout policy. Therefore, the following opposing hypotheses can be formulated:

H6a: There is a negative relationship between state ownership and dividend policy in Turkey.

H6b: There is a positive relationship between state ownership and dividend policy in Turkey.

The CMB of Turkey re-introduced the mandatory dividend policy starting with the fiscal year 2003 until 2008 (however, it was much more flexible than the first mandatory dividend policy that imposed to pay 50% of distributable earnings as cash dividends in the earlier years). The purpose for re-introducing the mandatory dividend policy was to protect minority shareholders rights against the controlling shareholders, since Turkey has a history of poor culture of corporate governance, transparency and disclosure practices, and unfair treatment of minority shareholders (IIF, 2005; Yurtoglu, 2003). Indeed, Turkish firms are highly dominated by families and generally attached to a group of companies, where the controlling shareholders, typically families, often use a pyramidal structures or dual-class shares to augment control of their firms (Kirkulak and Kurt, 2010).

From this perspective, it implies that minority shareholders in Turkey might have a taste for higher dividends, to reduce the risk of expropriation of their wealth by controlling shareholders, as proposed by La Porta *et al.* (2000) and therefore increasing outside monitoring through cash dividend payments, consistent with a number of studies (Rozeff, 1982; Schooley and Barney, 1994; Moh'd *et al.*, 1995; Manos, 2002; Farinha, 2003) reported a positive relationship between minority owners and payout policy. Therefore:

H7: There is a positive relationship between minority shareholders ownership and dividend policy in Turkey.

3 Data sample

First, all companies listed on the ISE (during the period 2003-2012) are considered, including "dividend-paying" and "non-dividend paying" firms to prevent the sample selection bias.[4] Second, financial sector (banks, insurers, pension funds, investment trusts) companies and utilities (gas, electric, water) are excluded, since they are governed by different regulations and follow arguably different investment and dividend polices. Finally, the sample is further narrowed down to firms whose accounting and financial data is available on DATASTREAM, whereas companies' ownership and incorporation dates are compiled from the annual reports published in the Public Disclosure Platform (KAP) of the ISE and companies' official websites. The validity of the data is also cross checked with OSIRIS. The Stock Exchange Daily Official List (SEDOL) codes and International Security Identification Numbers (ISIN) of the companies are used to match companies between different databases.

INSERT TALE 2 HERE

The sample selection procedure results in a panel dataset of total 264 companies (non-financial and non-utility) listed on the ISE during the period 2003-2012, as summarised in Panel

[4] Since the purpose of our study is to examine the effect of ownership structure on dividend policy in Turkey after the implementation of major reforms in 2003, we constructed our data sample in the post-2003 period. It would be worth if we could extend our sample period to the pre-2003 period to make comparison analysis and identify whether there is significant changes between the pre-and post-the 2003 major reforms. However, we suffer from data unavailability regarding the pre-2003 period, especially ownership structure information, due to the previously mentioned reasons associated with the absence of adequate transparency regulations and disclosure practices.

A in Table 2. In order to minimise possible survivorship bias, both companies that delisted (due to the mergers and acquisitions, business failure or any other process leading to delisting) and companies listed in the different times during this period are all considered and included in the sample. As illustrated by Panel B in Table 2, the ISE-listed companies are increasing every year because of the new listed firms. Due to the delisted and newly listed companies, the sample is not the same for each year but rather it increases during the 10-year period from 2003 to 2012, hence this type of panel is called unbalanced panel data. Panel C in Table 2 presents the distribution of the sampled Turkish companies across industries. The sample is classified into 14 different industries based on ICB codes. However, the sample has a majority of companies in only four different industries, namely personal & household goods, industrial goods & services, construction & materials and food & beverage (18.6%, 17.4%, 13.3% and 11.7% respectively), which are all making up to 61% of all companies in the sample.

4 Variables descriptions

We employ three different variables to proxy for the dependent variable. The probability of paying dividends is a binary variable, which indicates that such a firm did (DPAY = 1) or did not (DPAY = 0) pay dividends in any given year during the period 2003-2012. The intensity of paying dividends is measured by two variables; dividend payout ratio and dividend yield. Dividend payout ratio (DPOUT) is calculated as the dividend per share is divided by the earnings per share, whereas dividend yield (DYIELD) is measured as the ratio of dividend per share to price per share for a firm. These two variables take a positive value if such a firm paid dividends and they take on a value of zero if the firm did not.

The following explanatory variables are used as the test variables in the multivariate analyses. Two variables are employed to assess the effect of family involvement. Family ownership (FAMILY) is measured as the percentage of total outstanding shares of the firm held by families, including family members, family managers and family-controlled holding companies, in line with prior studies such as Chen *et al.* (2005), Setia-Atmaja *et al.* (2009), Yoshikawa and Rasheed (2010), Wei *et al.* (2011) and Gonzalez *et al.* (2014). Family control through the board (FAMBOARD) is defined as the number of family directors on the board based on surnames of the founding families[5] (Yoshikawa and Rasheed, 2010; Wei *et al.*, 2011). Further, board size (BOARD) is measured as the number of directors on the board (Chen *et al.*, 2005; Setia-Atmaja *et al.*, 2009).

