



DIVIDEND POLICY DRIVERS IN TURKISH LISTED FIRMS

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ABSTRACT

This study examines the determinants of dividend policy in an emerging market, Turkey. It uses all listed nonfinancial and nonutility firms over the period 2003 – 2015 in Borsa Istanbul. The sample period covers the change of mandatory dividend policy in Turkey and the aftermath of global financial crisis, which are expected to have significant effects on dividend payout policy of firms. The sample data namely, financial and accounting data, is obtained from DataStream and Turkish Public Disclosure Platform.

Empirical results indicate that there is a positive relationship between profitability, size and dividend payment and negative relationship between leverage and dividend payment decisions of Turkish firms. Results indicate that firm specific risk diminishes the probability to pay dividends. Mature firms pay more dividend than young firms. It is also find that liquidity and ownership has no effect on dividend policy of Turkish firms.

1. INTRODUCTION

Dividend payment decision is still a puzzle since the seminal paper of Modigliani and Miller (1961). Since then many studies have been conducted on the factors affecting the dividend policy of firms. The effect of dividend policy on the value of the firm is a controversial subject in the literature. Unlike Modigliani and Miller (1961), theories have been developed that state dividend policy affects the value of the firm. If the dividend policy affects the value of the firm, it is also worthwhile to study the factors affecting the dividend policy. Many factors affecting the dividend policy have been examined in the literature. This study follows Fama and French (2001) and Kuo et. al (2013) while choosing the determinants of dividend policy.

Specifically, the drivers of dividend policy tested in this study are; profitability, size, investment opportunity, leverage, life-cycle, liquidity, risk, industry and ownership. Industry and ownership factors are not covered in Kuo et. al (2013) but they are crucial factors for an emerging market, Turkey. The ownership structure of Turkish firms is highly concentrated. Firms are mostly owned by families, then by foreigners and finally by institutions (Al-Najjar and Kilincarslan, 2016). The industry in which the firm works is also influential on the dividend policy (Adaoglu, 1999). Therefore, industry influence on dividend policy is also tested in this study.

This study contributes to the literature by providing empirical evidence on the drivers of dividend policy from an emerging market, Turkey for a period the period between 2003 and 2015. In addition to the commonly tested factors in the literature, the effects of systematic risk and idiosyncratic firm risk and market liquidity factor are also included in this study. To the best of author's knowledge, this is the first work that shows the influence of these factors on dividend policy.

This paper presents main theories of dividend policy. Theories attempt to explain why firms pay dividend and whether dividend payment influences firm value. In addition, some of the main papers are also reviewed regarding the theories. The regulations regarding dividend policy is a key factor for Turkish firms' dividend payment decisions. The regulations in Turkey went through significant changes through-out the years. The regulatory environment of Turkey affecting dividend policy of firms is outlined historically in this paper.

The remaining part of the paper proceeds as follows: Section 2 provides the theoretical framework. Major theoretical and empirical papers are presented in this section. In section 3 regulations on dividend policy in Turkey are presented, which are expected to have influence on dividend policy.

Section 4 describes the sample and data. Section 5 presents the drivers of dividend policy tested in this study in detail. In Section 6, results of the study are introduced. Finally, section 7 concludes.

2. THEORIES AND EMPIRICAL LITERATURE ON DIVIDEND PAYOUT POLICY

Research has suggested many explanations why some firms initiate dividends and why other firms do not. Despite many solid theories, there is no consensus in the extant literature. In this section, major theories and main research regarding this phenomenon are reviewed. Theories are classified as in the Baker and Weigand (2015).

2.1. Dividend Irrelevance

Modigliani and Miller (1958) (hereafter MM) state that capital structure, i.e., combination of debt and equity, has nothing to do with the value of a firm. They say that how the firm finances the left-hand side of the balance sheet is not important. This is called “capital structure irrelevance”. MM rely on arbitrage arguments and some certain assumptions (e.g., perfect capital markets, rational behaviour) while presenting their argument. The opportunity of “homemade leverage” enables investors to mimic the firm’s capital structure. Therefore, they can create cash flow streams by themselves eliminating the relevancy of capital structure.

Distribution of dividend is essentially a financing decision. Thus, it is closely related with capital structure. A firm paying dividend will need more external financing and will have less internal financing opportunities. In other words, if capital structure is irrelevant, by extension dividend policy should also be irrelevant in determining the value of the firm. Capital structure irrelevancy states that how you finance the creation of value does not matter. Dividend irrelevancy says how you deliver value does not matter. In this regard, in their following paper MM (1961) provide a weighty argument for the fact that dividend policy has no effect on the firm value.

2.2. Bird in-the-hand

The line of argument which can be called as the bird-in-the-hand theory states that investors prefer to gather dividend payments right away. They do not prefer to get a higher but uncertain future return, which is a result of cash retention to finance investments. For investors, a bird in the hand is worth two in the bush. In other words, this theory claims that higher dividend payments or stable dividend payments increase firm value because they are not affected by uncertainty. In contrast, future share price appreciation, capital gain, is uncertain. Two early studies set ground for this theory.

