Dividend policy : evidence from Turkey

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DIVIDEND POLICY:
EVIDENCE FROM TURKEY

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A Thesis

by

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DECLARATION OF AUTHORSHIP

I, ERHAN KILINCARSLAN, declare that this thesis I am submitting is entirely my own original work except where otherwise specified.

Signed:

Date: 18 March 2015

DIVIDEND POLICY: EVIDENCE FROM TURKEY

ERHAN KILINCARSLAN

ABSTRACT

The main aim of this doctoral thesis is to carry the dividend debate into an emerging market context, and contribute more evidence to dividend literature. This, however, is done different to prior research, by examining the dividend policy behaviour of an emerging market over a period of time, after implementing serious economic and structural reforms in order to integrate with world markets. Accordingly, therefore, attempting to uncover what behaviour the dividend policy of this emerging market shows. In particular, the dividend policies of the companies listed on the Istanbul Stock Exchange (ISE) are analysed. Turkey offers an ideal setting for studying dividend behaviour as a developing country, which implemented major reforms, starting with the fiscal year 2003 in compliance with the IMF stand-by agreement as well as adopting the EU directives and best-practice international standards for a better working of the market economy, outward-orientation and globalisation.

Research results suggest that the ISE-listed firms follow the same firm-specific determinants of dividend policy as proposed by dividend theories, and as suggested by empirical studies conducted in developed markets following Turkey's adoption of the International Financial Reporting Standards (IFRS) and inflation accounting, starting with the fiscal year 2003. Specifically, the primary firm-specific determinants of dividend policy are profitability, debt level, firm size, investment opportunities and firm age in the context of an emerging Turkish market.

The findings of this thesis indicate that implementing major economic and structural reforms, adopting more flexible mandatory dividend policy regulations and attempting to prevent insider lending (non-arm's length transactions) have led the ISE firms to adjust their cash dividends toward their target payout ratio by smoothing their dividends as suggested by Lintner (1956) and as exemplified by companies in developed markets. Hence, Turkish corporations have also been adopting stable dividend policies and using cash dividends as a signalling mechanism since 2003, with the implementation of severe economic and structural reforms.

Research evidence reveals that the ISE-listed firms have highly concentrated ownership structures; mostly owned by families followed by foreign investors, whereas other blockholders such as domestic financial institutions and the state, show relatively lower shareholdings. Moreover, evidence implies that the implementation of various major economic and structural reforms in cooperation with the IMF and the EU directives and best-practice international standards, which include the publication of the Capital Market Board (CMB) of Turkey's Corporate Governance Principles in line with the World Bank and the OECD, starting with the fiscal year 2003, have resulted in significant improvements for the ISE-listed firms corporate governance, transparency and disclosure practices and better shareholder protection. Investors, in general, therefore, have preference for the potential long-run growth opportunity for the stocks they hold in the ISE, since Turkey is a fast-growing market, rather than requiring cash dividends as a monitoring mechanism or to control agency problems.

This thesis extends empirical research on dividend policy into an emerging market, which not only passed laws for financial liberalisation, but implemented serious reforms to integrate with world markets by using a large panel dataset from Turkey. Although the implementation of major reforms and regulatory changes may produce different results in different emerging markets, it is believed that this thesis can be a valuable benchmark for further longitudinal and cross-country research on this respect of the dividend puzzle.

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(15 August 1968 – 19 April 2012)

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CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Corporate finance literature assumes that the main goal of financial management is to maximise the wealth of shareholders. Managers must, therefore, always consider how their decisions affect the value of their firms' shares, since share prices are critical determinants of shareholders wealth (Ward, 1993; Bishop *et al.*, 2000; Van Horne and Wachowicz, 2001). Dividend policy is one of the major categories of corporate financial decisions that managers face, and they can affect shareholders wealth through their dividend policy decisions (Glen *et al.*, 1995; Brealey and Myers, 2003). More precisely, managers' dividend policy decisions in determining the size and pattern of cash distributions to shareholders influence common share prices, and therefore, the wealth of shareholders over time (Lease *et al.*, 2000).

Accordingly, dividend policy has attracted a great deal of attention from financial economists in corporate finance literature. Questions such as why firms pay dividends, why investors care, and to what extent dividend policy may affect firm's market value have been subject to a long-standing argument (Baker and Powell, 1999). Indeed, finance academics have dealt with various theories, such as the tax preference, signalling and agency cost theories, in order to explain why companies should pay or not pay dividends. Some researchers (Brennan, 1970; Elton and Gruber, 1970; Lintner, 1956; Rozeff, 1982) have built and empirically tested a great number of models to explain dividend behaviour. Others (Baker *et al.*, 1985; Pruitt and Gitman, 1991; Baker and Powell, 1999; Brav *et al.*, 2005; Baker and Smith, 2006) have surveyed corporate managers to find out their thoughts about dividends. Hence, dividend policy literature contains various theories, hypotheses and explanations for dividends.

Miller and Modigliani (M&M)'s (1961) propose the *dividend irrelevance theory*, which posits that all efforts spent on dividend decisions are wasted, and a managed dividend policy irrelevant under the circumstance of a perfect capital market, with rational investors and absolute certainty. Although M&M's argument is logical and consistent within a perfect market, once this idealised world gives way to the real world, numerous market imperfections such as differential tax rates, information asymmetries, transaction costs, and conflicts of interest between managers and shareholders, render the irrelevance theory highly debatable. In fact, researchers have focused on the various market imperfections in order to respond to M&M's irrelevance theory and offered many competing hypotheses about why companies pay, or not pay dividends (Lease *et al.,* 2000).

Some researchers (Graham and Dodd, 1951; Gordon and Shapiro, 1956; Gordon, 1959; 1963) suggest that dividends can increase firms' values and shareholders wealth. This is because, more certainty is attached to dividend payments received today, against earnings retention for investment in projects whose future earnings are not certain. Firms should, therefore, set a high dividend payout ratio and offer a high dividend yield to maximise their share prices - this explanation is labelled as the *bird-in-the-hand hypothesis.* However, there are theories propose, which include the *tax preference theory* (Brennan, 1970; Elton and Gruber, 1970; Litzenberger and Ramaswamy, 1979) and the *transaction cost theory* (Higgins, 1972; Fama 1974; Rozeff, 1982; Scholz, 1992)*,* whereby, in the existence of market imperfections such as transaction costs and uneven tax treatments, dividend payments can decrease firms value as well as can cause negative consequences for shareholders wealth. Based on these theories, firms should therefore avoid or make minimal dividend payments if they want to maximise their share prices.

Other researchers (Lintner, 1956; Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985) indicate that information asymmetry exists when a firm's management has a better understanding about the firms' true value than outsiders who have only access to public information. Hence, managers use dividend payments to convey useful information about the current and future prospects of their firm, which is called the *signalling hypothesis*. Furthermore, Jensen and Meckling (1976), Rozeff (1982) and Easterbrook (1984) developed the *agency cost theory* of dividends, which derives from problems associated with the separation of management and ownership, and differences in managerial and shareholder priorities. This suggests that an effective dividend policy minimises agency costs by reducing funds available from managers who may spend unnecessarily on unprofitable investments, or even misuse for their own personal consumption. Managers are therefore required to look for financing in capital markets. Many researchers have developed various competing theories such as the *pecking order theory* (Myers, 1984; Myers and Majluf, 1984), *residual dividend theory* (Saxena, 1999; Lease *et al.,* 2000), *catering theory of dividends* (Baker and Wurgler, 2004a; 2004b) and *maturity hypothesis* (Grullon *et al.*, 2002), which add more complexity to the dividend controversy.

Fischer Black (1976, p.5) once described this lack of consensus on the matter as the *dividend puzzle* by stating that "*The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together.*" Although Black (1976)

came to this conclusion almost four decades ago, his observation still seems valid since financial economists have not reached a definitive theory of dividends. Furthermore, Brealey and Myers (2003), in their textbook, listed dividends as one of the ten important unsolved problems in finance, supporting this conclusion. Allen and Michaely (1995, p.833) suggested that "*Much more empirical and theoretical research on the subject of dividends is required before a consensus can be reached.*"

Dividend policy literature is extensive since researchers have developed and empirically tested various theories, models and hypotheses by contributing voluminous studies. However, despite countless research and extensive debates, the actual motivation for paying dividends still remains a puzzle (Baker and Powell, 1999). In addition to this, most of the theoretical and empirical evidence on dividend policy have been based on the developed markets, mainly the US and UK markets; therefore, less is known about dividend policy and the explanatory power of models for other countries, specifically developing countries (in other words, emerging markets). Considering the growing importance of emerging markets in terms of global equity investments, these markets have comparatively recently started attracting international investors. Accordingly, as emerging markets have begun to contribute to the *dividend puzzle*, researchers have started investigating the dividend behaviour of corporations in developing countries (Glen *et al.,* 1995; Adaoglu, 2000). In fact, empirical studies, taken in the context of developing markets, have been increasing, especially during the last two decades. Studies have indicated that emerging markets, to a degree, are generally differentiated from developed markets in terms of their effectiveness in meeting requirements of their determined functions. This is because of various discords such as political and social instability, lack of adequate disclosure, poor laws and regulations, and weaker financial intermediaries that provide efficient monitoring due the ineffectiveness of their financial markets (La Porta *et al.,* 1999; 2000; Aivazian *et al.,* 2003a; 2003b; Yurtoglu, 2003). It is, therefore, not surprising that various aspects of dividend policy behaviour of companies listed in the emerging markets tend to differentiate from companies in developed markets.

For instance, renowned cross-country studies such as La Porta *et al.* (1999), Claessens *et al.* (2000) and Faccio *et al.* (2001) provide evidence that concentrated ownership by large controlling shareholders, generally families, is the dominant form of the ownership structure in most developing countries. This is in contrast to Berle and Means's (1932) concept of widely held corporations with dispersed small shareholders

and a concentrated control in the hands of managers, which is extensively accepted in finance literature as a common ownership structure in developed countries. Accordingly, Daily *et al.* (2003) argued that agency cost theory might function differently in family-controlled publicly listed firms. Whereas prior findings from widely held companies might not readily be appropriate into this type of setting. In these firms, the salient agency problem might be the expropriation of the wealth from minority owners by the controlling owners, the *principal-principal conflict,* rather than the *principal-managers conflict.* Similarly, a number of studies (Manos, 2002; Kouki and Guizani, 2009; Ramli, 2010; Ullah *et al.*, 2012; Huda and Abdullah, 2013; Thanatawee, 2013; Aguenaou *et al.*, 2013; Gonzalez *et al.*, 2014) emphasised that agency cost theory of dividends needs to be uniquely investigated in emerging markets and more importantly the ownership structure of the firms in these markets should specifically be taken into account while identifying the proxies for agency cost variables.

Aivazian *et al.* (2003a, 2003b), who are well-known scholars in investigating dividend policy behaviour in emerging markets, compared the dividend policies of firms operating in developing countries with the dividend policies of US firms. Aivazian *et al.* (2003a) reported that Lintner's (1956) model still works for US firms but it does not work very well for emerging market firms. Current dividends are much less sensitive to past dividends in these markets, which supports the notion that the institutional structures of developing countries compose corporate dividend policy a less feasible mechanism for signalling than for US firms operating in capital markets with arm's length transactions. However, Mookerjee (1992), Pandey (2001), Al-Najjar (2009), Chemmanur *et al.* (2010), Al-Ajmi and Abo Hussain (2011) and Al-Malkawi *et al.* (2014) found evidence supporting the Lintner model when explaining dividend behaviour in different emerging markets. They, however, generally reported higher adjustment factors, hence lower smoothing and less stable dividend policies compared to developed countries. Furthermore, Aivazian *et al.* (2003b) concluded that firms in emerging markets somehow follow the same determinants (either the same or different signs) of dividend policy that are suggested by the developed markets. Studies from different developing countries such as Al-Najjar (2009), Kirkulak and Kurt (2010), Imran (2011), Mehta (2012) and Kisman (2013) supported this conclusion. Nevertheless, as Aivazian *et al.* (2003b) stated that, because of various differences between developed and developing markets, even among those developing economies,

such as financial systems, ownership structures, laws and regulations and so on, their sensitivity to these determinants vary across countries.

Consequently, the debate on dividend policy is still unsolved and still remains as a puzzle. There is no doubt that emerging markets attach more pieces to this puzzle. As Glen *et al.* (1995) stated much more additional research is required to provide a better understanding of dividend behaviour in these developing countries. Therefore, this doctoral thesis is aimed at carrying the dividend debate into the emerging market context with its findings a contribution to dividend literature.