Moreover, foreign ownership (FOREIGN) is adopted in the same manner of studies including Lin and Shiu (2003) and Jeon *et al.* (2011), and it is measured as the percentage of shares of the firm held by foreign corporations, foreign financial institutions and foreign nationals in a given year during the research period. Domestic institutional ownership (INST) refers to the sum of percentage of Turkish financial institutions such as banks, pension funds, investment trusts and insurers out of total capital shares of the firm (in line with studies such as Manos, 2002 and Fairchild *et al.*, 2014). Following Wei *et al.* (2004), Kouki and Guizani (2009), Wang *et al.* (2011) and Lam *et al.* (2012), state ownership (STATE) is measured as the percentage of shares of the firm held by the central government and its wholly owned enterprises in a fiscal year over the period 2003-2012. The last proxy for ownership structure (DISP)

[5] These statistics may even understate the true extent of the family control in boards since the study relied on a comparison of family names (surnames) in collecting the information regarding family members on boards.

represents stock ownership dispersion (Rozeff, 1982; Schooley and Barney, 1994; Moh'd *et al.*, 1995) and it is measured in a similar manner to Manos (2002) and Farinha (2003), which is the total percentage of shares owned by a large number of small (minority) shareholders, who held less than 5% of the outstanding shares of the firm.[6]

The following firm-specific variables are the control variables that have been observed in the literature in influencing dividend policy, which might have also been important factors of dividend policy decisions in the Turkish market. Particularly, return on assets (ROA), the firm's market-to-book ratio (M/B), debt policy (DEBT), firm age (AGE) and firm size (SIZE). It is predicted that return on assets (profitability), firm age and firm size have a positive impact, whereas market-to-book ratio (growth) and debt have a negative effect on the cash dividend payments of ISE-listed firms.

Finally, since the sample covers a relatively long time period, *year dummies* (YEAR) are added in all regression models to control for unobserved time-varying factors effect, such as the regulatory changes, different periods of the economic cycle, and macroeconomic dynamics, on dividend policy (Chen *et al.*, 2005; Setia-Atmaja *et al.*, 2009; Wei *et al.*, 2011). The *industry dummies* (INDUSTRY) are employed to control for industry-specific effects for ISE-listed firms.

5 Research design and models

We compute random effects logit and tobit regressions models for our multivariate analyses.[7] Since three different dependent variables are employed, the type of the dependent variable defines the appropriate econometric technique. Therefore, logit estimation is applied when the dependent variable is the probability of paying dividends (DPAY), which is a binary variable (0/1). For dividend payout ratio (DPOUT) and dividend yield (DYIELD) variables, which are left censored at zero and contain a mixture of continuous and discrete values, tobit estimations are used.

Furthermore, the marginal effects (economic significance) of the independent variables in all logit and tobit models are also calculated in order to provide further interpretations of the estimation coefficients (statistical significance). The marginal effects show the marginal impact of each independent variable on the dependent variable at the mean values of other independent variables. In addition, *one-year lag values* of the independent variables are used in all estimations to mitigate the problem of endogeneity.

Accordingly, the corresponding logit and tobit models are constructed as below:

Model 1: $$Logit\ (DPAY)_{i,t} = \alpha + \beta_1 FAMILY_{i,t-1} + \beta_2 FAMBOARD_{i,t-1} + \beta_3 BOARD_{i,t-1} + \beta_4 FOREIGN_{i,t-1} + \beta_5 INST_{i,t-1} + \beta_6 STATE_{i,t-1} + \beta_7 DISP_{i,t-1} + \beta_8 ROA_{i,t-1} + \beta_9 M/B_{i,t-1} + \beta_{10} DEBT_{i,t-1} + \beta_{11} AGE_{i,t-1} + \beta_{12} SIZE_{i,t-1} + \sum_{t=1}^{T} \beta_t YEAR_{i,t} + \sum_{j=1}^{n} \beta_j INDUSTRY_{j,i,t} + \varepsilon_{i,t-1}$$

[6] Under Turkish mandatory provisions and the CMB Principles, all types of shareholders, who own more than 5% of any listed company's capital, either directly or indirectly should be disclosed to the public (CMB, 2003; 2012). Therefore, shareholders who hold less than 5% are categorised as small investors.

[7] We also use pooled logit and tobit regressions models; however, our tests show that the random effects models (panel) are more favourable than the pooled models, and therefore we only report the results from the random effects logit and tobit models in estimating the impact of ownership structure on dividend policy in the Turkish market.

Model 2: $Tobit\ (\text{DPOUT})_{i,t} = \alpha + \beta_1 \text{FAMILY}_{i,t-1} + \beta_2 \text{FAMBOARD}_{i,t-1} + \beta_3 \text{BOARD}_{i,t-1} + \beta_4 \text{FOREIGN}_{i,t-1} + \beta_5 \text{INST}_{i,t-1} + \beta_6 \text{STATE}_{i,t-1} + \beta_7 \text{DISP}_{i,t-1} + \beta_8 \text{ROA}_{i,t-1} + \beta_9 \text{M/B}_{i,t-1} + \beta_{10} \text{DEBT}_{i,t-1} + \beta_{11} \text{AGE}_{i,t-1} + \beta_{12} \text{SIZE}_{i,t-1} + \sum_{t=1}^{T} \beta_t \text{YEAR}_{i,t} + \sum_{j=1}^{n} \beta_j \text{INDUSTRY}_{j,i,t} + \varepsilon_{i,t-1}$