Lintner (1956) surveys a sample of 28 carefully selected firms to investigate their dividend policy. The survey suggests some stylized facts about dividend policy. First, managers of the firms take into consideration the existing rate of dividends while deciding the new dividend rate. They are reluctant to significantly change the existing dividends because they think that stockholders prefer stable dividends. Second, dividend decision is based mostly on major changes in earnings incompatible with existing dividends. Investment requirements do not significantly affect dividend decision. Third, firms have long term target payout ratio and they adjust dividends accordingly.

Gordon (1959) also states that shareholders like dividends. Investors buy the stock of a firm in the expectation of receiving dividend payments. Gordon formulates a model for valuing stocks. The model consists only dividends and discount rates as variables. The formula known as Gordon growth model is:

$$V_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t} \quad (1)$$

In this equation, V_0 is the value of the firm, D_t is the dividend paid at time t and r is the discount rate. To this model, there is an increasing relationship between dividends and value of the firm. The higher the dividend the higher the share price.

2.3. Taxes and tax clienteles

In general, dividends and capital gains are taxed differently. In addition, different investors are taxed at different rates, which results different after-tax returns for them. Therefore, a rational investor should prefer capital gains and invest in stock of firms that pay low dividends if the rate of tax on capital gains is less than personal tax. Conversely, if the rate of tax on personal income is less than the

rate of tax on capital gains, investors should favour dividends and invest in stock of firms that pay high dividends.

Two approaches of research to test clientele effect exist in the literature. One approach uses an adjusted version of CAPM including dividend yield as a variable. The other approach analyses the stock price behaviour on the ex-dividend day.

Pettit (1977) uses multiple regression to investigate the clientele effect on investors' portfolios as one of the early example to the first approach. Pettit finds that younger investors, wealthier investors and investors facing their ordinary income taxed higher than capital gains tend to hold stocks of firms that pay more in dividends. The results match with clientele effect.

In their study to measure the clientele effect from the viewpoint of second approach, Elton and Gruber (1970) analyse stock price behaviour on the ex-dividend day. To measure the effect of the tax rate differential between capital gains and dividend on investors' preference, the change in price on the ex-dividend day is compared with actual dividend paid. It is expected that the decrease in price on the ex-dividend day should be same as paid out dividend but different tax rates on capital and dividend gains makes this expectation questionable.

2.4. Asymmetric Information and Signaling

Executive decisions and actions of firms are signals for the future profits and value of the firm for financial markets. Changes in dividend policy is an essential decision and a medium for firms to convey information to investors. Generally, firms are reluctant to change their dividend payments. Thus, investors perceive a change in dividend policy as a strong signal of financial situation of the firm in the long-run. The empirical literature reports that a rise in dividends leads to a price increase in the stock, while a reduction in dividends provides price reductions.

Motivated by MM (1961) statement on possible signaling, Ross (1977) models the signaling argument. MM (1961) state that although firms are valued by the present value of future cash flows, the investors' perception of a change in dividend policy may affect the value of the stock price. Consistent with MM (1961) framework, Ross (1977) by his incentive-signaling model shows that managers use capital structure to signal increased cash flows. In the Ross (1977) model two types of firms exist; type A and type B. Type A firms have a return of "a" greater than type B firms' return "b". The market cannot distinguish these firms. If a firm is more valuable managers get higher compensations. So, managers aim to signal that their firm is worthy of higher valuation and type A firms' managers increase the dividend payments. On the other hand, even though they want, type B firms' managers cannot increase the dividend payments because of bankruptcy costs. Here, the assumption is that if a firm goes bankrupt managers will be penalized.

Kalay (1980) extends Ross model to dividend policy. He applies Ross incentive-signaling model by showing that managerial reluctance to cut dividends is a necessary condition of dividend policy to convey information.

2.5. Agency Costs

The theory that is called agency costs is another explanation of dividends. Per this theory, managers have the potential to invest excess free cash flows to projects with negative net present value. This phenomenon is named as overinvestment problem. Dividends impose managers to payout excess free cash flows, reducing the overinvestment problem and agency costs.

The agency costs dividends theory takes its source from agency problem of Jensen and Meckling (1976). Managers and investors of a public company may have divergent interests. Investors desire the value maximization of the firm, instead managers desire the maximization their income. Paying dividends decreases the excess cash disposable to the misusing of managers and makes the company more open to external control (Jensen, 1986). The reduced excess cash will make the firms to use external financing, i.e. debt, while making new investments. Thus, firm will be more open to monitoring and managers will be engaging in activities in the best interest of investors which will add value to the firm. Therefore, market will give positive reaction to dividend initiations and dividend increases. On the other hand, implying the rise of the overinvestment problem, market will react negatively to a decrease in the dividend payout.

2.6. Behavioural Explanations

Other theories on dividend, namely neoclassical theories that assume rational individuals, do not concern behavioural components of individual decision making. They usually deal with taxes, transaction costs and asymmetric information when explaining dividend policy because of the MM (1961) assumptions. On the other hand, behavioural dividend theory acknowledges that individuals are affected by certain psychological factors when taking decisions, which naturally include dividend decisions.