1.2 Motivation of the Study

The debate on dividend policy has now been extensively researched for more than half a century. Earlier research on dividends, in terms of developing theories and empirical tests, were focused on developed markets, mainly the US followed by the UK. However, researchers have also started investigating the dividend policy behaviour of corporations in developing countries, especially over the past two decades, due to the growing importance of these markets in terms of global equity investments (Glen *et al.,* 1995).

A rapid increase in magnitude of equity portfolio flows, to developing countries, results in serious efforts, shown by emerging markets, to converge with the global world-market portfolio (Bekaert, 1995; Kumar and Tsetsekos, 1999). In this respect, civil law countries, which typically developing markets that generally have weaker rules of law to protect investors (La Porta *et al.,* 1997; 1999), have started to implement common laws in order to integrate with world markets (Karacan, 1998) and to attract foreign investors. Furthermore, Bekaert and Harvey (2002) suggested that emerging markets need integration, both in terms of economic and financial aspects, with world markets; economic integration involves the elimination of barriers to international trade, whereas financial integration desires the free flow capital across borders. Such integration requires a sequence of regulatory and institutional developments in the operations of financial markets. However, Bekaert and Harvey (2002) went on to argue that the concept of regulatory liberalisation and integration should be carefully distinguished. A country may pass a law that apparently drops all barriers to foreign involvement in local capital markets, which is liberalisation but this does not mean that regulatory liberalisation are necessarily defining events for market integration. Therefore, Bekaert

and Harvey (2002) emphasised that, for any empirical research, it is very important to know the approximate date emerging market undertook these structural changes in integrating world capital markets.

Empirical studies taken in the context of developing markets have mostly confirmed that dividend policy behaviour in emerging markets generally tend to be, not surprisingly, different from developed markets in many aspects. This is because of various factors such as political, social and financial instability, lack of adequate disclosure, poor laws and regulations, weaker financial intermediaries, newer markets with smaller market capitalisations, weaker corporate governance and different ownership structures (La Porta *et al.,* 1999; 2000; Kumar and Tsetsekos, 1999; Aivazian *et al.,* 2003a; 2003b; Yurtoglu, 2003).

It is nevertheless exemplified that, while examining the dividend policy behaviour in different emerging markets, researchers have not clearly stated or distinguished, as suggested by Bekaert and Harvey (2002), between the concepts of regulatory liberalisation or integration undertaken in those emerging markets for their study sample periods. Furthermore, it could be argued that dividend policy decisions of companies in an emerging market should be better understood if researchers report whether the emerging market examined passes laws for financial liberalisation or attempts to implement serious economic and structural reforms to integrate with world markets. In addition, it is questionable whether dividend policies of companies may significantly differ based on the process of liberalisation or integration undertaken in the emerging market in which they operate.

Accordingly, the main aim of this doctoral thesis is to investigate dividend policy behaviour of an emerging market over the period after implementing serious economic and structural reforms, in order to integrate with world markets. In this respect, the dividend policies of the companies listed on the Istanbul Stock Exchange (ISE) will be examined, since Turkey offers an ideal setting for the study of dividend behaviour of a developing country. In particular, with its implementation of major reforms starting with the fiscal year 2003 in compliance with the IMF stand-by agreement, as well as its adoption of the EU directives and best-practice international standards for a better working of the market economy, outward-orientation and globalisation.

1.3   Research Context in the Istanbul Stock Exchange (ISE)

This section provides a summary of the important developments of the Istanbul Stock Exchange (ISE) and explains the rationale for choosing the ISE-listed companies as study samples.

1.3.1   Financial Liberalisation and Earlier Developments of the ISE

Financial markets in Turkey were strictly regulated until a financial liberalisation programme was implemented at the beginning of 1980, which comprised the liberalisation of the foreign exchange regime, deregulation of interest rates and establishment of financial markets (CMB, 2003; Odabasi *et al.*, 2004). In the first half of the 1980s, the Turkish securities markets underwent serious major developments in terms of setting up both the legal and institutional structure fitting for sound capital movements. The Capital Markets Law (CML) was launched in 1981, followed by the establishment of the Capital Markets Board (CMB) in 1982, in order to regulate the founding and operations of stock exchanges. After the adoption of related regulations enacted and launched in the subsequent years, the Istanbul Stock Exchange (ISE) was officially established in December 1985 and commenced its operations on January 3, 1986 (CMB, 2003).

Despite long standing macro-economic imbalances, the Turkish capital markets attempted to make rapid progression in terms of political and regulatory changes during the two decades after 1980. Important institutional and regulatory developments are summarised below (Odabasi *et al.,* 2004, p.511; TSPAKB, 2007, p.5).

- 1980-1985: Implementing liberalisation program, commencing of primary and secondary markets, employing the New Banks Act and Securities Markets Law.

- 1986-1987: First bonds were issued by the Treasury, commencing of the interbank market, the Istanbul Stock Exchange and open market operations by the Central Bank.

- 1988-1990: Becoming a member of SWIFT (Society for Worldwide Interbank Financial Telecommunication), allowing convertibility of the Turkish Lira, relaxation of restrictions on capital flows, first ADR (American Depository Receipt) was issued in the NYSE and establishing ISE Clearing House.

- 1991-1992: Establishing the ISE bond market and repo market, implementing EFT (Electronic Funds Transfer) system and Insider Trading Law, and the ISE joined the WFE (World Federation of Exchanges).

- 1993-1994: First overseas exchange listing and rights market were opened as well as starting full computerised trading in the ISE, and recognition of the ISE by the US SEC (Securities and Exchange Commission).

- 1995-1996: Establishing Customs Unions with the EU, setting regulations for short sales, prosecution for first insider trading, starting Futures Market in the ISE and the ISE joined the FEAS (Federation of Euro-Asian Stock Exchanges).

- 1997-1998: Setting up various new sub-markets under the ISE and the ISE became project-leader in Southeast European Exchanges for substituting street-name by customer name.

- 1999-2000: Adoption of free-float regime and Banking Law on BIS (Bank for International Settlement)/Basel criteria.

- 2001-2002: Establishing the TSPAKB (The Association of Capital Market Intermediary Institutions of Turkey), Investors' Protection Fund and Central Registry Agency. Remote trading was started at the ISE and pension system regulation was passed.

1.3.2   An Overview of the ISE during the period 1986-2002

With the rapid development since its establishment in 1986, the ISE became highly representative of a promising emerging market, with fast growth in terms of the number of listed firms, the annual trade volume and the annual market capitalisation, as well as indicating high volatility in returns. As can be observed from Table 1.1 on the next page, the number of listed firms on the ISE significantly increased from 80 in 1986 to 315 in 2000 and then decreased to 310 in 2001 and to 288 in 2002 due to the economic crises in the early 2000s in Turkey. The annual ISE stocks trading volume sharply increased from US\$ 13 million in 1986 and reached to a peak of US\$ 181.9 billion in 2000 and then again it considerably fell to US\$ 80 billion in 2001 and US\$ 70 billion in 2002 with the economic crises (CMB, 2003).

Similarly, the total market capitalisation of the ISE grew rapidly. It dramatically rose from US\$ 0.9 billion at the end of 1986, reaching its peak to US\$ 144 billion by the end of 1999, just before noticeably decreasing to US\$ 69.5 billion by the end of 2000. In the following years, it further decline to about US\$ 48 billion and US\$ 34 billions, reflecting the economic crises in the Turkish market that occurred in the early 2000s. Odabasi *et al.* (2004) pointed out that emerging markets are characterised by high volatility and high average returns as evidenced by research on stock returns in these markets. In this case, they stated that the ISE is highly representative of an emerging market. Consistent with their statement, the figures of the annual rate of returns, calculated for the ISE-100 Index based on the closing prices in Table 1.1 indicate high volatility and extremely high returns in some years during the period, 1986-2002 (CMB, 2003).

Table 1.1 Development of Main Indicators of the ISE during the period 1986-2002

The table illustrates the development of the number of listed firms in the ISE, trading volume, total market capitalisation and annual rate of return for the ISE-100 Index based on closing prices according to the years. For the ISE-100 Index calculation, the value of the ISE-100 Index in January 1986 is taken as a base year.

| Year | No. of Listed Firms | Volume of Trade | | Total Market Capitalisation | Annual Rate of Return for the ISE-100 Index |
| | End of Year | Total Annually | Daily Average | | |
		US$ (millions)	US$ (millions)	US$ (millions)	(%)
1986	80	13	0.05	938	71
1987	82	118	0.44	3,125	294
1988	79	115	0.45	1,128	-44
1989	76	773	3.03	6,756	493
1990	110	5,854	23.70	18,737	47
1991	134	8,502	34.42	15,564	34
1992	145	8,567	34.13	9,922	-8
1993	160	21,770	88.50	37,824	417
1994	176	23,203	91.71	21,785	32
1995	205	52,357	208.59	20,782	47
1996	228	37,737	152.78	30,797	144
1997	258	58,104	230.57	61,879	254
1998	277	70,396	283.85	33,975	-25
1999	285	84,034	356.08	114,271	485
2000	315	181,934	739.57	69,507	-38
2001	310	80,400	324.19	47,689	46
2002	288	70,756	280.78	34,402	-25

Source: Compiled from CMB (2003)

After its establishment in 1986, the ISE made rapid progress during the period of 1990-2000. In this period, the Turkish economy also often experienced global effects from a number of geopolitical, financial and economic crises; for instance, by the Gulf War Crisis in 1991, 1997 Asia Crisis, 1998 Russia Crisis and 2000 Argentina Crisis. However, the major financial crisis that strongly affected the ISE was the systemic banking crisis that the Turkish economy experienced in the early 2000s (BRSA, 2010). As well, persistently increasing public deficit, the issuance of government debt securities for financing public debt, high rates of real interest paid on these securities, high and volatile inflation and unstable governments, coupled with consistent intervention by the military that added political uncertainty, were some of the main public and macro-economic imbalances that prevented the Turkish capital markets from improving (CMB, 2003; IIF, 2005). Moreover, there were other reasons which had to do with the nature of Turkey's civil law tradition and its inefficient, and inconsistent regulatory framework, which ensue paucity of the rule of law and its enforcement; particularly, the poor Turkish culture of corporate governance and transparency and disclosure practices (Aksu and Kosedag, 2006).

Studies show that Turkey is a civil law country[1] where corporate ownership structure is characterised by concentrated family ownership.[2] Aksu and Kosedag (2006) emphasised that the predicted benefits of good corporate governance and transparency and disclosure practices are especially important for emerging markets like Turkey, who are eager for external capital as their economies typically grow faster than that of more developed countries. Aksu and Kosedag, however, argued that the transparency and disclosure practices of the ISE firms were not impressive in terms of financial statement disclosure as well as disclosures of shareholder's rights and board and management structures. It was because the ISE's financial reporting standards (the Turkish Code of Commerce, dating back to 1957) were only based on the generally accepted principles of accounting and auditing, and the concept of full and fair disclosure. It did not therefore regulate financial reporting properly and remained weak in the enforcement of rules and lack of a disclosure philosophy in the Turkish business culture.[3]

Ararat and Ugur (2003) pointed out specific corporate governance problems and lack of efficient transparency and disclosure practices experienced by Turkish firms. These

[1]Turkey is a civil law country where the present Turkish Commercial Code is adopted from the Continental European Business Law (civil law), dating back to 1957. It had a very late start in the liberalisation of its economy and the establishment of its stock market (ISE) whose history only dating back to 1986 compared to the developed stock exchanges with hundreds of years of historical development (Adaoglu, 1999; 2000; Aksu and Kosedag, 2006). Turkey has a history of poor structural and microeconomic policies as well as a poor culture of corporate governance and transparency and disclosure practices (IIF, 2005; Aksu and Kosedag, 2006). La Porta *et al.* (1997), well-known scholars for their research interest in emerging markets, also categorised Turkey as a French origin civil law country in their study and concluded that civil law countries generally have weaker rule of laws to protect investors than common law countries. In fact, they found evidence that French civil law countries tend to have poorer minority investors protection and relatively more corruptions among other types of civil law traditions.

[2] Gursoy and Aydogan (1999) reported that around 44% of firms listed on the ISE belonged to a family or a small group of families and other 30% of them were controlled by holding companies (in other words, business groups), showing predominant family involvement in approximately 74% of all firms between 1992 and 1998. Yurtoglu (2003) found that families ultimately owned about 80% of the 305 firms listed on the ISE as of 2001 and families typically tended to organise a large number of firms under a pyramidal ownership structure or through a complicated web of inter-corporate equity linkages and also often made the use of dual class shares or other corporate charter arrangements through which they can reduce their cash flow rights while they firmly have the control on their companies. Similarly, the task force report of the Institute of International Finance (2005) documented that as is the case in many other emerging markets, the largest domestically owned Turkish firms were mainly family-controlled and one shareholder generally controlled more than 50% of voting rights in 45% of the all firms listed on the ISE. It is also reported that at least three-fourths of all corporations are owned by families or a holding company controlled by a family. Therefore, the protection of minority shareholder interests relies primarily on full disclosure and accurate financial reporting (IIF, 2005).