Model 3: $Tobit\ (\text{DYIELD})_{i,t} = \alpha + \beta_1 \text{FAMILY}_{i,t-1} + \beta_2 \text{FAMBOARD}_{i,t-1} + \beta_3 \text{BOARD}_{i,t-1} + \beta_4 \text{FOREIGN}_{i,t-1} + \beta_5 \text{INST}_{i,t-1} + \beta_6 \text{STATE}_{i,t-1} + \beta_7 \text{DISP}_{i,t-1} + \beta_8 \text{ROA}_{i,t-1} + \beta_9 \text{M/B}_{i,t-1} + \beta_{10} \text{DEBT}_{i,t-1} + \beta_{11} \text{AGE}_{i,t-1} + \beta_{12} \text{SIZE}_{i,t-1} + \sum_{t=1}^{T} \beta_t \text{YEAR}_{i,t} + \sum_{j=1}^{n} \beta_j \text{INDUSTRY}_{j,i,t} + \varepsilon_{i,t-1}$

6 Empirical findings

Table 3 shows the descriptive statistics for the research variables used in the multivariate analyses. The panel dataset (unbalanced) includes 264 ISE-listed firms (non-financial and non-utility) with 2,112 firm-year observations over[8] the period 2003-2012.

INSERT TABLE 3 HERE

As the table demonstrates, the mean of DPAY is 0.339, indicating that ISE firms paid dividends in almost 34 % of the total 2,112 firm-year observations, whereas in the rest of the 66% of the total observations they did not. On average, DPOUT reveals that the sampled firms had the dividend payout ratio of 24.3%, while they gained the dividend yield (DYIELD) of just below 2% over the entire period. With regard to ownership structure, ISE firms are highly concentrated in the hands of families (39.4%) followed by foreign investors (12.7%). Other blockholders show relatively lower shareholdings on average; domestic financial institutions hold about 4.1% and the state owns only around 1.6%, possibly reflecting the accelerated privatisation programme imposed by the government over the research period, whereas minority shareholders hold almost 36% of the outstanding shares of the ISE-listed companies. Furthermore, it is found that at least one family member is on the board, which are generally sized of seven directors on average. The statistics (DEBT and ROA) report that firms make about 25% debt financing in their capital structure and they had only approximately 2% of the returns on their total assets invested over the period. The M/B variable demonstrates a mean market-to-book ratio of 1.508, which is higher than 1, suggesting that ISE firms have, on average, a good prospect of expected growth opportunities.

INSERT TABLE 4 HERE

Table 4 displays the results of Pearson's correlation and Variance Inflation Factors (VIF) for the independent variables included in the multivariate analyses. The table reveals that there are significant relationships between independent variables; however, there is no high correlation between any two of the variables, although a few variables are moderately correlated. Moreover, the VIF statistics are further used to check whether multicollinearity exists between independent

[8] Each research variables has 2,112 firm-year observations, except dividend payout ratio (DPOUT), which has 2,066 firm-year observations. When the firm makes losses, its earnings per share becomes negative and although that firm pays some amount of dividends, its dividend payout ratio will be negative since payout ratio is calculated as dividend per share divided by earnings per share. However, a firm's dividend payout ratio cannot be negative; therefore such observations are excluded while measuring the DPOUT variable.

variables. As a rule of thumb, the VIF values larger than 10 generally suggest multicollinearity. Tolerance (calculated as 1/VIF) is also computed to check the degree of multicollinearity; if a tolerance value is lower than 0.1, which corresponds to a VIF value of 10, it implies multicollinearity. As reported in the table, none of the VIF values exceeds 10, nor are the tolerance values smaller than 0.1, the results therefore suggest that there is no serious multicollinearity.

Table 5 reports the results of logit and tobit regressions. Particularly, Model 1 presents the random effects logit estimations on the probability of paying dividends, whereas Model 2 and Model 3 in the same table show the random effects tobit estimations on dividend payout ratios and dividend yields of ISE-firms, respectively.[9]

INSERT TABLE 5 HERE

The results indicate that Model 1, 2 and 3 are all overall statistically significant at the 1% level as evidenced by the Wald X^2 tests. Similarly, the likelihood-ratio tests are statistically significant at the 1% for Model 1, 2 and 3, indicating that the proportion of the total variance, contributed by the panel-level variance component, *rho*, values are significantly different from zero (0.6231, 0.3309 and 0.5221 respectively). This suggests that panel (random effects) models are more favourable than pooled models.

In order to investigate how family involvement influences dividend policy, two family effect variables are created, namely family share ownership (FAMILY) and family control through the board by family members (FAMBOARD). The logit regression (Model 1) shows no significant relation between the family involvement variables and the probability of paying dividends, since the coefficients and the marginal effects of both variables are negative but not statistically significant at any conventional significance levels. This is inconsistent with the expropriation argument proposed by Sheleifer and Vishy (1997), Anderson and Reeb (2003) and Villalonga and Amit (2006). However, the tobit regressions (Model 2 and 3) reveals contradictory results to the logit estimations. Particularly, the coefficients of FAMILY ($z = -2.51, p < 0.05$ in Model 2 and $z = -1.92, p < 0.10$ in Model 3) and FAMBOARD ($z = -1.78$, $p < 0.10$ in Model 2 and $z = -2.26, p < 0.05$ in Model 3) are both negative and statistically significant in tobit models. Further, the marginal effects of FAMILY, all else being equal, suggest that a 10 percentage point increase in this variable will approximately results in a 2.012 percentage point decrease in the level of dividend payout ratio and a 0.806 percentage point decrease in the amount of dividend yield. Similarly, the marginal effects show that a 10 percentage point increase in FAMBOARD will roughly decrease the dividend payout ratio by a 0.039 and drop the dividend yield by a 0.116 percentage point for an average firm.