To the behavioural life cycle model (BLC) developed by Shefrin and Thaler (1988), for example, older people are reluctant to sell security holdings. That is some individuals do not have the self-control to make decisions that maximize their utility function. They experience an internal conflict.

In their study, Baker et al. (2006) show that there is a strong association between consumption and dividends. By using 1988-2001 Consumer Expenditure Survey (CEX) and brokerage account data, they provide evidence that individuals prefer to use dividend income rather than capital gains when making consumption. Graham and Kumar (2006) also support the behavioural theory of dividends. By using portfolio dividend yield, the authors investigate the preference for dividends. They find that older individuals choose dividend payers over non-payers. In addition, this choice is stable. Older investors' portfolios change slowly over time. Alternatively, younger investors prefer dividend paying stocks when their income is low. That is, high-income youngers investor prefer dividend paying stock less than low-income younger investors.

2.7. Life-Cycle

The generated cash exceeds the profitable investment opportunities as a firm matures. Life-cycle theory of dividends takes its root from this reality. In this stage, distributing free cash flow to investors becomes the optimal choice. Furthermore, life-cycle theory points out that a newly initiated, i.e. young, firm has relatively more investment opportunities with a less internal cash. It is also costlier to find external funding. Therefore, the firm must rely on internal funding and must pass dividend payments up. But when the firm grows, it becomes a cash generator with less investment opportunities. So, it pays that extra cash to investors as dividend.

Mueller (1972) introduces the life cycle theory. According to him, firms have a S-shaped growth trend. In the initial stages, before the firm gains market share, it has a slow growth. In the following stage firm grows rapidly because of its innovative product. In the final stage, firm faces tough competition and growth slows down. The life cycle theory of Mueller (1972) has implications for dividend policy of firms. Optimally, a firm in rapid growth stage should retain all earnings. But as the matures and growth slows down, it should distribute all its earnings. Formally, when the firm's cost of capital (k) is less than return on equity (ROE), all earnings should be retained to maximize the firm value. In contrast, when ROE is less than k , firm should distribute all earnings to maximize its value.

De Angelo et al. (2006) analyse U.S. firms as a sample between the years 1972-2002 to test the validity of the life-cycle theory. They use retained earnings to total equity (or total assets) ratio as a proxy for life-cycle stage of the firm. These ratios capture the dependency of the firm to internal and external funding. If a firm is young (i.e. growth stage), it needs more external funding. On contrary, if a firm is mature it does not that much external funding. It can fund itself by internal funding. Therefore, for young firms, life cycle proxy ratio will be low and the ratio will be high for mature firms.

2.8. Catering

Baker and Wurgler (2004a) develop the catering theory of dividends. Catering theory explains the dividend payment decision based on irrational investor demand. They claim that investors have uninformed and variable demand for dividend paying shares. In addition, the assumption is that MM type arbitrage is not able to prevent the price difference in dividend paying and non-paying firms' stocks. When investors demand dividend, firms cater them and distribute dividend. On contrary, when investors do not demand dividend, firms omit dividend payment.

Relative stock prices of dividend payers and nonpayers are used as a proxy for investor demand. Specifically, the difference between the log of the market to book ratio of dividend payers and nonpayers, which is called as "dividend premium" by Baker and Wurgler (2004a), represents the

investor demand. Dividend payment of firms is measured by aggregate rates of dividend initiation and omissions. The catering theory of dividends is tested by regressing these rates on dividend premium.

The results reveal that most part of the variation in dividend initiation is explained by dividend premium. So, they conclude that catering is a natural explanation for dividend policy of firms.

Baker and Wurgler (2004b) use Fama and French (2001) methodology to report the trends in propensity to pay dividends between the years 1963 and 2000. The propensity to pay dividends in Fama and French (2001) is defined as the difference between realized fraction and expected fraction of dividend paying firms. A firm is accepted as a dividend payer if it has a positive dividend for a given year. The expected fraction is based on firm-level logistics regressions. Size, profitability and investment opportunities are the firm specific variables that are used to find the likelihood that a firm is payer. The logit model is defined as;

$$\Pr(\text{Payer} = 1) = \text{logit} \left(a_0 + a_1 (\text{size})_i + a_2 \left(\frac{dA}{A} \right)_i + a_3 \left(\frac{M}{B} \right)_i + a_4 \left(\frac{dA}{A} \right)_i + \varepsilon_i \right) \quad (2)$$

Baker and Wurgler (2004b) find empirical evidence supporting their theory of catering by regressing dividend premium on propensity to pay.

2.9. Studies on Dividend Policy of Turkish Firms

The empirical literature on dividend policy of Turkish firms is not extensive. In one of the earliest studies, Adaoglu (2000) states that Turkish firms have unstable dividend payment behaviour. In his later study, Adaoglu (2008) shows that the number cash dividend payers decrease in Turkey between the years 1985 and 2006, whereas level of earnings and dividend payment shows no meaningful change. An observable pattern on the dividend payment for Turkish firms is the size effect. As the size of a firm gets bigger, dividend payout ratio of that firm also grows (Adaoglu, 2008).