[3] In common law countries, the enforcement of high-quality financial reporting standards is compulsory and required for shareholder protection. However, in civil law countries, such as Turkey, standard-setting and enforcement are principally functions of government institutions and therefore there is a lower demand for high-quality financial reporting and disclosure in such economies, since the reporting requirements are oriented towards tax offices and financial institutions (UNCTAD, 2008). Hence, in Turkey, accounting and auditing principles were not good enough for enforcement of good shareholder protection.

included concentrated and pyramidal ownership structures dominated by families, ownership of many banks by these groups of companies, inconsistent and unclear accounting and tax regulations, and misinformation faced by investors because of the absence of inflation and consolidation accounting standards. In addition, Ararat and Ugur suggested that, as a result of this infrastructure, agency problems concentrate on asymmetric information, weak minority shareholders' and creditors' rights, inconsistent and unclear disclosure policies, and convergence of ownership and management, which create an environment that may foster corruption, share dilution, asset stripping, tunnelling, insider trading and market manipulation.

Indeed, during the late 1990s, a long list of cases in tunnelling became a prominent issue in the Turkish public. A 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, concerning, in many cases, evident involvement 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. This was done typically through the use of company assets or non-arm's length related party transactions (IIF, 2005).[4] In the following period, in the early 2000s, the Turkish economy experienced a systematic banking crisis, which was the major financial crisis that strongly affected the ISE. As a result, 22 banks were transferred to the SDIF (Saving Deposit Insurance Fund). The cost of re-structuring these banks and the banking system was US$ 53.6 billion, which was equal to one-third of the national income in Turkey in 2001 (BRSA, 2010).

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[4] For instance, in 1999, the Capital Markets Board (CMB) of Turkey inspected related party transactions mutually between Turk Tuborg and its parent company, Yasar Holding, and affiliated companies. The CMB found that Tuborg shares held by Bimpas (Tuborg's marketing company) were sold to Mr.Selcuk Yasar, who was the ultimate owner of Yasar Holding, and the price for this transaction was actually paid two years later. Tuborg also had a contract with the Altinyunus Hotel, which was another Yasar Group company, for a period of 15 years to rent 15 rooms at above published prices. Additionally, Tuborg donated a property to the Yasar Foundation in violation of its Articles of Association, whilst selling another property to another Yasar Group company (Desa) at a lower than its market price. Lastly, the CMB questioned that Turk Tuborg bought shares in Yasar Holding's bank, namely Yasarbank, to help the bank from failing but Yasarbank did eventually fail and was taken over by the Savings Deposit insurance Fund (IIF, 2005).

1.3.3 Market Integration Process of the ISE since 2003

Following the November 2002 elections, which resulted in a one-party (non-coalition) government, the political uncertainty at some degree faded away and the economic programs and structural reforms were jointly carried out by the government and the International Monetary Fund (IMF), commencing in March 2003 (CMB, 2003). 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 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).

According to the task force report provided by the IIF (2005), the legal and institutional environment for corporate governance, and transparency and disclosure practices in Turkey improved, particularly in the past few years, in line with the structural reforms implemented in collaboration with the IMF. In addition, Turkish government and the CMB, together with some private sector organisations such as the Turkish Industrialists and Businessmen's Association (TUSIAD), the Corporate Governance Forum of Turkey (CGFT), the Corporate Governance Association (KYD) and the Foreign Investors Association (YASED), performed hard to improve the rules for corporate governance and transparency and disclosure.

The Capital Markets Board (CMB) attributed great importance to improve communications with investors, issuers and other institutions in 2003, in order to ensure that markets functioned in a safer, more transparent and efficient manner, in accordance with regulations that were adopted in harmony with international norms and developments (CMB, 2003). Accordingly, one of the most important developments was that, in line with the EU requirements, the CMB issued the Communiqué Serial: XI, No: 25 entitled "Accounting Standards in Capital Markets" in November 2003, adopting International Financial Reporting Standards (IFRS) and enforcing publicly owned and traded firms to use new rules. In addition, the CMB obliged the implementation of inflation-adjusted accounting at the same time (UNCTAD, 2008).

Moreover, in cooperation with the World Bank and the Organisation for Economic Cooperation and Development (OECD), the CMB's Corporate Governance Principles were published in 2003, aiming to improve the ISE-listed firms' corporate governance practices. The CMB Principles consisted of four major parts. The first part discussed

shareholders' rights and their equal treatments involved with issues such as right to obtain and evaluate information, right to vote, right to join the general shareholders meeting and more minority rights detailed in this part. The second part included principles that were related to disclosure and transparency for establishing information policies in firms with respect to shareholders and the adherence of firms to these policies. The third part was concerned about firms' obligations for their stakeholders, including their workers, creditors, customers, suppliers, institutions, non-governmental organisations, the government, and potential investors who may think of investing in these firms in order to regulate the relationship between the firms and their stakeholders. The fourth part discussed the functions, duties, obligations, operations and the structure of the board of directors as well as the committees to be created to support the board operations and executives (CMB, 2003; 2004; Caliskan and Icke, 2011).

Structural problems in the banking sector basically deepened during 2000 and turned to a systemic banking crisis in February 2001. Many amendments were passed to improve the transparency and quality of the banking sector. "The Banking Sector Restructuring Program" was implemented in May 2001 in order to restructure the public banks, resolve banks taken over by the SDIF, rehabilitate the private banking system, and to strengthen the surveillance and supervision frame to increase efficiency in the sector (BRSA, 2010). Several group banks, which previously funded much of their own business group companies' financial needs, declared bankrupt. With the introduction of "the Regulation on Establishment and Operations of Banks" in July 2001, the risk group definition and calculation of loan limits for a single group (including banks, businesses and subsidiaries in the same group) considering direct and connected lendings were established in order to avoid credit risk concentration as well as improve the assets structure of the banking sector. As a result of preventing insider lending as a source of financing, the ISE firms turned to the equity market with a greater incentive for more transparent financing (IIF, 2005).

Other improvements also took place in order to improve the Turkish market in terms of corporate governance and disclosure practices, since it sought to integrate its economy with Europe and harmonise its institutions with those of the EU. The government, accordingly, accelerated "privatisation" of State Economic Enterprises, together with the elimination of legal barriers to market entry, and a general reduction in the state's direct involvement in the economy, indicating the importance of corporate governance (IIF, 2005; Aksu and Kosedag, 2006). It is worth noting that 58% of the IPO proceeds

in the ISE, between 2003 and 2008, were raised by privatisation activities (TSPAKB, 2008). Moreover, since pension funds and other large institutional investors were not permitted to vote for corporate directors, there were only a few institutional investors in Turkey with an interest in good corporate governance, hence the sector was underdeveloped (IIF, 2005). However, "Individual Retirement Savings and Investments System" was implemented in 2003 (CMB, 2003) in the hope of creating pension funds that were expected to serve as institutional investors and increase monitoring in public firms (Aksu and Kosedag, 2006).

A brief timeline and some selected milestones of Turkish Capital Markets from 2003 and forward are summarised below (TSPAKB, 2007, p.5; 2008, p.40; 2012, p.1-2).

- 2003-2004: Corporate Governance Principles were published. Establishing first private pension funds. Adoption of IFRS (International Financial Reporting Standards). First exchange traded fund was established.

- 2005-2006: Setting up Turkish derivatives exchange. Dematerialisations of equities, corporate funds and mutual finds were completed. Taxation of investment instruments was changed.

- 2007-2008: Opening auction introduced at the ISE. Mortgage law is passed. Eurobond market was established within the ISE. The ISE trading hours are extended by 30 minutes. New anti-money laundering regulations in line with the FATF (Financial Action Task Force).

- 2009-2010: Automated disclosure platform introduced. Emerging Companies Market and Collective Products Markets is established within the ISE. Regulations regarding IPOs are eased. Market was introduced for warrants and ETFs.

- 2011-2012: First Islamic bond and electricity futures were issued, FOREX regulations were introduced and Investor Education Campaign was initiated.

Reforms implemented after the major financial crisis, as well as a number of well-publicised unfair treatments experienced by minority shareholders, and the political stability obtained after 2002 all provided a significant improvement in fundamental indicators. Under the IMF-supported program, inflation fell spectacularly from triple digits in 2001 to single digits in 2004, and was realised as 7.7% as of 2005. Real GDP growth strikingly picked up and averaged 8% during 2002-2004. Additionally, the public sector primary surplus exceeded 5% of GNP, leading to an anticipated decrease in net public debt of a percentage of GNP from 92% in 2001 to 65% by the end of 2004. As the public debt burden was reduced, the short-term policy interest rates were declined below 20% by the end of 2005. These significant structural and macroeconomic improvements of Turkish economy greatly increased both competition and profitable investment opportunities. This resulted in an increase of interest of global

capital, and caused a strong capital entry, oriented directly to the country and formed as portfolio investment (IIF, 2005; BRSA, 2010). Indeed, after the implementation of major reforms in 2003, the Turkish stock market bounced back and generally had a rapid growth in terms of the number of listed firms, trading volume, market capitalisation (CMB, 2012) attracting a significant amount of foreign investments (Adaoglu, 2008) during the period 2003-2012.

Table 1.2 Development of Main Indicators of the ISE during the period 2003-2012

The table illustrates the development of the number of listed firms in the ISE, trading volume, total market capitalisation, equities traded by foreign investors and annual rate of return for the ISE-100 Index based on closing prices according to the years. For the ISE-100 Index calculation, the value of the ISE-100 Index in January 1986 is taken as a base year.

Year	No. of Listed Firms	Volume of Trade		Total Market Capitalisation	Foreigners Stocks in Custody	Foreigners to Total Stocks Ratio	Annual Rate of Return for the ISE 100 Index
		Total Annually	Daily Average				
Year	End of Year	US$ (millions)	US$ (millions)	US$ (millions)	US$ (millions)	(%)	(%)
2003	285	100,165	407.17	69,003	8,690	51.5	80
2004	297	147,755	593.40	98,073	15,283	54.7	34
2005	306	201,763	794.35	162,814	33,812	66.3	59
2006	322	229,642	918.57	163,775	49,313	65.3	-2
2007	327	300,842	1,192.82	289,986	70,213	72.3	42
2008	326	261,274	1,040.93	119,698	42,152	67.5	-52
2009	325	316,326	1,255.26	235,996	56,246	67.3	97
2010	350	425,747	1,702.99	307,551	71,267	66.8	25
2011	373	423,584	1,674.25	201,924	45,919	62.2	-22
2012	395	347,854	1,374.92	309,644	78,545	65.8	53

Source: Compiled from CMB (2003, 2007, 2012)

Table 1.2 illustrates that the number of listed firms on the ISE significantly increased from 285 in 2003 to 395 in 2012. The annual ISE stocks trading volume rapidly grew from US$ 100 billion in 2003 and reached a peak of US$ 425.7 billion in 2010. It then stayed approximately at this level in 2011, followed by a noticeable decrease to US$ 348 billion in 2012. Moreover, the total market capitalisation of the ISE sharply increased from US$ 69 billion in 2003 to US$ 290 billion by the end of 2007, and then decreased to US$ 119.7 billion in 2008, due to the global financial crisis experienced in that year. From this point, the total market capitalisation of the ISE showed generally an increasing but fluctuating trend, and increased to US$ 309.6 billion by the end of 2012. Furthermore, Table 1.2 presents the total stocks held in custody by foreign investors and the ratio of stocks owned by foreigners to total stocks traded in the ISE by the end of each year during the period, 2003-2012. Indeed, this period has been 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.

Perhaps 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. This still revealed a serious contribution from foreign investors, holding about two-thirds of the total equities in custody in the ISE. Finally, the figures of annual rate of returns calculated for the ISE-100 Index, based on the closing prices in the table, indicate a high volatility and high returns in some years, as well as a considerably big loss in 2008 over the period 2003-2012.

1.3.4 Historical Dividend Policy Regulations of the ISE

Dividend payment decisions are not always solely depended on managers' judgement to pay or not to pay, since factors such as regulations, financial crises and trends in the macro-economy might have implications for dividend policy (Kirkulak and Kurt, 2010). The evidence from cross-country studies (La Porta *et al.,* 2000; Aivazian *et al.,* 2003a) has revealed that there are regulatory differences related to the dividend policy making process forced by the governments throughout the world. Especially, as Glen *et al.* (1995) stated, emerging market governments are likely to enforce constrains on the dividend policy in order to protect both minority shareholders and creditors.