This negative relationship is consistent with the evidence provided by Faccio *et al.* (2001) in East Asia and Wei *et al.* (2011) in China. Therefore, the tobit results imply that families in Turkey may exacerbate expropriation of wealth from minority investors by paying lower dividends in line with the principal-principal conflict. Overall, the results reveal that family involvement does not affect ISE firms' decisions to pay dividends or not, but it pushes them to distribute lower dividends. Hence, we partially accept *H1* and *H2* that family involvement (through both share ownership and board representation) has a negative effect on

[9] It is worth noting that since we use one-year lagged values of the independent variables to mitigate the endogeneity problem, the logit and tobit analyses of the dividend payment decisions are based on 1,846 firm-year observations, except the tobit analysis of dividend payout ratios, which is based on slightly lower firm-year observations of 1,800 due to the previously explained problem associated with measuring payout ratios.

dividend policy in Turkey. Nevertheless, considering the non-significant impact of Turkish families on the likelihood of paying dividends, the evidence for expropriation argument for Turkish families is relatively weak - if the expropriation argument using dividends holds true for Turkish families, their control should also be significantly and negatively affecting the probability of paying dividends.

The results in Table 5 report that there is strong evidence of a positive relationship between board size (BOARD) and dividend payment decisions. The coefficients on the BOARD are positive and statistically significant in all models ($z = 3.09, p < 0.01$ in Model 1, $z = 2.51, p < 0.05$ in Model 2, and $z = 3.33, p < 0.01$ in Model 3). The marginal effects of this variable, other things being equal, indicate that a 10 percentage point increase in BOARD will approximately result in a 0.264 percentage point increase in the likelihood of paying dividends, a 0.158 percentage point increase in the amount of dividend payout ratio, and a 0.213 percentage point increase in the amount of dividend yield for an average firm. This positive relationship is in line with the substitution hypothesis (La Porta *et al.*, 2000) and thus this leads us to accept *H3.*

Among non-family blockholders, foreign ownership (FOREIGN) has a significantly negative impact on the ISE-firms' corporate dividend decisions. The logit regression (Model 1) shows that the coefficient estimate on the FOREIGN variable is negative and statistically significant ($z = -2.05, p < 0.05$). The tobit regressions (Model 2 and 3) show similar results; particularly, negative and statistically significant coefficient estimates on FOREIGN ($z = -3.28, p < 0.01$ and $z = -1.97, p < 0.05$ respectively). The marginal effects of this variable, all else being equal, suggest that a 10 percentage point increase in foreign ownership will approximately result in a 2.125 percentage point decrease in the likelihood of paying dividends, a 2.593 percentage point drop in the dividend payout ratio, and a 1.652 percentage point decline in the dividend yield for an average ISE-listed firm. This means that higher foreign ownership leads to lower dividend payments, which is consistent with Glen *et al.* (1995) and Lin and Shiu (2003), and may suggest that foreign investors, in Turkey, invest in stocks for their long-run growth potential, rather than the short-term dividend income. The evidence might also be reflecting the uneven tax treatment between capital gains and cash dividends imposed by the Turkish tax regime, which provides foreign shareholders with tax advantages for capital gains over dividends, and therefore foreign investors possibly prefer none or lower dividend payouts in order to reduce their tax burden on cash dividends. Therefore, we accept *H4.*

Moreover, the results indicate that domestic financial institutions (INST) shareholdings have no impact on the ISE firms' decisions on whether to pay dividends. The coefficient and marginal effect of the variable are negative but not statistically significant at any conventional significance levels in Model 1. On the other hand, the tobit regressions detect that INST significantly and negatively affects the level of payout ratio ($z = -2.37, p < 0.05$ in Model 2) and the amount of dividend yield ($z = -1.88, p < 0.10$ in Model 3). The marginal effects of INST suggest that a 10 percentage point increase in this variable will approximately results in a 2.251 percentage point decrease in the payout ratio and a 0.914 percentage point decrease in the dividend yield for an average firm. Accordingly, the evidence suggests that although Turkish institutional investors have no significant impact on the likelihood of paying dividends, their increasing ownership in general reduce the need for high dividend payments. Hence, we partially accept *H5.*

The results further show that there is strong evidence of a negative relationship between state ownership (STATE) and dividend policy in Turkey. The coefficients on the STATE variable are negative and statistically significant in all models ($z = -1.97, p < 0.05$ in Model 1, z

$= -2.45, p < 0.05$ in Model 2, and $z = -2.35, p < 0.05$ in Model 3). The marginl effects of this variable, other things being equal, indicate that a 10 percentage point increase in STATE will approximately result in a 2.745 percentage point decrease in the likelihood of paying dividends, a 2.931 percentage point drop in the dividend payout ratio, and a 1.670 percentage point decline in the dividend yield for an average firm. This finding is consistent with Kouki and Guizani (2009) but is in contrast with the evidence of Gugler (2003), Wei e*t al.* (2011), Wang *et al.* (2011) and Lam *et al.* (2012). Indeed, the evidence may imply that the implementation of major reforms in 2003, including the accelerated privatisation programme executed by the Turkish government, provide relatively more efficient ownership structures which resulted in better corporate governance, transparency and disclosure practices environment in Turkey, and therefore the state ownership is involved with less need for the dividend-induced capital market monitoring. Hence, we accept *H6a.*