Yurtoglu (2000) analyses the effect of ownership structure on dividend payout ratio. He finds that conflict of interest between shareholders lead to lower dividend payment. In a recent study on the effect of ownership structure on dividend policy, Al-Najjar and Kilincarslan (2016) find that foreign ownership affects dividend payment negatively, whereas institutional ownership has no effect on Turkish firms' dividend policy. Kirkulak and Kurt (2010) examines the dividend policy of Turkish firms for the years 1991 to 2006. The most striking evidence about their analyses is that dividend payment is largely related with current earnings of firms. The level of debt has no effect on the dividend policy, whereas high growth potential influence on dividend decisions.

In their study comparing dividend policies in emerging markets with United States, Aivazian et. al (2003) state that Turkish firms pay much more dividend than other emerging markets. Kuzucu (2015) examines the determinants of dividend policy for Turkish firms by using a panel data methodology. Contrary to most of the studies, he finds that profitability has a negative effect on dividend payment. He also states that firm characteristics like size, age and PE ratio have a positive effect on dividend payout ratios of Turkish firms.

3. REGULATIONS ON DIVIDEND POLICY IN TURKEY

Firms do not always have the full freedom of determining their dividend policy. There are some regulations and legislations bounding the decisions of firms regarding dividend policy. Countries regulate the dividend policy of firms differently throughout the world (Adaoglu, 1999:1). La Porta et al. (2000) state that countries can be divided mainly into two groups regarding their dividend policy regulations; civil law countries and common law countries. Civil law countries, where there is weak investor protection, tend to mandate dividend payment. Glen et al. (1995) observe that dividend payments are more volatile in emerging markets. Especially, as stated in Glen et al. (1995) emerging market countries impose more constraints on the dividend policy of firms for protecting minority shareholders.

In Turkey, an emerging market and a civil law country, dividend payments have been heavily regulated and regulations went through some major changes since the debut of operations in Borsa Istanbul (BIST hereafter). Capital Markets Board of Turkey (CMBT hereafter) regulates the dividend policy of firms. The years 1985 - 2016 can be divided into four phases in terms of regulations; 1985 - 1994, 1995 - 2002, 2003 - 2008 and 2009 - 2016.

For the period 1985 - 1994, firms listed in BIST were subject to the first mandatory dividend regulation. Per this regulation, firms had to pay at least 50 % of their distributable income as cash dividend to shareholders within 9 months after the end of the financial calendar. Other payments or keeping it as retained earnings were not legally allowed (Adaoglu, 1999). Turkish stock market became operational in 1986. The first years lacked liquidity in the stock capital market. Thus, mandatory first dividend policy regulation was in favour of investors to be a source of income (Adaoglu, 2000:254). But also in this period, firms used rights issues to collect back the mandatorily distributed cash dividends (Kirkulak and Kurt, 2010). Because of high inflation in this period, distributed cash was causing damage to the firms' capital.

In 1995, CMBT made a notable change in dividend policy regulation*. CMBT abolished the mandatory first dividend regulation and firms became freer to pay or not to pay dividend. In addition, firms could choose the payment method with this regulation, if they decide to pay. Cash dividends and stock dividends became the payment methods for the firms. Firms could pay the dividend in any combination between these two payment methods. Also, the payment period was shortened to 5 months. CMBT states that main purpose of this regulatory changes on dividend policy is to allow investors to make more efficient interpretations on the dividend policy changes of firms (Adaoglu, 1999:3). Adaoglu (1999) finds that the new regulatory environment emerged the differences in firms, which were not visible during the mandatory first dividend era. He finds that there are industrial differences regarding dividend policy. Firms also tended to retain earnings instead of paying dividends. In addition, firms notably started to distribute stock dividends after 1995. Aydoğan and Muradoğlu (1998) concludes that the distribution of stock dividends is due to the motivation of firms to keep consistent debt to paid-in-capital ratios. Because Turkish firms' debt is allowed to exceed the 6 times of their paid-in-capital at that time.

Financial crisis hit the Turkish economy in 2001. As a leading indicator, Turkish stock index lost most of its value and the wealth of investors went down. With the help of IMF support and major reforms, Turkish economy and the stock market recovered. But again, to support especially small shareholders, CMBT obliged listed firms to pay out dividends (Adaoglu, 2008:117). Kirkulak and Kurt (2010) state that Turkish firms are usually owned by families which are attached to a group of companies. Also, the dominator shareholder uses a pyramidal structure or dual class share to intensify the control on the firm. The mandatory dividend policy started with fiscal year 2003†. Firms had to pay at least 20 % of their distributable profit as dividend. Cash dividend is not obligation with this regulation. Firms have the chance to distribute dividend as cash and/or stock. Up to year 2009, mandatory dividend policy continued with some minor changes in the percentage to be paid. For the fiscal year 2004, the percentage became 30. It was also valid for fiscal year 2005. In 2006, the percentage to be paid decreased to 20 % from 30 %. For the years 2007 and 2008, it was kept at the same rate.