Public corporations listed on the ISE are subject to the regulatory policies put into effect by the CMB of Turkey. Indeed, the dividend policy in the ISE was heavily regulated when it first started to operate in 1986. For the fiscal years 1985-1994, the first mandatory dividend policy was implemented by the enactment of Capital Markets Law in 1982 and, according to the first regulation on dividend payments, 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 such as the payments to employers or maintaining it as retained earnings were not legally possible (Adaoglu, 1999; 2000). The main purpose of this mandatory dividend payment regulation was to protect minority shareholders rights by providing them satisfactory levels of dividends. This was because the liquidity in the stock capital markets was almost non-existent as there was no stock exchange before 1986, and the only source of income for minority shareholders was the dividend income (Aytac, 1998).

In 1995, there was a major change in the dividend regulations implemented by the CMB, which abolished the mandatory cash dividends distribution requirement for the

listed firms in the ISE.[5] The amended regulations provided greater flexibility to the listed-firms since they were not forced to pay out a certain percentage of their income as cash dividends anymore. In fact, firms were allowed to decide between distributing dividends and keeping their profits as retained earnings. Furthermore, even if a firm decided to pay "first dividend", payments could be in the form of cash dividends, stock dividends or both cash and stock dividends, which were subject to voting in the annual general meeting. The main purpose of the changes was to remove the restrictions forced on the dividend payments and therefore to allow the investors to interpret the dividend policy changes efficiently and to reflect their judgements in the shares prices (Adaoglu, 1999; 2008). In addition, the abolishment of the mandatory requirement of distributing 50% of the profits as cash dividends would lessen the firms' liquidity problems and would increase the amount of internal financing for these firms (Aytac, 1998).

Turkey went through a major economic crisis in 2001, and in order to recover, signed a standby agreement with the IMF. As well as seeking to integrate with the EU, it started to implement major structural reforms as previously explained. However, the crisis resulted in substantial losses for investors, especially small Turkish shareholder who heavily invested in the ISE prior to the economic crisis. Although the stock market bounced back and attracted a substantial amount of foreign investments after implementing various major structural reforms, the fear of small Turkish investors continued. In order to attract these Turkish investors back to the stock market, the CMB replaced the mandatory dividend policy, beginning with fiscal year 2003 (Adaoglu, 2008). Kirkulak and Kurt (2010) pointed out that the purpose for mandatory dividend policy was to protect minority shareholders rights against the controlling shareholders. This is because Turkish firms are generally highly dominated by families and mainly 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.

With the replacement of the second mandatory dividend policy, the ISE-listed firms were obligated to pay at least 20% of their distributable income as the "first dividend". However, in a more flexible way from the first mandatory dividend payment policy between 1985 and 1994, the listed firms did not have to pay the "first dividend" in cash but had the option to distribute it in cash dividends or stock dividends or a mixture of both, which was subject to the board of directors' decision. The total payment, however,

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[5] Decree issued by the CMB Serial: IV, No: 9 published in the Official Gazette dated 27/12/ 1994 and No: 22154.

could not be less than 20% of the distributable income for the fiscal year 2003. They were also given a right to distribute stock dividends with the requirement that the amount of stock dividends is added to the paid-in capital (Adaoglu, 2008; Kirkulak and Kurt, 2010).[6]

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 then stayed at this level for the fiscal year 2005. Then, the minimum percentage of mandatory dividend payment level was reduced to 20% again in the fiscal year 2006 and remained at this level for the fiscal years 2007 and 2008. Nevertheless, from the fiscal year 2009 onwards (2010, 2011 and 2012), the CMB decided to not determine a minimum dividend payout ratio and to abolish mandatory minimum dividend payment distribution requirement for the publicly-listed firms trading on the ISE. This provided total freedom to the ISE-listed firms to make their own dividend policy decisions to pay or not to pay, with the requirement that any decisions made regarding dividends should be publicly disclosed.[7]

1.3.5   The Rationale in Examining Dividend Policy of the ISE-listed Firms

Turkey had a very late start in the liberalisation of its economy and the establishment of its stock market, the ISE, whose history only dating back to 1986 compared to the developed stock exchanges with hundreds of years of historical development (Adaoglu, 1999; 2000; Aksu and Kosedag, 2006). Studies reveal that Turkey is a civil law country (La Porta *et al.*, 1997), where corporate ownership structure is characterised by highly concentrated family ownership (Gursoy and Aydogan, 1999; Yurtoglu, 2003). There is also a history of poor structural and microeconomic policies as well as a poor culture of

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[6] The CMB decision number: 16535 and dated 30/12/2003, published in the CMB Weekly Announcement Bulletin No: 2003/63.

[7] Relating to the fiscal year 2004, the CMB decision number: 51/1747 and dated 30/12/2004 published in the CMB Weekly Announcement Bulletin No: 2004/54.

Relating to the fiscal year 2005, the CMB decision number: 4/67 and dated 27/01/2006 published in the CMB Weekly Announcement Bulletin No: 2006/3.

Relating to the fiscal year 2006, the CMB decision number: 2/53 and dated 18/01/2007 published in the CMB Weekly Announcement Bulletin No: 2007/3.

Relating to the fiscal year 2007, the CMB decision number: 4/138 and dated 08/02/2008 published in the CMB Weekly Announcement Bulletin No: 2008/6.

Relating to the fiscal year 2008, the CMB decision number: 1/6 and dated 09/01/2009 published in the CMB Weekly Announcement Bulletin No: 2009/2.

Relating to the fiscal year 2009 and onwards, the CMB decision number: 02/51 and dated 27/01/2010 published in the CMB Weekly Announcement Bulletin No: 2010/4.

corporate governance and transparency and disclosure practices (IIF, 2005; Aksu and Kosedag, 2006). With the rapid development since the establishment in 1986, the ISE became highly representative of a promising emerging market, with fast growth in terms of the number of listed firms, trading volume, market capitalisation and foreign investment (Adaoglu, 2000) as well as indicating high volatility in returns especially during the period 1990-2000.

In this period, Turkish economy also often experienced global effects from a number of geopolitical, financial and economic crises; for instance, the Gulf War Crisis in 1991, 1997 Asia Crisis, 1998 Russia Crisis and 2000 Argentina Crisis. However, the major financial crisis that strongly affected the ISE was the systemic banking crisis that Turkish economy experienced in 2001 (BRSA, 2010), which resulted in substantial losses for shareholders, especially small Turkish investors who heavily invested in the ISE prior to economic crisis (Adaoglu, 2008). Indeed, 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 transactions with politicians (Yurtoglu, 2003).

Having experienced the series of booms and busts during its liberalisation period of its economy (from the late 1980s to the early 2000s), the new Turkish government (following the November 2002 elections which resulted in a non-coalition government) 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). 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; and therefore, to integrate its economy with Europe and to harmonise its institutions with those of the EU (IIF, 2005; Aksu and Kosedag, 2006; Rawdanowicz, 2010).

In this context, since the main motivation of this doctoral thesis is to investigate dividend policy behaviour of an emerging market after implementing serious economic and structural reforms in order to integrate with world markets, the Turkish stock

market, namely the ISE, offers an ideal setting for the purpose of this thesis, allowing a study of the dividend behaviour of an emerging market, which implemented major reforms starting with the fiscal year 2003, in compliance with the IMF stand-by agreement, the EU directives and best-practice international standards for a better working of the market economy, outward-orientation and globalisation.

1.4   The Importance of the Study

1.   As evidenced by prior studies taken in the context of developing markets, it is not surprising that dividend policy behaviour in emerging markets generally tend to be different from developed markets in many aspects due to various factors such as political, social and financial instability, lack of adequate disclosure, poor laws and regulations, weaker financial intermediaries, newer markets with smaller market capitalisations, weaker corporate governance and different ownership structures (La Porta *et al.,* 1999; 2000; Kumar and Tsetsekos, 1999; Aivazian *et al.,* 2003a; 2003b; Yurtoglu, 2003). What if, however, an emerging market implements serious economic and structural reforms for market integration? Then what behaviour does the dividend policy of this emerging market show? This doctoral thesis, differently from earlier research, aims to carry the dividend debate into an emerging market context but attempting to answer the above question.

2.   As previously explained, the Turkish stock market offers an ideal setting for the purpose of this study. There is, however, very limited evidence about the dividend policy in Turkey from a few studies (La Porta *et al.*, 2000; Adaoglu, 2000; Aivazian *et al.*, 2003a; 2003b; Kirkulak and Kurt, 2010). These studies were undertaken in the earlier stage of the ISE while the Turkish economy was yet implementing its financial liberalisation programme, suffering long-standing macro-economic imbalances, and experiencing a number of financial crises. The Turkish economy implemented various major economic and structural reforms in collaboration with the IMF, the EU directives and best-practice international standards for a better working of the market economy, outward-orientation and globalisation, starting with the fiscal year 2003. This study provides empirical evidence about the dividend policy behaviour of the ISE-listed companies during its market integration period by examining a long and more recent panel dataset from 2003 to 2012.

3.   The transparency and disclosure practices of the ISE firms were not remarkable; because the ISE's financial reporting standards (the Turkish Code of Commerce dating back to 1957) were only based on the generally accepted principles of accounting and auditing (Aksu and Kosedag, 2006). In 1990s, Turkey enjoyed an economic growth but it was overall an economically unstable decade, with the experience of a number of financial crises and the inflation rate surpassing 100% during the decade. As a result of the instability, high inflation rates, inconsistent and unclear accounting practices, and the absence of inflation accounting standards, the historical financial statements of the ISE firms lost their information value and misinformed investors (Ararat and Ugur, 2003; UNCTAD, 2008). However, the need for a global set of high-quality financial reporting standards has especially been important in developing countries and countries with economies in transition. They tend to be eager for external capital as their economies typically grow faster so that foreign and domestic investors can verify the underlying profitability of the firm and therefore the security of their investment with the help of comparable and consistent financial data (Aivazian *et al.*, 2003a; UNCTAD, 2008).

In this respect, the CMB of Turkey attributed great importance to improve communications with investors, issuers and other institutions, in 2003, 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 (CMB, 2003). Accordingly, one of the most important developments was that in line with the EU requirements. The CMB issued the Communiqué Serial: XI, No: 25 entitled "Accounting Standards in Capital Markets" in November 2003, adopting International Financial Reporting Standards (IFRS) and enforcing publicly owned and traded firms to use new rules. In addition, the CMB requested the implementation of inflation-adjusted accounting at the same time (UNCTAD, 2008). This has resulted in a more transparent and more efficient worldwide financial reporting standards, providing comparable and consistent financial data for foreign and domestic investors, and other institutions. Likewise, the adoption of the IFRS and inflation accounting has given researchers a way better opportunity to study firm-specific characteristics of firms in the Turkish market. This study, thus, investigates what firm-specific (financial) determinants affect dividend policy decisions of the ISE-listed firms and whether they follow the same firm-specific determinants as suggested by empirical studies from developed markets, while setting their dividend

policies over a decade after Turkey adopted the IFRS and inflation accounting, starting with the fiscal year 2003.

4.   The evidence from cross-country studies (Glen *et al.,* 1995; La Porta *et al.,* 2000; Aivazian *et al.,* 2003a) revealed that there are regulatory differences related to the dividend policy making process forced by the governments throughout the world; particularly, emerging market governments are likely to enforce constrains on the dividend policy in order to protect both minority shareholders and creditors. For the fiscal years 1985-1994, the dividend policy in the ISE was indeed heavily regulated due to the first mandatory dividend policy imposed by the CMB, obliging the ISE firms to pay at least 50% of their distributable income as a cash dividend. This did not provide the managers of these firms much flexibility to choose their own dividend policies. In fact, earlier studies (Adaoglu, 2000; Aivazian *et al.,* 2003a) showed that the ISE firms followed unstable dividend policies since cash dividend payments were solely depended on the firm's current year earnings as forced by the regulations and any variability in earnings was directly reflected in the level of cash dividends.