In the same manner with FAMILY, FAMBOARD and INST variables, minority (small) investors' ownership (DIPS) has no significant effect on the likelihood of paying dividends but is found to have significant and negative coefficients in the panel tobit models ($z = -2.40, p < 0.05$ in Model 2 and $z = -1.69, p < 0.10$ in Model 3). The marginal effects of the variable suggest that a 10 percentage point increase in DISP will decrease the dividend payout ratio by about a 2.291 percentage point and the dividend yield by roughly a 0.221 percentage point. This evidence of the inverse relationship between minority shareholders and dividend policy is contrary to the statement of La Porta *et al.* (2000), that minority shareholders might have a taste for higher dividends to reduce the risk of expropriation of their wealth by controlling shareholders, and inconsistent with a number of studies (Rozeff, 1982; Schooley and Barney, 1994; Moh'd *et al.*, 1995; Manos, 2002; Farinha, 2003). Nevertheless, it implies that small shareholders have preferences for capital gains over cash dividends, perhaps to avoid tax burden due to a favourable tax treatment on capital gains provided by the Turkish tax regime, which is in line with Lam *et al.* (2012), who reported a negative relationship for the same reason in China. Therefore, we reject *H7.*

Finally, Table 5 shows that five control variables (firm-specific factors) are found to be robustly significant in all models, influencing corporate dividend decisions in Turkey. As predicted, the results from logit and tobit regressions indicate that profitability (ROA), firm age (AGE) and firm size (SIZE) have positive coefficients and marginal effects, and investment opportunities (M/B) and debt (DEBT) have negative coefficients and marginal effects. These results suggest that more profitable, more mature and larger sized firms are more likely to pay dividends (and distribute higher dividends), whereas firms with higher growth opportunities and with more debt are less likely to pay dividends (and distribute lower dividends) in the Turkish market.

Furthermore, we conduct additional tests by separating the two family involvement variables in each regression model to check whether the main results are sensitive to the usage of each family influence variable alone. As illustrated in Table 6, the findings are not significantly different – in fact, very similar – to what we report in Table 5.

INSERT TABLE 6 HERE

7 Conclusion

In this paper, we investigate the effect of ownership structure on dividend policy in Turkey, after the implementation of major reforms in 2003, where an ideal setting is provided to study the role of ownership concentration on corporate dividend decisions in an emerging market (a civil law originated), which employed the common laws in order to integrate with world markets.

Our results indicate that ISE-listed firms have highly concentrated ownership structures and are mostly owned by families followed by foreign investors, while other blockholders, Turkish financial institutions and the state, show relatively lower shareholdings. In this context, we find that foreign and state ownership are associated with a less likelihood of paying dividends, while other ownership variables are insignificant in affecting the probability of a Turkish firm to pay cash dividends. However, all the ownership variables, family effect (through both ownership and board representation), foreign investors, domestic financial institutions, the state and minority investors ownerships, have a significantly negative impact on the amount of dividend payouts and dividend yield of ISE firms.

Accordingly, we present consistent evidence that foreign investors in Turkey invest in stocks for their long-run growth potential, rather than the short-term dividend income. This may be implying that, along with the significant improvements in many areas for corporate governance and transparency and disclosure practices in Turkey since 2003, the increase in foreign ownership provides more monitoring on the managements' activities and hence less need for the dividend-induced monitoring device. Further, it may also be reflecting the uneven tax treatment between capital gains and cash dividends imposed by the Turkish tax regime, which provides foreign shareholders with tax advantages for capital gains over dividends, and thus foreign investors possibly prefer none or lower dividend payouts in order to reduce their tax burden on cash dividends. Moreover, our findings show evidence that state ownership and dividend policy are negatively correlated, which may suggest that, after the implementation of major reforms starting with the fiscal year 2003, including the accelerated privatisation programme that included the divestiture of considerably large SOEs executed by the Turkish government, provide relatively more efficient ownership structures, which resulted in better corporate governance, transparency and disclosure practices environment in Turkey and, therefore, state ownership involving less with the need for the dividend-induced capital market monitoring.

The expropriation argument based on the principal-principal conflict argues that when large shareholders (especially families) hold almost full control, they prefer none or lower dividends to preserve cash flows that they can potentially expropriate. Nevertheless, our results report inconclusive evidence in this respect. Although families have a significantly negative effect on dividend payments, considering the non-significant impact of Turkish families on the decisions to pay or not pay dividends (if the expropriation argument through dividends holds true for Turkish families, their involvement should also be significantly and negatively affecting the probability of paying dividends) and the significantly negative relationships between cash dividend payments and all other blockholders and even minority shareholders, the evidence of

expropriation argument for Turkish families is relatively weak. In fact, this negative correlation may suggest that families are likely to cater for the dividend preferences of their shareholders, consistent with the catering theory of dividends developed by Baker and Wurgler (2004).

Similarly, domestic financial institutions and minority investors' stock ownership have no significant effect on decisions regarding whether to pay dividends, but they are both significantly and negatively affecting dividend payments. Hence, higher stock ownership of domestic financial investors in an ISE firm associates with lower dividend ratio, which is contrarily to the argument that greater agency conflicts and poor legal protection given to the investors in emerging markets, fail institutional investors in directly monitoring the management; thus, they prefer dividend-induced capital market monitoring. Indeed, our evidence suggests that the increasing ownership of Turkish institutional investors reduces in general the need for high dividend payouts, which may be due to their efficient monitoring on the firms' management. Further, the evidence of the inverse relationship between the minority shareholders and the payout ratio is contrary to the statement of La Porta *et al.* (2000), that minority shareholders might have a taste for higher dividends to reduce the risk of expropriation of their wealth by controlling shareholders. Instead, it implies that small shareholders have preferences for capital gains over cash dividends to possibly avoid from tax burden due to a favourable tax treatment on capital gains provided by the Turkish tax regime.