Also in 2001, CMBT allowed firms to make advance, i.e. interim, dividend payments on a quarterly basis during the year (Adaoglu, 2008:118). Although there is no regulatory restraint to pay, most of the time financial administration of Turkey was applying value added tax on interim dividends. Thus, interim dividends are not usually observable in practice.

Finally, for the fiscal year 2009‡ and the remaining years (2010 to 2015) the CMBT decided to abrogate the mandatory dividend policy. Firms are not obliged to pay a minimum percentage of distributable profit as dividend. After the fiscal year 2009, firms are free to pay or not pay dividend and are totally free to determine their own dividend policy.

4. SAMPLE AND DATA

4.1. Sample

The sample covers listed firms from Turkey's stock exchange, BIST. Listed firms for the period between 2003 and 2015 are considered. The post-2003 period is a very appropriate period to analyse the determinants of dividend policy. Because as an emerging market, Turkey implemented some very important economic and structural reforms after the year 2003 (Al-Najjar and Kilincarslan, 2016).

* For the fiscal year 1994, decree issued and published by CMBT: Serial 4, No:9 and No: 22154 on 27/12/1994

† For the fiscal year 2003, decree issued and published by CMBT: No: 16535 on 30/12/2003

‡ For the fiscal year 2009, decree issued and published by CMBT: No: 02/51 on 27/01/2010

Also, regulations regarding dividend payment are changed after 2003 period as mentioned in section 3 of this paper. Following Fama and French (2001), financial and utility firms are excluded from the sample. Financial and utility firms are regulated differently regarding earnings management (Kirkulak and Kurt, 2010). Also, firms with missing data are not included in the analysis. A total of 283 firms are left for the analysis from 304 nonfinancial and nonutility firms at the beginning.

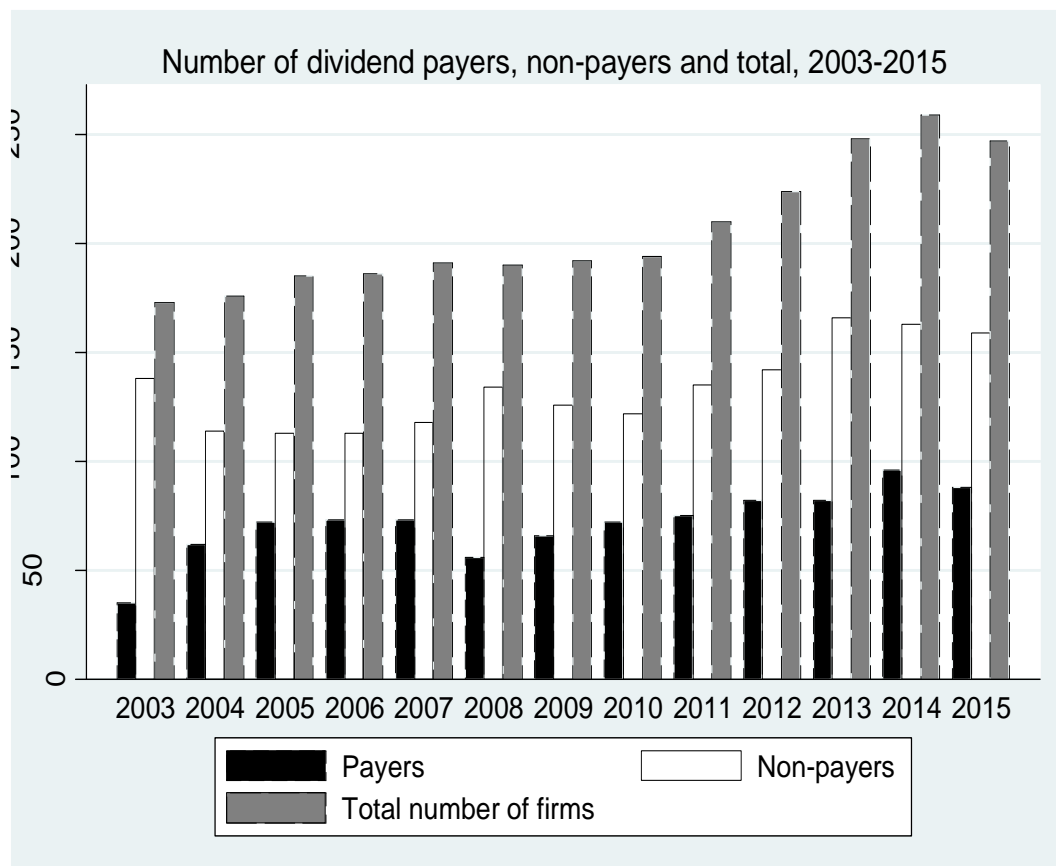
All annual firm-level financial information is collected from Thomson Reuters DataStream and Public Disclosure Platform (KAP). Financial information covers dividends per share, market capitalization, total assets, total liabilities, long-term liabilities and income. Because the change in total assets is calculated, total assets figure must exist for both current year and the preceding year. The daily information on stock price, volume and shares outstanding are also retrieved. Industry classification is obtained from KAP*. The sample includes both active and unlisted firms to overcome survivorship bias.