In 2003, various reforms in accounting standards, corporate governance, transparency and disclosure practices were implemented, as well as the restructuring public banks and regulating private banks. Risk group definitions and a calculation of loan limits for a single group, which generally includes banks, businesses and subsidiaries in the same group, considering direct and connected lending, were established. This forced the ISE firms to the equity market with greater incentive for more transparent financing since insider lending (in other words non-arms length transactions) as a source of financing was prevented (IIF, 2005). The CMB of Turkey also implemented much flexible mandatory dividend policy regulations (during 2003-2008) and further removed restrictions forced on the dividend payments (2009 and onwards) in order to allow the ISE managers to set their own dividend policies and reflect their judgements in the share prices (Adaoglu, 1999; 2000; 2008). In accordance, this study examines whether ISE firms adopt deliberate cash dividend policies to convey a signal to investors, and as well, whether they follow stable dividend policies, as in developed markets, by using the Lintner (1956) model. Particularly, over a decade after the mandatory dividend policy regulations are considerably relaxed and the insider lending (non-arm's length transactions) is prevented as a source of financing along with the implementation of major reforms in 2003.

5.   Corporate ownership structure in Turkey is characterised by concentrated family ownership (Gursoy and Aydogan, 1999; Yurtoglu, 2003; IIF, 2005). Similarly, a number of cross-country studies (La Porta *et al.,* 1999; Claessens *et al.,* 2000; Faccio *et al..* 2001) provide evidence that shows ownership by large controlling shareholders, typically families, as the dominant form of ownership structure in most developing economies. Shleifer and Vishny (1997) argued that when large shareholders, including family shareholders, hold almost full control, they tend to generate private benefits of control that are not shared with minority shareholders. In these cases, the salient agency problem is therefore expropriation of the wealth of minority owners by the families, the *principal-principal conflicts*. Indeed, during the late 1990s, a long list of cases of corruption, share dilution, asset stripping, tunnelling, insider trading and market manipulation dominated the Turkish public, and a number of listed firms' minority shareholders were harmed by these events (Ararat and Ugur, 2003; Yurtoglu, 2003; IIF, 2005).

Cash dividends can be used to either reduce or exacerbate the principal-principal conflicts, since dividends are the substitutes for legal protection of minority shareholders in the countries with weak legal protections. By paying dividends, controlling shareholders return profits to investors, the possibility of expropriation of wealth from others is reduced (La Porta *et al.*, 2000). It is difficult to judge whether families tend to expropriate of the wealth of minority owners through dividends in emerging markets. There are several studies (Faccio *et al.,* 2001; Chen *et al.,* 2005; Wei *et al.*, 2011; Aguenaou *et al.*, 2013; Gonzalez *et al.*, 2014)) examined the relationship between family-control and dividend policy in emerging markets, with a mixed report of findings.

In 2003, the CMB's Corporate Governance Principles was published in order to improve the ISE listed firms corporate governance practices. The CMB Principles consisted of four major parts; particularly, shareholders, disclosure-transparency, stakeholders and board of directors. All firms traded in the ISE need to comply with these principles and publish corporate governance compliance report yearly (CMB, 2003; 2004 and Caliskan and Icke, 2011). 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 practice, its capital market is still heavily concentrated and characterised by high family ownership. This study, therefore, investigates the link between ownership structure and dividend policy, based on the

agency cost theory. It analyses the effect of family control on dividend policy from the principal-principal conflict perspective, as well as considering the impact of the non-family blockholders, such as foreign investors, domestic financial institutions and the state, and minority shareholders; particularly, on the ISE firms dividend policy decisions over the past decade, when Turkey has employed major reforms, including the publication of the CMB's Corporate Governance Principles in the fiscal year 2003.

6.   This study extends empirical research on dividend policy of an emerging market, which not only passed laws for financial liberalisation, but implemented serious economic and structural reforms to integrate with world markets. Hence, it could be a benchmark for future longitudinal and cross-country research.

7.   This study particularly provides important indicators on dividend policy behaviour of the ISE-listed firms, after the Turkish government implemented various major economic and structural reforms in collaboration with the IMF, the EU directives and best-practice international standards, all for a better working of the market economy, outward-orientation and globalisation, starting with the fiscal year 2003. Such a contribution would be of interest to managers of these firms while they make their dividend policy decisions, investors who are attracted to invest in firms traded in the ISE, and other stakeholders, such as researchers and professional bodies.

1.5   The Structure of the Thesis

The remainder of this thesis is structured as follows:

Chapter 2 presents a detailed literature review of main dividend policy theories. These include the dividend irrelevance theory, signalling theory, agency cost theory, transaction cost theory, as well as tax-related explanations, bird-in-the-hand theory, pecking order theory, residual dividend theory, catering theory, and maturity hypothesis. It provides extensive empirical studies, where these theories were tested in order to examine the relationship between theory and practice, from both developed and developing markets.

Chapter 3 empirically investigates what firm-specific determinants affect dividend policy decisions of the ISE-listed firms, and whether they follow the same firm-specific determinants as suggested by empirical studies from developed markets, while setting

their dividend policies a decade after Turkey adopted the IFRS and inflation accounting (fiscal year 2003). This investigation considers a more comprehensive empirical models by estimating the effects of various financial determinants on dividend policy and includes regression techniques, using pooled and panel data analyses (logit/probit and tobit estimations). It employs alternative dividend policy measures (the probability of paying dividends, dividend payout ratio and dividend yield), and discusses the main firm-specific determinants of dividend policy for Turkish firms.

Chapter 4 attempts to examine whether the ISE-listed firms adopt deliberate dividend policies to signal information to investors, and whether they adopt stable dividend policies as in developed markets by using Lintner's (1956) model, a decade after the mandatory dividend policy regulations are considerably relaxed and insider lending (non-arm's length transactions) is prevented as a source of financing, along with the implementation of major reforms in 2003. It employs richer research models (pooled OLS, random effects, fixed effects and system GMM) in order to provide more valid, consistent and robust results. The chapter also considers several extensions of Lintner's (1956) model by including additional regressors as explanatory variables, observed in the literature and thought to be possibly influencing the dividend policy of the ISE firms during the study sample period.

Chapter 5 provides empirical research for the link between ownership structure and dividend policy based on the agency cost theory. Specifically, it analyses the effect of family control on dividend policy from the principal-principal conflict perspective and also considers the impacts of the non-family blockholders (foreign investors, domestic financial institutions and the state) and minority shareholders on the ISE firms dividend policy decisions, over a decade when Turkey employed major reforms, which include the publication of the CMB's Corporate Governance Principles in the fiscal year 2003. The chapter uses pooled and panel data analyses (logit/probit and tobit estimations), as well as employing alternative dividend policy measures (the probability of paying dividends, dividend payout ratio and dividend yield), and discusses the findings of this empirical analyses.

Chapter 6 illustrates an overall summary of the research results. In addition, it gives recommendations for practice, addresses the research limitations and provides suggestions for possible future research.

CHAPTER 2

A LITERATURE SURVEY ON DIVIDEND POLICY

2.1 Introduction

Dividend policy is one of the most controversial topics in corporate finance literature. Finance academics have dealt with various theories in order to explain why companies should pay or not pay dividends. Some researchers (Lintner, 1956; Brennan, 1970; Elton and Gruber, 1970; Rozeff, 1982) have built and empirically tested a great number of models to explain dividend behaviour. Others (Baker *et al.*, 1985; Pruitt and Gitman, 1991; Baker and Powell, 1999; Brav *et al.*, 2005; Baker and Smith, 2006) have surveyed corporate managers to discover their thoughts about dividends. Hence, dividend policy literature is extensive and contains various theories, hypotheses and explanations for dividends. Despite much research and extensive debate, the actual motivation for paying dividends still remains unsolved (Baker and Powell, 1999).

Fischer Black (1976, p.5) once described this lack of consensus on the matter as the *dividend puzzle* by stating that "*The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together.*" Although Black (1976) came to this conclusion almost four decades ago, his observation still seems valid since financial economists have not reached a definitive theory on dividends. Brealey and Myers (2003) listed dividends as one of the ten important unsolved problems in finance in their textbook, supporting this conclusion. Allen and Michaely (1995, p.833) suggested that "*Much more empirical and theoretical research on the subject of dividends is required before a consensus can be reached.*"

Accordingly, the aim of this chapter is to provide a detailed literature review of leading theoretical developments on dividend policy and various empirical studies, which have tested these theories in order to examine the relationship between theory and practice, from both developed and developing markets. The structure of this chapter is as follows. Section 2.2 outlines the main dividend theories. In Section 2.3, the empirical studies of dividend policy in developed markets are reviewed, followed by the empirical studies of dividend policy in developing markets in Section 2.4. The conclusions are then presented in Section 2.5.

2.2 Dividend Policy Theories

In this section, the major dividend policy theories are discussed, beginning with the dividend irrelevance theory, and followed by the signalling theory, agency cost theory,

transaction cost theory, tax preference theory, bird-in-the-hand hypothesis, pecking order theory, residual dividend theory, catering theory and maturity hypothesis.

2.2.1   The Dividend Irrelevance Theory

In 1961, Merton Miller and Franco Modigliani (M&M)'s seminal academic paper asserted that under the circumstance of a perfect capital market (PCM)[8] with rational investors[9] and perfect certainty,[10] a managed dividend policy is irrelevant. The valuation is only depended on the productivity of the firm's assets and not the type of dividend payout. In other words, no matter how much care managers take in choosing a dividend policy for their company, no particular dividend policy can increase or decrease shareholders' wealth over an alternative dividend policy. The reason for their indifference is because shareholders wealth is determined by the income generated by the investment decisions managers make, not by how they distribute that income. Hence, all the dividend policies are irrelevant.

Furthermore, according to M&M (1961)'s dividend irrelevance theory, under PCM, investors can undo any dividend decisions made by a firm's managers. Investors can gain their desired cash flow level by either selling shares to create *homemade* dividends or using unwanted dividends to buy shares of the firm's stocks. Consequently, under these conditions, one dividend policy is no different from any other dividend policy. Under the circumstances of a PCM with rational investors and perfect certainty, M&M (1961) illustrated their argument behind their theorem as below:

In a given year, the required rate of return on a share is equal to the dividend payment plus the capital gain provided by selling this share, all divided by the price of the share at the beginning of the period. That is (assuming one period world);

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[8] "In perfect capital markets, no buyer or seller (or issuer) of securities is large enough for his transactions to have an appreciable impact on the then ruling price. All traders have equal and costless access to information about the ruling price and about all other relevant characteristics of shares. No brokerage fees, transfer taxes, or other transaction costs are incurred when securities are bought, sold, or issued, and there are no tax differentials either between distributed and undistributed profits or between dividends and capital gains." (M&M, 1961, p.412)

[9] What Miller and Modigliani (1961) mean by rational investors is that under PCM, investors always prefer more wealth than less and they are indifferent to whether a specific increase in their wealth comes in the form of a dividend payment or an identical increase in a capital gain of their holdings of shares.

[10] The assumption of perfect certainty implies that all investors are certain about the future investment and future profits of every corporation. Therefore, there is no need to distinguish between stocks and bonds as sources of funds (M&M, 1961).

$$r = \frac{D_1 + (P_1 - P_0)}{P_0} \tag{2.1}$$

Where, P_0 is the current market price of shares in a given time; P_1 is the expected market price at the end of the period (the ex-dividend price of the share); D_1 is the dividend per share paid at the end of the period and r is the required rate of return of the share for the period. Reorganising Equation 2.1, we can find the current market price of shares as:

$$P_0 = \frac{D_1 + P_1}{(1 + r)} \tag{2.2}$$

Now, if we suppose that n is the number of shares outstanding at time zero, then the current value of the firm (V_0) is:

$$V_0 = nP_0 = \frac{nD_1 + nP_1}{(1 + r)} \tag{2.3}$$

Moreover, in order to prove that dividends are irrelevant, under the assumptions of PCM, Miller and Modigliani (1961) employed the sources and uses of funds equation. The firm's sources of funds are the cash flows from operations (CF_1) and the new equity financing during any given period (mP_1), where m is the number of new shares issued at time one and sold at the ex-dividend closing price P_1. The uses of funds are the dividend payments (nD_1) and any investment opportunities (I_1) taken in the same time interval. As the sources must equal the uses of the funds, therefore:

$$CF_1 + mP_1 = nD_1 + I_1 \tag{2.4}$$

Once the equation 2.4 is re-arranged,

$$nD_1 = CF_1 + mP_1 - I_1 \tag{2.5}$$

Replacing Equation 2.5 into Equation 2.3 for nD_1,

$$V_0 = \frac{CF_1 + mP_1 - I_1 + nP_1}{(1 + r)} = \frac{CF_1 - I_1 + (n+m)P_1}{(1 + r)} \tag{2.6}$$

Since $(n+m)P_1 = V_1$; therefore,

$$V_0 = \frac{CF_1 - I_1 + V_1}{(1+r)} \qquad\qquad (2.7)$$

As dividend payments do not appear in Equation 2.7 and since operating cash flows (CF_1), investments (I_1) and required rate of return (r) are not function of dividend policy, the value of the firm is not dependant of its current dividend policy. Therefore, the analysis[11] suggests that the firm's investment policy is the key determinant of its value and dividend policy is residual. Consequently, the dividend policy, under PCM, is irrelevant to the value of the firm (M&M, 1961).