Even though the outcome model of dividends, proposed by La Porta *et al.* (2000), argues that dividends are an outcome of an effective system of legal protection of shareholders, and therefore suggests higher dividends payments, it also predicts that, other things being equal, firms with better investment opportunities should in general pay lower payout ratios in countries with good shareholder protection. Based on this argument, our results imply that the implementation of various major economic and structural reforms in cooperation with the IMF and the EU directives and best-practice international standards, including the CMB's Corporate Governance Principles in line with the World Bank and the OECD, starting with the fiscal year 2003, have resulted significant improvements for the ISE-listed firms corporate governance, transparency and disclosure practices and better shareholder protection. Consequently, investors in general have preference for the potential long-run growth opportunity for the stocks they hold in the ISE, since Turkey is a fast-growing market.

Overall, our findings reveal that cash dividends are not used as a monitoring mechanism by investors in order to control for agency problems in Turkish market. Among many other possibilities (some already discussed above), this evidence may also refer to the declining propensity of paying dividends in line with Fama and French (2001), who argued that the perceived benefits of dividends have decreased through time; perhaps due to the larger holdings of stock options by managers (large controlling shareholders in this case, families or foreign investors) who prefer capital gains to dividends and better corporate governance technologies that lower the benefits of dividends in controlling agency problems. This raises the need for further research regarding the effect of corporate governance and ownership structure on dividend policy behaviour. The results of this paper, however, provide a valuable benchmark for such a research.

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Table 1: Taxation of Capital Gains and Dividends on Equities in Turkey

Investment	Individuals		Corporations	
	Residents	Non-residents	Residents	Non-residents
Capital Gains on Equities	Capital gains derived from shares subject to 0% withholding tax. However, the shares of investment trusts and exchange traded funds are subject to 10% withholding tax, if held for less than a year.	0% withholding tax.	Capital gains derived from shares subject to 0% withholding tax. However, the shares of investment trusts and exchange traded funds are subject to 10% withholding tax, if held for less than a year.	0% withholding tax.
Dividends on Equities	15% withholding tax is applied by the corporation distributing dividends.	15% withholding tax is applied by the corporation distributing dividends.	Not subject to dividend withholding tax. Dividends received from resident incorporations are exempt from corporate tax.	15% withholding tax is applied by the corporation distributing dividends.

Source: Compiled from TSPAKB (2007; 2012)

Table 2: Selection Criteria and Distributions of the Sample across Time and Industries

Panel A		Panel B		Panel C		
Selection Criteria for the sample		Distribution of the sample across time		Distribution of the sample across industries		
Criterion	No. of firms	Years	No. of firms	Industry	ICB Code	Sample (%)
ISE-firms during 2003-2012	380	2003	157	Oil & Gas	500	1.5
		2004	164	Chemicals	1300	5.7
		2005	199	Basic Resources	1700	5.7
Financial Firms	111	2006	211	Construction & Materials	2300	13.3
Utilities	5	2007	214	Industrial Goods & Services	2700	17.4
		2008	215	Automobiles & Parts	3300	4.2
Final Sample (Excluding financials & utilities)	264	2009	218	Food & Beverage	3500	11.7
		2010	226	Personal & Household Goods	3700	18.6
		2011	249	Health Care	4500	1.5
		2012	259	Retail	5300	5.7
				Media	5500	2.7
				Travel & Leisure	5700	6.4
				Telecommunications	6500	0.8
				Technology	9500	4.9
				Total Number of Firms		100% 264

Notes: ICB code provides Industry Classification Benchmark code for industries based on Datastream.

Table 3: Descriptive statistics

Variables	*N*	*Mean*	*SD*	*Minimum*	*Maximum*
DPAY	2,112	0.339	0.473	0.000	1.000
DPOUT	2,066	0.243	0.911	0.000	21.05
DYIELD	2,112	0.019	0.040	0.000	0.063
FAMILY	2,112	0.394	0.298	0.000	0.969
FAMBOARD	2,112	1.551	1.634	0.000	7.000
BOARD	2,112	6.622	2.070	3.000	14.00
FOREIGN	2,112	0.127	0.268	0.000	0.995
INST	2,112	0.041	0.158	0.000	0.973
STATE	2,112	0.016	0.096	0.000	0.981
DISP	2,112	0.358	0.201	0.005	1.000
ROA	2,112	0.021	0.185	−5.120	1.059
M/B	2,112	1.508	1.322	0.284	18.66
DEBT	2,112	0.249	0.542	0.000	10.76
AGE	2,112	3.445	0.499	1.098	4.477
SIZE	2,112	4.863	1.712	0.513	10.16

Note: DPAY is a dummy variable indicating firms paying dividends; DPOUT is the dividend payout level; DYIELD is the dividend yield ratio; FAMILY is the percentage of total outstanding shares of the firm held by families including family members; FAMBOARD is the number of family directors on the board; BOARD is the number of directors on the board; FOREIGN is the percentage of shares of the firm held by foreign corporations, foreign financial institutions and foreign nationals; INST is the sum of percentage of Turkish financial institutions such as banks, pension funds, investment trusts and insurers out of total capital shares of the firm; STATE is the percentage of shares of the firm held by the central government and its wholly owned enterprises; DISP is the total percentage of shares owned by a large number of small (minority) shareholders; ROA is firm's return on assets; M/B is firm's market-to-book ratio; DEBT is the debt policy; AGE is firm's age in years; Size is firm's size measured as market capitalisation of firm.