4.2. Data

Figure 1 presents the number of firms, number of dividend payers and nonpayers for the years 2003 to 2015. As it is seen from the figure the number of firms that constitutes the sample increases smoothly through the years. This is due to new public offerings in BIST throughout the years. In the years between 2003 and 2011, the number of firms is below 200. After that year, the number of firms traded in BIST climbs over 200 and stays there to the end of the sample period.

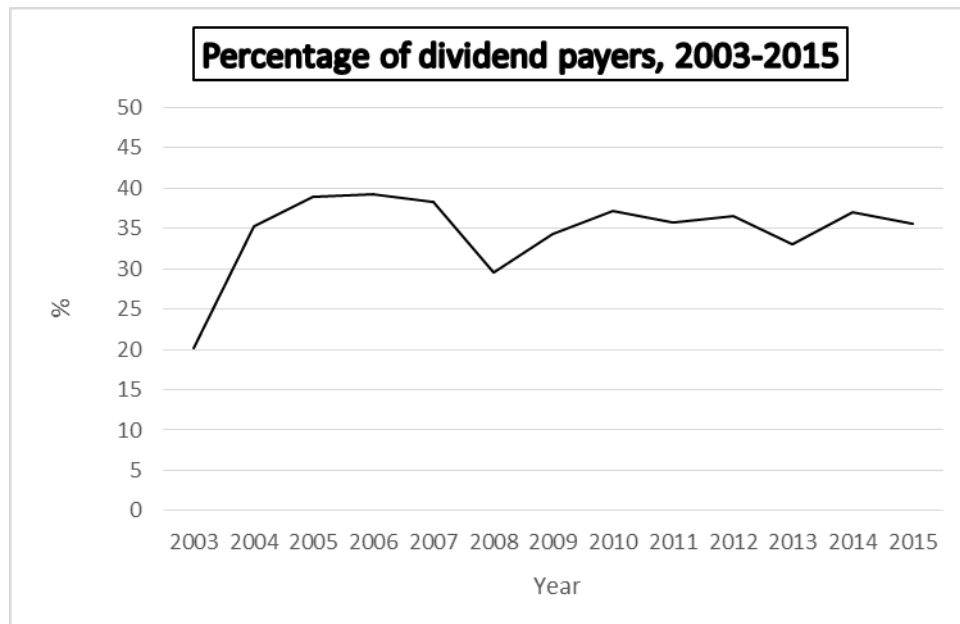
Figure 2 shows the percentage of payers among all firms in the sample. The percentage of firms paying dividends is 20 % in 2003, the first year of the sample. The following four years show a dramatic increase in the ratio of payers. In the year 2008, the percentage of payers drops again below 30 %. After 2008, the level of dividend payers recovers back to 34%. In the last six years of the sample, percentage of dividend payers remain stable around 35 %.

Fig.1. Nonfinancial and nonutility firms constitute the sample. Firms without available information are excluded. A firm is payer if it has a positive dividend per share, otherwise it is nonpayer.



* <https://www.kap.org.tr/tr/Sektorler>

Fig.2. Nonfinancial and nonutility firms constitute the sample. Firms without available information are also excluded. A firm is payer if it has a positive dividend per share, otherwise it is nonpayer.



5. DETERMINANTS OF DIVIDEND POLICY

In this study, Fama and French (2001) methodology is used to determine the driving factors of dividend payment decision in Turkey. Following Kuo et. al (2013), the logit model of Fama and French (2001) is elaborated to;

$$y_{it} = \text{logit}(c + a_1 \frac{M}{B_{it}} + a_2 \frac{dA}{A_{it}} + a_3 \frac{E}{A_{it}} + a_4 \text{SIZE}_{it} + a_5 \frac{D}{A_{it}} + a_6 \frac{RE}{BE_{it}} + a_7 \text{LIQ}_{it} + a_8 \text{SYS}_{it} + a_9 \text{ID}_{it} + a_{10} \text{OWN}_{it} + \sum_{j=1}^n a_j \text{IND}_{jit}) + \varepsilon_{it} \quad (3)$$

For the estimation of coefficients, Fama and Macbeth (1973) methodology is used. Annual cross-sectional regressions with Newey-West t-statistics are run for the sample period 2003-2015. The coefficients are time series averages of these yearly regressions. Time series standard deviations of estimated coefficients are standard errors and the t-statistics are means divided by standard errors. Standard errors are autocorrelation adjusted standard errors up to 4 lags. Finally, R2 is the average R2 of the cross-sectional regressions of every year in the sample period.

The dependent variable y_{it} stands for dividend payment decision. If a firm i decides to pay dividend in year t , then this value takes one. Otherwise it is zero. The independent factors for the analysis are profitability, size, investment opportunity, leverage, life-cycle, liquidity, risk and ownership. Specifically, the determinants are market-to-book ratio (M/B) and asset growth (dA/A) for investment opportunity, earnings-to-asset ratio (E/A) for profitability, size percentile ($SIZE$) for size, debt-to-asset ratio (D/A) for leverage, the ratio of retained earnings to the book value of equity (RE/BE) for life cycle, turnover ratio (TOR) and illiquidity ratio ($ILLIQ$) for liquidity, systematic risk (SYS) and idiosyncratic risk (ID) for risk and finally by institutional (INS) and foreign (FOR) ownership ratios for ownership status. For leverage debt-to-asset ratio is used instead of debt-to-equity ratio. The reason is that some of the firms have negative equity in their balance sheet for some years. A negative debt-to-equity ratio is not a suitable indicator for leverage (Guzhva and Pagiavlas, 2003). In addition to firm specific characteristics and other variables, industry dummy variables are added into the model to control for industry-effect. There are 7 industries based on KAP specification.