Although Miller and Modigliani's (1961) dividend irrelevance theory is logical and consistent within a perfect market, once the idealised world of economic theory is left and we return to the real world, various market imperfections are being observed such as differential tax rates, information asymmetries, transaction costs, and conflicts of interest between managers and shareholders. In this respect, the irrelevance theory becomes highly debatable and these market imperfections might mean that dividend policies do matter. Indeed, much of the dividend literature has responded to M&M's irrelevance theory by focusing on the market imperfections and offering many competing theories about why companies pay, or not pay dividends.

2.2.2 Signalling (Asymmetric Information) Hypothesis

The signalling hypothesis is one of the most widely studied explanations, indicating that an information asymmetry[12] exists and therefore a firm's management has a better understanding of the firm's true value than outsiders who only have access to public information. Accordingly, managers use dividends to convey useful information about the current situation and future prospects of the firm.

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[11] The analysis can be carried over to more periods and the results will remain the same; that is the value of the firm is not affected by dividend policy. Also, the analysis above completely based on 100% equity financing. It can be extended to contain debt financing. However, the inclusion of debt financing does not affect the results. Similar to the equity-financed dividends, no additional value is created by debt-financed dividends since under the assumption of PCM, capital markets are perfect and complete; hence, amount of debt does not affect the total value of the firm (M&M, 1961).

[12] All interested participants such as managers, bankers, shareholders, potential investors and others, have the same information about a firm in a symmetrically informed market. However, if one part has superior information about the firm's current position and future performance, then an information asymmetry exists (John and Williams, 1985).

The idea of dividends signalling information to the market is an old one. Lintner's (1956) famous classic study[13] revealed that managers are concerned about dividend signalling over time. Lintner argues that managers believe the shareholders deserve a *fair share* of the firm's earnings through dividends. Although some managers supported a long-range payout ratio, they assume that shareholders prefer a steady increase in dividends. Therefore, managers intend to avoid making changes in their dividend rates that may have to be reversed in the future. In spite of this, managers tend to make *partial adjustment* towards a target payout ratio to smooth dividend payment streams in the short run and avoid spectacular and frequent changes. Adopting a *smoothed* dividend policy can prevent the volatility of dividends, which might signal volatility of cash flows that will increase a firm's beta and investors' required returns, thus decreasing firm value. Also, Lintner suggested that managers are reluctant to cut dividends unless adverse circumstances are likely to persist since they think dividend cuts are bad signals to the market. Consequently, managers are more concerned with changes in dividends from one period to the next, rather than absolute levels of dividends.

An alternative approach has been provided by the dividend signalling models, arguing that managers use dividends as a device to signal their superior information about future performance rather than lagged and current situation, and choose dividend levels to show this superior information. Based on this approach, rigorous logical signalling models for paying dividends, developed by Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985), propose that if managers are confident about the future prospects of their firms, they distribute larger cash dividends as a good signal to the investors. Moreover, John and Williams (1985) indicate that the market may value a firm's shares below its intrinsic value under some conditions; for example, if the current shareholders are selling their holdings to meet their personal liquidity needs or if the firm invests in risky projects. However, under these circumstances, in order to prevent or reduce this under-pricing, managers pay larger dividends to their shareholders as a credible signal when other firms, whose future prospects are not as good, cannot mimic

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[13] Lintner (1956) conducted a survey study on how US managers make dividend decisions. He collected 28 intensive interviews with managers responsible for the dividend decisions from 28 listed and well-established firms. After analysing the information collected in his survey, Lintner developed a regression model to represent the verbal description of the dividend decisions process, which works over longer periods and explains 85% of the dividend changes year to year. Lintner's model and findings have been supported by numerous researchers and therefore remain as a classic study on dividend behaviour.

the dividend behaviour of undervalued firms.[14] Hence, John and Williams (1985) argue that paying larger dividends are taken as a favourable inside information by the market; thus, investors prefer to buy the shares of firms distributing larger dividends at higher share prices. Contrarily, firms with no or less favourable inside information, in other words non-dividend paying firms, should experience negative price reactions.

2.2.3 Agency Cost Theory

Jensen and Meckling (1976), Rozeff (1982) and Easterbrook (1984) developed the agency cost explanation of why firms should pay dividends. This theory derives from problems which are associated with the separation of management and ownership, and the differences in managerial and shareholder priorities. The theory suggests that an effective dividend policy controls agency cost by reducing funds available for unnecessary and unprofitable investments, requiring managers to look for financing in capital markets. In their seminal paper, Jensen and Meckling (1976) stated that in the light of the costs to managers from possible agency conflicts, it becomes important to them that the company is seen to be free of such conflicts. Managers will therefore take measures, in addition to those taken by shareholders, to decrease the potential for agency conflicts. Subsequently, agency costs are defined as the loss to shareholders of controlling agency behaviour, through measures taken by themselves and by managers, as well as the costs from any agency behaviour that have not been controlled. Jensen and Meckling (1976) identified three components of agency costs: monitoring expenditures,[15] bonding expenditures[16] and residual loss,[17] respectively.

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[14] What is meant by credible signal in this scenario is that paying larger dividends must be extremely costly for other firms those cannot pay as much or even increase dividends. That means that these firms do not have favourable inside information to convey; therefore, when the firm delivers larger dividends, it is seen as favourable inside information and accepted as credible signal by the market.

[15] Jensen and Meckling (1976) argue that dividend payments force managers to raise external finance more frequently than they would without paying dividends and this allows outside professionals, such as investment banks, regulators, lawyers, public accountants and potential investors, to scrutinize the firm and monitor its managers' activities. This capital market monitoring decreases the agency cost and increases the market value of the firm.

[16] Bonding expenditures are associated with the amount of cash flow at managers' disposal. Dividend payments would reduce the agency costs by controlling and improving the forms of incentives that managers create for themselves and reducing the amount of cash that they may misuse for their own consumption.

[17] Residual loss implies that managers with large balances of excess cash, so called *free cash flows*, may not use this cash in profitable ways that shareholders desire; for instance, investing in negative NPV projects or unwise acquisitions. However, dividends reduce the amount of excess cash that managers can overinvest or misuse.

Easterbrook (1984) hypothesised that dividend payments are used to take away the free cash from the managers' control and pay it to shareholders. Paying larger dividends decreases the internal cash flow subject to management discretion and forces the company to approach the capital market in order to meet the funding needs for new projects. Increase of costly outside capital subjects to the company to the scrutiny of the capital market for new funds and decreases the chance of suboptimal investment. The efficient monitoring of capital markets also assists to ensure that managers perform in the best interests of shareholders (Easterbrook, 1984). Thereby, dividend payments might serve as a means of monitoring and bonding management performance.

According to Jensen (1986), dividends are used by shareholders as a device to reduce overinvestment by managers. The managers control the company; hence, they might use free cash to invest in projects with negative NPVs, but which increase the personal utility of the managers in some way. A dividend payment reduces this free cash flow and the scope of overinvestment. Consequently, agency cost theory implies that firms with high cash flows should have high payouts, because a generous dividend payment enhances the firm's value by reducing the amount of free cash flows, at the discretion of management, and thus controls the agency cost problems (Jensen and Meckling, 1976; Rozeff, 1982; Easterbrook, 1984; Jensen, 1986).

2.2.4   Transaction Cost Theory

The financial burden of transaction costs due to dividend payments may affect investors while they collect or reinvest these payments. More precisely, some investors (such as retirees or income-oriented investors), who rely on dividend income for their consumption needs, might prefer high and steady dividend-paying shares; because selling part of their holdings could involve significant transaction costs to such investors. In contrast, others (such as wealthy investors), who do not need dividend income to fulfil their liquidity needs, may prefer none or low payouts to prevent the transaction costs associated with reinvesting these unwanted dividends to purchase additional shares (Bishop et al., 2000).[18] Since transaction costs have to be incurred for both groups of investors while transferring one financial asset to another, firms should adjust their dividend policy according to shareholders satisfaction to avoid entailing transaction costs (Scholz, 1992).

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[18] Miller and Modigliani's (1961) argument of *homemade dividends* is not costless once the assumptions of PCM are relaxed. Therefore, dividend policy may be relevant in the presence of such costs.

Another argument of transaction costs affect on dividend policy is related to firms' investment decisions, which has been emphasised and tested, more importantly, in literature, arguing that the transaction cost is the cost that is associated with external financing. Since external financing might be costly, firms may face heavy burden of transaction costs. After paying dividends, firms may have to raise external finance to meet their investment requirements. This may result in additional costs to firms who prefer to use cheap and easy accessible internal financing to pay dividends instead of spending on investment projects. For instance, management of a firm may ignore positive NPV investments because cash dividend distributions consume internal funds and increasing external funds incur transaction costs. In this context, transaction cost appeared as the cost of dividends in Bhattacharya's (1979) model and Rozeff's (1982) trade-off model. Also, Miller and Rock (1985) defined the cost of dividends as the cutback or disregard of the profitable investment opportunities in their model. Therefore, the *transaction cost theory* of dividends holds the hypothesis of a given level of investment, and points out the costs of raising external financing due to paying dividends. These transaction costs might as well contain the costs of raising additional external funds, such as underwriter fees, administration costs, management time and legal expenses.

Based on the transaction cost argument, Rozeff (1982) argues that firms with higher levels of leverage, which have greater dependency on external financing, should adopt lower payout policies since higher dividend payments raise the transaction cost of external financing. Rozeff (1982) suggests that growth opportunities and firms' volatility are other factors that can increase the dependency on costly external sources. Growth opportunities imply that firms are faced with good investment projects and require funds, whereas firms' volatility means the dependency on external financing is too risky as there is less certainty in terms of estimated earnings to be gained. Overall, highly leveraged, risky or growing firms should be paying none or low levels of dividends in order to prevent the transaction costs of dividends.

2.2.5 Tax Related Theories

One of the earliest arguments around paying dividends is that uneven tax treatment of dividends and capital gains may affect the dividend policy decisions of firms who desire to maximise their market value, hence influencing the delivery of cash dividends. Accordingly, financial economists hypothesised that taxes might have crucial effects on

both investors and corporations regarding dividends. The *tax preference theory*, developed by Brennan (1970), Elton and Gruber (1970) and 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. The reason is that if income tax is greater than the rate of capital gains tax, high dividend payments would increase shareholders' tax burden. Therefore, other things being equal, firms should avoid or make minimal dividend payments if they want to maximise their share prices.

However, the *tax clientele effect hypothesis*, proposed by Miller and Modigliani (1961), Black and Scholes (1974) and Miller and Scholes (1978), argues that each investor has their own implied calculations of choosing between high or low cash dividends and selecting dividend policies according to their tax category circumstances. The logic is that there are clienteles for both high and low dividend yields depending on tax positions. Some institutional investors who are often tax-exempt and individuals at low tax brackets may prefer high cash dividends, whereas others at high tax brackets prefer companies with low cash dividends. In other words, since there are enough companies to provide these different dividend policies, investors will invest in only companies with policies that best fit their tax position. In equilibrium, therefore, no firm can increase its value by reducing taxes through its dividend policy; in fact, this may cause a change in clientele and could be costly because of trading costs. As a result, the tax clientele effect hypothesis supports M&M's (1961) dividend irrelevancy conclusion.

Literature examining the impact of taxation on dividends is extensive but can be divided into two major categories. First, under the assumption that dividends and capital gains are taxed differently, Brennan (1970) developed a model - a version of the Capital Asset Pricing Model (CAPM) - of stock valuation in which stocks with high payouts have higher required before-tax returns than stocks with low payouts. He found that investors require higher pre-tax risk adjusted returns on stocks with higher dividend yields in order to compensate the tax disadvantages of these returns. Empirical tests of the Brennan model have been carried out by Black and Scholes (1974), Litzenberger and Ramaswamy (1979; 1982), Miller and Scholes (1982), Blume (1980), Poterba and Summers (1984) and Keim (1985) amongst others. Second, another way of testing the tax preference hypothesis is to investigate the ex-dividend date price drop. Elton and Gruber (1970) argued that taxing dividends more heavily than capital gains affect the behaviour of prices on the ex-day. Favourable capital gains tax treatment should lead to

a price drop that is less than the dividend payment. Investors, therefore, prefer shares that do not pay dividends. This way of testing tax hypothesis was carried out, through empirical studies, by Kalay (1982a), Michaely (1991), Koski and Scruggs (1998), Kaplanis (1986), Lasfer (1995) and Bell and Jenkinson (2002) amongst others.