Table 4: Pearson's correlations and VIF values

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	VIF	1/VIF
1. FAMILY	1.000												4.42	0.226
2. FAMBOARD	0.568**	1.000											1.63	0.613
3. BOARD	−0.063**	0.045**	1.000										1.53	0.653
4. FOREIGN	−0.448**	−0.321**	0.063**	1.000									3.46	0.289
5. INST	−0.316**	−0.242**	0.040**	−0.144**	1.000								1.87	0.535
6. STATE	−0.207**	−0.151**	0.032**	−0.038**	−0.034**	1.000							1.36	0.735
7. DISP	−0.249**	0.057**	−0.126**	−0.419**	−0.077**	−0.046**	1.000						2.88	0.347
8. ROA	−0.021**	−0.020	0.211**	0.049**	0.021**	0.015	−0.123**	1.000					1.46	0.684
9. M/B	−0.108**	−0.072**	−0.018**	0.125**	0.081**	0.010	0.122**	−0.144**	1.000				1.46	0.684
10. DEBT	0.027**	0.041**	−0.170**	−0.057**	0.058**	−0.035	0.037**	−0.498**	0.458**	1.000			1.76	0.568
11. AGE	0.023**	0.042**	0.122**	0.080**	0.116**	0.066**	−0.144**	−0.005**	−0.091**	0.035**	1.000		1.11	0.900
12. SIZE	−0.071**	−0.088**	0.538**	0.217**	0.139**	0.153**	−0.340**	0.301**	0.152**	−0.157**	0.146**	1.000	1.86	0.537

Notes: ** and * stands for significance at the 1% and 5% levels respectively; variables are defined in Table 3.

Table 5: Results of estimation models on dividend payment decisions

Model	Model 1 Random effects logit		Model 2 Random effects tobit		Model 3 Random effects tobit	
Dependent variable	Dividend payment DPAY (0/1)		Dividend payout ratio DPOUT		Dividend yield DYIELD	
Independent variables	Coefficient estimates	Marginal effects	Coefficient estimates	Marginal effects	Coefficient estimates	Marginal effects
FAMILY	-1.1118 (-0.95)	-0.1003 (-0.96)	-1.6226** (-2.51)	-0.2012** (-2.54)	-0.0218* (-1.92)	-0.0806* (-1.93)
FAMBOARD	-0.0189 (-0.14)	-0.0017 (-0.14)	-0.0337* (-1.78)	-0.0039* (-1.79)	-0.0031** (-2.26)	-0.0116** (-2.26)
BOARD	0.2925*** (3.09)	0.0264*** (3.19)	0.1277** (2.51)	0.0158** (2.54)	0.0057*** (3.33)	0.0213*** (3.38)
FOREIGN	-2.3554** (-2.05)	-0.2125** (-2.10)	-2.0909*** (-3.28)	-0.2593*** (-3.39)	-0.0477** (-1.97)	-0.1652** (-1.98)
INST	-1.5697 (-1.10)	-0.1416 (-1.11)	-1.8156** (-2.37)	-0.2251** (-2.40)	-0.0247* (-1.88)	-0.0914* (-1.89)
STATE	-3.0417** (-1.97)	-0.2745** (-1.98)	-2.3636** (-2.45)	-0.2931** (-2.48)	-0.0452** (-2.35)	-0.1670** (-2.36)
DISP	-0.3048 (-0.23)	-0.0275 (-0.23)	-1.8475** (-2.40)	-0.2291** (-2.43)	-0.0120* (-1.69)	-0.0221* (-1.69)
ROA	11.709*** (8.03)	1.0568*** (8.55)	6.0372*** (7.73)	0.7487*** (7.97)	0.3150*** (13.48)	1.1627*** (13.63)
M/B	-0.3751*** (-3.30)	-0.0338*** (-3.38)	-0.2128*** (-3.20)	-0.0263*** (-3.24)	-0.0090*** (-4.33)	-0.0333*** (-4.33)
DEBT	-4.0674*** (-4.84)	-0.3671*** (-4.92)	-1.5526*** (-3.26)	-0.1925*** (-3.28)	-0.0811*** (-5.41)	-0.2995*** (-5.41)
AGE	0.8982** (2.18)	0.0810*** (2.21)	0.3294* (1.80)	0.0408* (1.81)	0.0237*** (2.84)	0.0876*** (2.87)
SIZE	1.0687*** (6.99)	0.0964*** (7.91)	0.4987*** (6.05)	0.0618*** (6.51)	0.0155*** (5.41)	0.0573*** (5.68)
Constant	-8.4581*** (-4.64)		-3.3581*** (-3.48)		-0.1762*** (-4.93)	
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	1,846	1,846	1,800	1,800	1,846	1,846
Wald X^2	198.83***		217.47***		381.72***	
Rho value	0.6231		0.3309		0.5221	
Likelihood ratio test	280.09***		120.43***		313.65***	

Notes: The table reports the logit/tobit estimations and z statistics in the parentheses. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. Independent variables are one-year lagged; variables are defined in Table 3.