In the following section, independent variables used in this study that drive dividend policy are explained in detail.

5.1. Firm Specific Determinants

Profitability is a strong factor that affects dividend payment decisions. Fama and French (2001) reports that dividend paying firms are much more profitable than non-paying firms. Earnings-to-asset ratio is the proxy for profitability. According to Fama and French results investment opportunities affect dividend payment negatively. Firms with higher growth opportunities generally do not pay dividends. Market-to-book ratio and asset growth are used for investment opportunity. Finally, size is a factor that affects dividend payment positively. It is observed that larger firms pay more dividends than smaller firms. Size is measured as the percentile of firms equal or smaller to the subject firm. In addition to Fama and French (2001) variables, leverage is included into analysis. Kirkulak and Kurt (2010) suggest that debt is a main factor for dividend reductions in Turkey. It is measured as the debt-to-asset ratio. Debt is expected to have negative effect on dividend payments.

5.2. Life-cycle

As the firm gets mature, profitable investment opportunities falls behind the cash it generates. De Angelo et al. (2006) test the life-cycle theory of dividends in a sample of U.S. firms between the years 1972-2002. The measure they use for life-cycle stage of the firm is the ratio of retained earnings to book value of equity. This ratio reflects the firm's dependency on internal and external funding. Young firms need more external funding, whereas mature firms can internally fund themselves.

5.3. Liquidity

Banerjee et al. (2007) show that there is a negative relationship between liquidity and dividend payments. Because of low liquidity, transaction cost will be high. Thus, investors prefer dividends rather than trading the stocks.

Two different ratios are used in the analysis; turnover ratio and illiquidity measure. Turnover ratio (TOR) is measured like Datar et al. (1998). Every year average trading volume of a firm is divided by the number of outstanding shares. The result is expressed as a percentage. Illiquidity is the Amihud (2002) illiquidity ratio. It is calculated as;

$$ILLIQ_i = 1/D_i \sum_{d=1}^{D_i} \frac{|R_{id}|}{VOLD_{id}} \quad (4)$$

D_i is the number of trading days in a year for firm i . R_{id} is the absolute return and $VOLD_{id}$ is the trading value for a firm i on day d .

5.4. Risk

In the survey analysis of Brav et al. (2005), managers see the risk as a key factor to determine dividend policy. Grullon et al. (2002) state that maturity affects dividend policy of a firm. Risk of firm decreases as the firm matures. It is expected that less risk leads to more dividend payment. Hoberg and Prabhala (2008) finds that risk is significant factor to explain the dividend policy of firms, in their study analysing US sample.

The risk measures used in this study is the Hoberg and Prabhala (2008) measures of risk. They use idiosyncratic risk and systematic risk. Idiosyncratic risk is defined as standard deviation of residuals from a CAPM regression and systematic risk is the standard deviation of predicted value from that regression. For a firm i , regression is applied by using one year daily excess returns and market factor. The hypothesis is that risk is negatively related to dividend payment.

5.5. Ownership

In the extant literature, ownership structure is indicated as a factor affecting the dividend policy of firms. La Porta et al. (2000) presents that low shareholder protection leads to lower dividend payments. Shleifer and Vishny (1986) suggest that if there is low protection for shareholders, especially for minority shareholders, then large shareholders may be control mechanism for ownership rights. Al-Najjar and Kilincarslan (2016) analyse the effect of ownership structure on dividend policy on Turkish firms' dividend policy. Among other factors they asses the effect of foreign ownership and institutional ownership on dividend payment behaviour. They find that foreign ownership has a negative effect on dividend payment whereas institutional ownership does not have an impact on Turkish firms' dividend policy.

In this direction, ownership structure of Turkish firms is also included into the analysis. Foreign ownership (FOR) and institutional ownership (INS) are the two variables for ownership structure. FOR is the ownership percentage of foreign investors and INS is the ownership percentage of institutional investors in a specific firm. Both foreign ownership and institutional ownership are expected to have negative effect on dividend payment (Al-Najjar and Kilincarslan, 2016). The variables are compiled from Central Securities Depository (CSD) of Turkey.

The expected effects of the independent factors on dividend policy are summarized in Table 1 below.

Table1: Independent variables and expected signs

Variable	M/B	dA/A	E/A	SIZE	D/A	RE/BE	TOR/ILLIQ	SYS	ID	INS	FOR
Expected Sign	-	-	+	+	-	+	- / +	-	-	-	-

6. EMPIRICAL RESULTS

The probability that a firm pays dividend is estimated by the logit regression in Equation 3. Firm specific determinants, life-cycle, liquidity, risk, ownership and industry variables are independent factors in the regression. For liquidity two different proxies are used; turnover ratio and illiquidity ratio. Thus, results are reported in two tables; Table 2 and Table 3.