Kalay (1982a), nevertheless, argued that the ex-dividend share price drop less than the dividend per share would provide profit opportunities for the short-term traders. This argument is referred to as the *short-term trading hypothesis*, according to which, in the presence of dividends and capital gains tax differentiation, arbitrage opportunities for the *short-term traders* exist. Short-term traders are investors who are not subject to the differential taxation of dividends and capital gains such as tax-exempt institutional investors or security dealers, and will capture dividends and eliminate any excess returns by trading on the ex-dividend dates. In this case, ex-day returns reflect the transaction costs of short-term traders practicing a dividend-capturing activity. Consequently, in the presence of the arbitragers, the tax effect on dividends cannot be inferred by observing ex-dividend day price drops, which may just represent transaction costs. Michaely (1991) and Koski and Scruggs (1998) showed strong support for the short-term trading hypothesis in the US.

2.2.6   The Bird-in-the-Hand Hypothesis

A frequently heard argument in favour of dividends is that more certainty is attached to dividend payments received today, against dividend retention for reinvestment in projects whose future earnings are not certain. Indeed, it was a popular belief in the 1950s that shareholders prefer dividend payments to capital gains and firms with higher dividend payout ratios would be valued more highly (Gordon and Shapiro, 1956). This explanation has been labelled as the risk reduction or more commonly the *bird-in-the-hand hypothesis*.[19]

The logic of this hypothesis implies that there is a relationship between firm value and dividend payments, claiming that dividends can increase firm value because dividends are less risky than capital gains. Firms bring forward cash inflows to shareholders and reduce the uncertainty associated with future cash flows by paying dividends. The share of a dividend paying firm, therefore, is safer than a share of non-dividend paying firm. Out of two identical firms, where one pays dividends whilst the other does not, the dividend paying firm will have a higher share price. Thus, firms should set higher

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[19] As one of the old saying with regard to risk control goes "A bird in the hand is worth two in the bush."

dividend payout ratios and offer higher dividend yields in order to maximise their share prices (Gordon, 1959; 1963).

This hypothesis was derived from the discounted dividend approach, which suggests that the value of a share is based on the net present value of the future dividends, and the required rate of return on the share. Let us assume, P_0 is the current share price, D_t is the dividend paid at period t, r_t is the required rate of return at period t and P_t is the share price at period t. Then, the current value of the share price at time zero (today) is simply the present value of all future dividends discounted at an appropriate discounted rate, as illustrated below:

$$P_0 = \frac{D_1}{(1 + r_1)^1} + \frac{D_2}{(1 + r_2)^2} + \frac{D_3}{(1 + r_3)^3} + \ldots\ldots + \frac{D_t}{(1 + r_t)^t} + \frac{P_t}{(1 + r_t)^t} \qquad (2.8)$$

When t goes to infinite ($t = 1, 2, 3, \ldots \infty$), Equation 2.8 can be expressed as follows:

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1 + r_t)^t} \qquad (2.9)$$

Consequently, Equation 2.9 shows that future discounted dividends are the underlying determinant of the value of the current share price. Therefore, other things being equal, higher dividends increase the value of the firm.

In favour of the bird-in-the-hand hypothesis, Graham and Dodd (1951) argued that investors buy shares to receive dividends and suggested that a dollar of dividends tend to have, on average, four times greater impact on share prices than a dollar of retained earnings. Although some studies (Gordon and Shapiro, 1956; Gordon, 1959; 1963; Walter, 1963) provided support, empirical evidence for the bird-in-the-hand hypothesis is very limited and many others have challenged the argument. In particular, Miller and Modigliani (1961) argued that the riskiness of a firm's operating cash flows determine the firm's risk. In other words, the risk of the firm is determined by its investment decisions and not by how it is financed; whether the firm retains earnings to finance this investment projects or whether it distributes this earnings in dividends and raises the necessary investment funds in the capital market, the value of the firm remains the same since in both cases the uncertainty regarding the future is unaffected. Therefore, increasing the dividend today will not raise the firm's value by decreasing the riskiness of the future cash flows.

Accordingly, Miller and Modigliani (1961) strongly disagreed and called this theory the "bird-in-the-hand fallacy". Moreover, Bhattacharya (1979) also claimed that the logic of the bird-in-the-hand hypothesis is "fallacious". He suggested that the riskiness of a firm's cash flow influences the level of its dividends, but any increase in dividend payments will not reduce the firm's risk. Indeed, risky firms facing greater uncertainty of future cash flows are more likely to have lower payout policies. Consistent with this notion, researchers, such as Rozeff (1982), Lloyd *et al.* (1985), Schooley and Barney (1994) and Moh'd *et al.* (1995) found a negative relationship between dividends and firm risk, indicating that as the risk of a firm's operations increases, the dividend payout ratio decreases, which is totally inconsistent with the bird-in-the-hand hypothesis.

2.2.7   Pecking Order Theory

Pecking order theory of capital structure proposed by Myers (1984) and Myers and Majluf (1984) is an alternative possible argument for explaining firms' dividend policy behaviour. The claim is that firms seeking to finance new investments prefer to use funds according to a hierarchy; first internal funds, then debt issuance and finally equity issuance. This "pecking order" suggests that firms favour to finance their activities with internally generated earnings to prevent the underinvestment problems[20] that involve risky leverage and informational asymmetries between managers and investors. If firms do not have enough internal finance to fund their operations, then they should issue debt to cover their financial deficit. However, only in extreme cases, they should raise external equity capital.

According to this hypothesis (Myers and Majluf, 1984), better firms should have lower leverage and lower short-term payout controlling investment opportunities. Also, firms with high growth opportunities tend to have high leverage (given that investment requires more than the internally generated funds) and these firms should pay out low dividends. Subsequently, pecking order theory predicts a negative relationship between dividend payments and investment opportunities. Thus, in order to prevent external financing and make more use of internal funds for investments, one obvious way to

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[20] Raising new equity to fund a positive NPV investment opportunity may be costly if the shares are under-valued. In these cases, managers tend to reduce possible profitable investments in order to avoid a wealth transfer from existing shareholders to new shareholders. Then, this occurs as a type of *underinvestment problem*. Likewise, since external finance may be associated with significant costs such as administrative and under writing costs, and in some cases under-pricing the new securities, managers even may choose to pass up a positive NPV investment. However, these underinvestment problems are avoided if firms can retain enough internally-generated earnings to cover their positive NPV investment opportunities (Myers, 1984).

accomplish this is by reducing the amounts of dividends distributed to firms' shareholders. The prediction of a negative relationship between investment and cash dividends is not unique to the pecking order theory, as the transaction cost theory makes a similar prediction. However, it is in contrast with the agency cost theory of free cash flow hypothesis, which suggests paying higher dividends to lessen the amount of internally generated free cash flow that managers may misuse by undertaking negative NPV investments.

2.2.8 Residual Dividend Theory

Residual dividend theory suggests that a firm should pay dividends simply when its internally generated earnings are not fully exhausted for investment projects. According to this theory, dividend payments should ideally be the residual of the cash produced by the firms' operations, only after all positive NPV investments have been undertaken (Saxena, 1999). Following a residual dividend policy, the amount of residual dividend tends to be highly volatile and often zero. This is because, internally generated cash flows have inherent variability and desirable investment opportunities with positive NPV unpredictable over time (Lease *et al.*, 2000). Thus, such a policy would make predicting future dividend payments complicated and would be appropriate only if shareholders do not mind the fluctuating dividends (Baker and Smith, 2006). Further, Lease *et al.* (2000) state that firms should pay out at least the residual dividend. It is because, if the residual dividend is not paid after all possible positive NPV projects taken, the firm may invest this cash in negative NPV projects. Hence, at this point, residual dividend theory has some similarities with Jensen's (1986) agency cost of free cash flow argument.

2.2.9 Catering Theory of Dividends

Baker and Wurgler (2004a; 2004b) proposed a relatively new explanation, which is called the *catering theory of dividends*. Dividend policy literature has responded to Miller and Modigliani's irrelevance theory by relaxing the assumptions of perfect capital markets and focusing on the market imperfections. Baker and Wurgler (2004a; 2004b) indicated that the only assumption that has not been relaxed is market efficiency

and they proposed a view of dividends, which is based on relaxing market efficiency assumption of the dividend irrelevance proof.[21]

According to the catering theory of dividends, investors' preferences for dividends may change over time and the decision by firms to pay dividends is driven by investors' preferences for dividends. Therefore, managers cater to investors by distributing dividends when investors put a premium on such stocks. Correspondingly, managers will omit dividends when investors highly rate firms that do not pay dividends. Furthermore, the theory posits that dividends are highly relevant to share value but in different directions at different times. Consequently, managers recognize and cater to shifts in investors demand for dividend preferences (Baker and Wurgler, 2004a; 2004b). Ferris *et al.* (2006) provided support for the catering theory of dividends and concluded that investor demands ultimately drives corporate dividend decisions in the UK.

2.2.10 Maturity Hypothesis

Grullon *et al.* (2002) attempted to link firm age with dividend policy. Specifically, they proposed an alternative explanation to Jensen's (1986) free cash flow hypothesis, known as the *maturity hypothesis,* which suggests that higher dividend increases are a sign of change in a firm's life cycle, particularly as firm's transition from growth phase to a more mature phase.

According to this explanation, in a growth stage, a firm typically has many positive NPV projects and probably earns large economic profits with high level of capital expenditure. Such firms are likely to be left with low free cash flows and experience rapid growth in their earnings. As the firm continues to grow, competitors enter the industry and cannibalize the firm's market share, and eventually reduce the firm's economic profits. In this transition phase, the firm's investment opportunity begins shrinking, its growth becomes slow, capital expenditures decline, and the firm starts generating larger amounts of free cash flows. Ultimately, the firm enters into maturity phase in which the return on investments is close to the cost of capital and free cash flows are high. Consequently, these mature firms are now able to pay higher dividends. Since a firm gets older in terms of age, its investment opportunities decline, which leads to slower growth rates and therefore reducing the fund's requirements of capital

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[21] The assumption has three basic components. First, some investors have an uninformed and perhaps time-varying demand for dividend-paying shares due to either psychological or institutional reasons. Second, arbitrage fails to stop this demand from separating the prices of dividend-payers and non-payers. Third, managers logically cater to investors demand (Baker and Wurgler, 2004a; 2004b).

expenditure. On the other hand, mature firms tend to have steady earnings with high excess to external capital markets and they can be able to preserve a good level of funds, which allows them to pay higher dividends (Grullon *et al.*, 2002).

2.2.11 Conclusions of Main Dividend Policy Theories

This section discusses the major dividend policy theories. After having started from M&M (1961)'s dividend irrelevance theory, which posits that no dividend policy is superior to another under the circumstances of perfect capital market assumptions, one can say that these leading theories are involved with the relaxation of M&M's assumptions and dealt with dividends in the presence of the various market imperfections. It is, however, observed that the main dividend theories provide inconclusive or even contradictory explanations with respect to dividends. For instance, some (the bird-in-the-hand hypothesis, agency cost theory and signalling hypothesis) argue that dividends can increase firm value and shareholders wealth, whereas others (the tax preference theory and transaction cost theory) suggest that dividend payments can have negative consequences for shareholders wealth. In addition, there are several other theories (the pecking order theory, residual dividend theory, catering theory and maturity hypothesis) that add more complexity to the dividend debate.

Accordingly, it can be concluded that none of these theories explain the dividend puzzle single-handedly, consistent with Frankfurter and Wood's (2003, p.167) statement, *"No theory based on the economic paradigm developed thus far completely explains the persistence of corporate dividend policy."* The major reason for this failure may be that financial economists have been trying hard to develop a universal or "one-size-fits-all" approach, despite the well-known reality that dividend policy may be sensitive to such aspects as firms' characteristics, corporate governance and legal environment (Baker *et al.*, 2008). Since there is no single theory to explain the dividend puzzle alone, researchers may have attempted to seek an integrated model that combines various theories in examining dividend behaviour for the best explanation of corporate dividend policy. At this point, it is worth reviewing how these main dividend theories are empirically tested, and what implications there are by applying them on different markets, during different period of times, using different methodologies by many researchers. Therefore, a summary of empirical studies from both developed and developing markets will be presented in the following sections.

2.3 Empirical Studies in Developed Markets

After reviewing main theoretical arguments around dividend policy, this section of the chapter will present a summary of the extent empirical studies in developed markets, where all these theories, models and frameworks are originally hypothesised, developed and tested.