Table 6: Results of further specifications on dividend payment decisions

Model	Model 1 Random effects logit				Model 2 Random effects tobit				Model 3 Random effects tobit			
Dependent variable	Dividend payment (DPAY (0/1))				Dividend payout ratio (DPOUT)				Dividend yield (DYIELD)			
Independent variables	Coefficient estimates	Marginal effects	Coefficient estimates	Marginal effects	Coefficient estimates	Marginal effects	Coefficient estimates	Marginal effects	Coefficient estimates	Marginal effects	Coefficient estimates	Marginal effects
FAMILY	-1.1761 (-1.09)	-0.1061 (-1.10)	–	–	-1.7068** (-2.55)	-0.2116** (-2.57)	–	–	-0.0330* (-1.90)	-0.1216* (-1.91)	–	–
FAMBOARD	–	–	-0.0682 (-0.55)	-0.0062 (-0.55)	–	–	-0.0949* (-1.73)	-0.0118* (-1.73)	–	–	-0.0040* (-1.87)	-0.0149* (-1.87)
BOARD	0.2906*** (3.10)	0.0262*** (3.20)	0.3052*** (3.25)	0.0278*** (3.37)	0.1243** (2.50)	0.0154** (2.52)	0.1504** (2.49)	0.0187** (2.51)	0.0054*** (3.15)	0.0199*** (3.21)	0.0060*** (3.51)	0.0223*** (3.58)
FOREIGN	-2.3655** (-2.06)	-0.2135** (-2.12)	-1.5310** (-2.05)	-0.1394** (-2.08)	-2.1056*** (-3.32)	-0.2611*** (-3.43)	-1.9097*** (-3.16)	-0.1133*** (-3.20)	-0.0469** (-2.04)	-0.1727** (-2.08)	-0.0284** (-2.06)	-0.1055** (-2.11)
INST	-1.5638 (-1.10)	-0.1411 (-1.11)	-0.7635 (-0.67)	-0.0695 (-0.68)	-1.8098** (-2.36)	-0.2244** (-2.39)	-0.6766** (-2.09)	-0.0843** (-2.11)	-0.0242* (-1.86)	-0.0892* (-1.88)	-0.0087* (-1.80)	-0.0325* (-1.82)
STATE	-3.0426** (-1.99)	-0.2746** (-2.01)	-2.2817** (-1.97)	-0.2077** (-1.98)	-2.3569** (-2.44)	-0.2922** (-2.47)	-1.2769** (-2.47)	-0.1591** (-2.48)	-0.0440** (-2.32)	-0.1619** (-2.35)	-0.0298** (-2.33)	-0.1109** (-2.33)
DISP	-0.3048 (-0.23)	-0.0303 (-0.25)	-0.6012 (-0.63)	-0.0547 (-0.65)	-1.8942** (-2.51)	-0.2349** (-2.54)	-1.5241** (-2.49)	-0.0653** (-2.52)	-0.0113* (-1.67)	-0.0417* (-1.69)	-0.0109* (-1.78)	-0.0406* (-1.79)
ROA	11.709*** (8.03)	1.0565*** (8.54)	11.793*** (8.13)	1.0739*** (8.72)	6.0322*** (7.72)	0.7480*** (7.95)	6.2108*** (8.01)	0.7741*** (8.28)	0.3140*** (13.39)	1.1548*** (13.55)	0.3164*** (13.60)	1.1747*** (13.90)
M/B	-0.3751*** (-3.30)	-0.0339*** (-3.39)	-0.3682*** (-3.25)	-0.0335*** (-3.33)	-0.2146*** (-3.24)	-0.0266*** (-3.28)	-0.1989*** (-3.00)	-0.0247*** (-3.03)	-0.0091*** (-4.39)	-0.0337*** (-4.39)	-0.0088*** (-4.28)	-0.0330*** (-4.27)
DEBT	-4.0674*** (-4.84)	-0.3672*** (-4.92)	-4.0584*** (-4.86)	-0.3695*** (-4.95)	-1.5565*** (-3.26)	-0.1930*** (-3.28)	-1.5324*** (-3.26)	-0.1910*** (-3.28)	-0.0812*** (-5.38)	-0.2989*** (-5.40)	-0.0811*** (-5.43)	-0.3010*** (-5.44)
AGE	0.8982** (2.18)	0.0808*** (2.20)	0.8840** (2.15)	0.0805*** (2.17)	0.3252* (1.79)	0.0403* (1.80)	0.3084* (1.71)	0.0384* (1.73)	0.0233*** (2.77)	0.0857*** (2.80)	0.0232*** (2.80)	0.0863*** (2.82)
SIZE	1.0687*** (6.99)	0.0965*** (7.93)	1.0557*** (6.94)	0.0961*** (7.85)	0.5001*** (6.07)	0.0620*** (6.54)	0.4780*** (5.81)	0.0595*** (6.22)	0.0157*** (5.47)	0.0579*** (5.74)	0.0152*** (5.36)	0.0566*** (5.61)
Constant	-8.4581*** (-4.64)		-9.1835*** (-5.53)		-3.3175*** (-3.46)		-4.4289*** (-5.02)		-0.1724*** (-4.81)		-0.1893*** (-5.77)	
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of observations	1,846	1,846	1,846	1,846	1,800	1,800	1,800	1,800	1,846	1,846	1,846	1,846
Wald X^2	198.83***		199.01***		217.45***		214.03***		379.15***		382.76***	
Rho value	0.6231		0.6232		0.3311		0.3359		0.5262		0.5195	
Likelihood ratio test	280.09***		279.71***		120.60***		122.07***		320.25***		313.40***	

Notes: The table reports the logit/tobit estimations and z statistics in the parentheses. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. Independent variables are one-year lagged; variables are defined in Table 3.