The results in Table 2 show that the expected signs of dividend policy drivers are mostly correct and mostly significant. For firm specific variables, market-to-book ratio, investment opportunity, profitability, size and leverage have all correct signs. The coefficient of M/B is -0.36 and it is statistically significant at 5% level. E/A, SIZE and D/A have 13.91, 2.62 and -2.63 slopes, respectively. These three variables are statistically significant at 1% level. These results are compatible with previous research. The only variable that is not significant is dA/A, which is a proxy for investment opportunity with M/B. This means that investment opportunities partly have no effect on dividend policy, which is in contrast with Kirkulak and Kurt (2010) result. They report that investment opportunity is a driver for dividend policy.

Life-cycle variable, RE/BE, has 0.26 slope with significant t-statistics at 10 % level. The sign of the variable is as expected. That is, firms in their maturity period of their life-cycle pay more dividend. The first proxy for liquidity shows a correct negative sign but the result is statistically insignificant. Liquidity has no effect on dividend policy of Turkish firms.

Systematic risk variable is statistically significant with a strong explanatory power but unexpectedly the sign of the coefficient is positive. According to this result, market driven risk and dividend payment have positive relationship. Idiosyncratic risk has also a strong explanatory power on being a dividend payer. The coefficient of firm-specific risk is -60.5 and it is significant at 1% level. This result is in line with Hoberg and Prabhala (2009). Thus, a firm with a high firm-specific risk pays less dividend.

The ownership variables have no effect on dividend policy of Turkish firms according to the results. Both institutional and foreign ownership have insignificant coefficients. This result regarding ownership is partly compatible with Al-Najjar and Kilincarslan (2016). They report that foreign ownership has a significant effect on dividend payment decisions. But this study finds no relationship. Institutional ownership has no influence on dividend policy according to both this study and Al-Najjar and Kilincarslan (2016) research. Finally, according to the results not reported in Table 2, industry dummy variables influence dividend payment. So, including industry dummies into the equation for controlling industry effect is meaningful.

Table2: Logit estimation of being a dividend payer with turnover ratio

2003-2015	Firm Specific					Life Cycle	Liquidity	Risk		Ownership	
	M/B	dA/A	E/A	SIZE	D/A	RE/BE	TOR	SYS	ID	INS	FOR
Coefficient (mean)	-0.36	-0.25	13.91	2.62	-2.63	0.25	-41.82	53.74	-43.5	-0.33	0.52
t-stat	-2.48	-0.92	8.62	5.42	-7.57	2.02	-1.41	3.13	-4.47	-1.07	1.42
Stand. Error	0.15	0.27	1.61	0.48	0.35	0.12	29.72	17.19	9.76	0.30	0.37
P	0.029	0.374	0.000	0.000	0.000	0.066	0.185	0.009	0.001	0.304	0.182

Table 3 reports almost equivalent results as Table 2. It shows the results with illiquidity ratio. Liquidity still has no effect on dividend policy. Ownership variables also have no influence on dividend payment.

Table3: Logit estimation of being a dividend payer with illiquidity ratio

2003-2015	Firm Specific					Life Cycle	Liquidity	Risk		Ownership	
	M/B	dA/A	E/A	SIZE	D/A	RE/BE	ILLIQ	SYS	ID	INS	FOR
Coefficient (mean)	-0.36	-0.25	13.39	3.21	-2.81	0.26	-281	53.97	-60.5	-0.14	0.57
t-stat	-2.46	-0.88	9.07	8.98	-7.43	2.2	-1.03	2.78	-6.03	-0.46	1.62
Stand. Error	0.15	0.28	1.48	0.36	0.38	0.12	271.88	19.39	10.03	0.32	0.35
P	0.030	0.398	0.000	0.000	0.000	0.048	0.322	0.017	0.000	0.656	0.130

7. CONCLUSION

This study investigates the determinants of dividend payment behaviour of Turkish firms by using the nonfinancial and nonutility firms for the years 2003 and 2015. First, the theories regarding dividend policy are summarized in this paper. In addition, the regulatory environment is presented. Regulations are important for determining dividend policy in Turkey.

By using Fama and French (2001) methodology the driving factors of dividend policy of firms are examined. The probability of being a dividend payer is tested by using logit regression methodology. The most significant contribution of this study to the extant literature regarding Turkish firms is the completeness of the determinants. Liquidity, ownership and risk among other firm specific variables are not considered altogether for Turkish firms before this study. The results show that risk has an effect on dividend policy of Turkish firms, whereas ownership and liquidity have no effect have no relationship with dividend policy. Further, results reveal that mature firms pay more dividend than young firms.

According to the results, investment opportunity partly does not play a role in dividend policy. But size, profitability and leverage have a significant relationship with dividend payment decision of firms. Profitability and size increases the probability of being a payer, whereas leverage decreases the probability of being a dividend payer.

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