Miller and Modigliani's (1961) dividend irrelevance theory is logical and consistent within a perfect capital market but various market imperfections are being observed in the real world markets, such as differential taxes, information asymmetries, transactions costs and conflicts of interest between managers and shareholders. In this respect, the irrelevance theory becomes highly debatable and these market imperfections might indeed mean that dividend policies do matter. The main empirical research of the dividend puzzle generally focuses on three big imperfections, namely the tax hypothesis, signalling hypothesis and agency cost theory. Accordingly, the following summary of main empirical studies in developed economies is organised around these three theories.

2.3.1 Empirical Studies of Signalling Theory in Developed Markets

The following selective review of empirical research on the signalling explanation of dividend policy in developed markets is divided into two sub-sections; (i) studies of the partial adjustment model and (ii) studies of the information content of dividends hypothesis.

2.3.1.1 Studies of the Partial Adjustment Model in Developed Markets

Lintner (1956) conducted a classic study on how US managers make their dividend policy decisions. First, he obtained intensive interviews with managers, usually presidents, financial vice-presidents or directors, responsible for the dividend decisions of 28 different well-established US industrial firms. After analysing the information collected from the survey, Lintner (1956) found that managers believe the shareholders deserve a *fair share* of the firm's earnings through dividends, and they assume that shareholders prefer a steady increase of dividends. Hence, managers tend to avoid making changes in their dividend rates that may have to be reversed in the future. Consequently, they tend to make *partial adjustments* toward a *target payout ratio* to *smooth* dividend payment streams in the short run to avoid spectacular and frequent

changes. Lintner (1956) also pointed out that managers are also reluctant to cut dividends unless adverse circumstances are likely to persist.

Based on the findings from his extensive field research, Lintner (1956) developed a partial adjustment model to show the verbal description of the dividend process he had captured. He suggests that each firm has a target dividend level in any given year, which is a function of earnings in that year and its target payout rate, as illustrated below:

$$D_{it}^* = r_i E_{it} \qquad\qquad (2.10)$$

Where D_{it}^* is the target dividend payment for firm i in year t, r_i is the target payout ratio for firm i and E_{it} is the net earnings in year t for firm i. Lintner (1956) further argues that the firm will only adjust dividends partially toward the target dividend level in any given year. Hence, the actual difference in dividend payments from year $t-1$ to year t can be given by:

$$D_{it} - D_{i(t-1)} = \alpha_i + c_i(D_{it}^* - D_{i(t-1)}) + u_{it} \qquad\qquad (2.11)$$

Where α_i is the intercept term, c_i is the speed of adjustment coefficient for firm i, u_{it} is the error term, D_{it} is the actual dividend payment for firm i in year t, and $D_{i(t-1)}$ is the previous year's $(t-1)$ dividend payment for firm i. By substituting $r_i E_{it}$ for the target dividend payment (D_{it}^*) in the model and rearranging Equation 2.11, the following empirically testable equation can be equivalently obtained:

$$D_{it} = \alpha_i + \beta_1 E_{it} + \beta_2 D_{i(t-1)} + u_{it} \qquad\qquad (2.12)$$

Where $\beta_1 = c_i r_i$ and $\beta_2 = (1-c_i)$. According to Lintner (1956), the constant term (α_i) is expected to have a positive sign to reflect management's reluctance to reduce dividends, and the speed of adjustment coefficient (c_i) shows the stability in dividend payment changes and calculates the speed of adjustment toward the target payout ratio (r_i) in response to earnings changes. Hence, the value c_i reflects the dividend smoothing behaviour of the firm i to changes in the level of earnings; a higher value of c_i implies less dividend smoothing, in other words unstable dividend policy, and vice-versa. Consequently, firms set their dividend in line with their current earnings and their previous year dividends. They make partial adjustments to a target payout ratio and do not correspond immediately with the changes in earnings.

Lintner (1956) tested his regression model with 196 firm-year observations (28 firms, seven years, between 1947 and 1953) and found that 85% of the variations in current year's dividend payments were explained by this model. Moreover, Lintner tested his equation for time periods outside of the period he used to build his model, specifically the period of 1918-1941, and reported excellent correlations, random residuals and highly significant regression coefficients over longer periods of time. Lintner's regression results clearly indicated that managers attempt to do what they described verbally; the intercept term (α_i) was significant and positive, which he interpreted as the indication that managers consciously avoid dividend cuts even when earnings decrease. Also, both statistically significant and positively related current earnings (E_{it}) and past dividends ($D_{i(t-1)}$) coefficients showed steady dividends with sustainable increases.

Darling (1957) pointed out that Lintner's model could not cover all the aspects that may affect dividend decisions and certain considerations; particularly, liquidity and expectations are not properly taken into account. Darling (1957) suggested that management's goal of maintaining financial manoeuvrability associates with constructing an adequate level of future liquid balances; hence, making dividend decisions within the capital budgeting process. The relationship between earnings, investments and external funds implies a proportional relationship of capital budgeting. Accordingly, he hypothesised that current earnings and lagged dividends, as well as current investments and current use of external funds affect dividends. Therefore, Darling (1957) first ran a number of multiple-regression tests on an annual dataset of all manufacturing US firms for the period 1921-1954,[22] by using a modified version of Lintner's partial adjustment model. The results were consistent with Lintner's (1956) model and further showed that dividends are not only influenced by current flows but also by anticipations of future flows. Moreover, Darling (1957) modified the equation model by substituting lagged dividends for lagged profits and discovered that this model worked better. Second, Darling (1957) constructed another sample of quarterly data on common-stock dividends that was collected for a twenty-six-year period of 125 large industrial firms from first quarter 1930 to second quarter 1955 by Moody Investors Service. The results indicated that Darling's model also worked for quarterly collected data samples, as all the independent variables were statistically significant. Consequently, Darling (1957) suggested that dividends tend to vary directly with

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[22] The years 1936-1938 were excluded due to the reason that during those years 1936 and 1937, dividends were extremely large comparing to earnings whereas dividends were extremely low in 1938.

current profits, lagged profits, the rate of amortization recoveries, and tend to vary inversely with persistent changes in the level of sales.

Fama and Babiak (1968) extended Lintner's model by using dividend policy of individual firms instead of using aggregate data. Fama and Babiak used a comprehensive sample of 392 major US industrial firms for a 19-year period of 1946-1964. They tested several specifications of Lintner's partial adjustment model on individual firm data in order to analyse dividend behaviour by using OLS time series regressions. Further, Fama and Babiak (1968) used simulations to study statistical properties of the diverse dividend models that cannot be examined analytically, in other words, to generate various artificial samples from the population in order to estimate the coefficients of variables in the model as well as the constant and error terms. Then, comparing these estimated coefficients with the actual coefficients of the model that used to produce the data. The results of Fama and Babiak's (1968) empirical study showed results consistent with Lintner's model on individual firm-level dataset. Moreover, Lintner's (1956) partial adjustment model, that includes two explanatory variables, the current earnings (E_t), the lagged dividends (D_{t-1}) and the constant performed well in comparison to other modified models. Nevertheless, removing the constant and adding the lagged earnings variable (E_{t-1}) led to a slight improvement in the predictive power of the model. Also, net income seemed to be a better proxy for profits than either cash flow or net income and depreciation included as different variables in the model.

Dewenter and Warther (1998) compared dividend policies of US and Japanese firms. They also partitioned the Japanese sample into Keiretsu-member, hybrid and independent firms due to institutional differences in the structure of corporate ownership and the nature of group interactions. The study reported the results from testing Lintner's partial adjustment model on 313 US firms listed on the S&P 500 and 180 Japanese firms listed on the Morgan Stanley Capital International Index, with at least 5 years of non-zero cash dividends and earnings data during the period 1983-1992.[23] The empirical results showed support to the notion of Lintner's speed of adjustment in terms of dividend signalling. Specifically, it was found that the median speed-of-adjustment estimates were 0.055 for the US firms and 0.094 for all Japanese firms, whereas those estimates were 0.117 for Keiretsu firms, 0.082 for hybrid firms and

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[23] Dewenter and Warther (1998) also attempted to restrict the sample to firms with six, eight or ten years of data and the results did not change.

0.021 for independent firms. Accordingly, Dewenter and Warther (1998) first pointed out that US dividends were much smoother than before. Second, the speed-of-adjustment results confirmed that US dividends were smoother than Japanese dividends, and Japanese Keiretsu-member firms tended to adjust dividends more quickly than both US firms and other type of Japanese firms. This suggested that the Japanese business environment is, in general, characterised by less information asymmetry problems; hence, there is less need for the dividend-smoothing mechanism. Finally, the analysis on dividend cuts showed that Japanese firms cut dividends in response to poor performance more quickly than US firms.[24]

McDonald *et al.* (1975) examined the firm's dividend, investment and financing decisions in France. Their sample comprised 75 French firms in nine manufacturing and distribution industries in each of seven years, 1962-1968. McDonald *et al.* (1975) stated that the empirical validity of Lintner's model has been supported by many researchers using time-series data, but they estimated the basic and modified Lintner's model with a cross-section specification, in which current dividend payments were a function of earnings and past dividends, as well as investment and financing. The estimated coefficients from OLS and two-stage least squares (2SLS) indicated that earnings and past dividends were statistically significant at the 1% level in all years, whereas investment and financing variables were insignificant. Therefore, McDonald *et al.* (1975) concluded that dividend payments of French firms are well explained by earnings and past dividends in the dividend model of Lintner.

Chateau (1979) tested the partial adjustment model on a sample of 40 large Canadian manufacturing firms for the period 1947-1970 by using alternative econometric procedures. Chateau (1979) stated that the choice of econometric procedure is the most crucial process in order to provide more robust and consistent results in obtaining a common model. Accordingly, a number of different estimation procedures were employed, including OLS, OLS corrected Hildreth-Lu, instrumental variables, quasi-generalised least squares, augmented least squares and maximum likelihood estimator. Among these different econometric techniques, OLS and augmented least squares

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[24] More precisely, the close ties between managers and shareholders in Japanese firms, as in Keiretsu firms, considerably reduce the information asymmetries and agency conflicts compared with their US counterparts. Also, investors of Japanese firms, especially Keiretsu firms, tend to have longer-term investment horizons and they are more likely to be less interested in short-term dividend signals as the information conveyed will eventually be revealed through other mediums, regardless of dividends policy. Therefore, Dewenter and Warther (1998) hypothesised that Japanese firms, Keiretsu-member firms especially, do not fear or would be less concerned with smoothing their dividend patterns in response to earnings changes than US firms.

seemed to provide more reliable estimations of the partial adjustment model, which showed support to Lintner's explanations of dividend behaviour and revealed that constant term removal or retention did not seem to affect the econometric fit of the predictive power of the Lintner model. The empirical results further indicated that sampled Canadian manufacturing firms tended to distribute 30% of their net disposable cash flow as dividends and within the current year, they allocated only about 10% of their cash flow increase to dividends – a partial adjustment of approximately one third of its expectations. In general, Canadian firms followed stable dividend policies. When the behaviour of Canadian firms compared with the American counterparts, it was observed that Canadian firms were relatively more conservative, especially when it comes to short-term dividend strategies, even though they had higher payout ratios.

Survey researchers have taken another path to study the actual behaviour of corporations in setting dividend policy. Instead of using secondary data to find evidence to support or reject various dividend theories, they have asked managers about their perception of dividend policy, which supplement methods of inferring management motives by providing direct evidence about managerial attitudes (Baker *et al.*, 2002).

Baker *et al.* (1985) surveyed the chief financial officers (CFOs) of 562 NYSE firms from three industry groups (utilities, manufacturing and wholesale/retail) to identify the major factors in determining their dividend policy. Based on 318 usable responses (56.6% response rate), survey results suggested a number of important conclusions. First, the results revealed that the major determinants of dividend policy decisions still appear markedly similar to Lintner's findings, that firms should avoid changing dividends rates that may soon need to be reversed, have a target payout ratio, and periodically adjust the payout towards the target. The general agreement reported from the respondents was that dividend policy affects share value as there is an importance attached to dividend policy in maintaining or increasing share price. The results suggested the significance managers gave to factors influencing dividend policy differs based on industry classification. Particularly, the opinions of respondents from the utilities were significantly different from those of other two industries.

In another study, Baker *et al.* (2002) surveyed CFOs of NASDAQ financial and non-financial firms. They sent a questionnaire to 630 firms and received 188 usable responses, obtaining a response rate of 29.8%. The study results were strongly consistent with Lintner's (1956) findings. The responses from dividend-paying

NASDAQ firms significantly agreed with the statements supporting Lintner's explanation and stressed the dividend continuity. This meant that firms still set their dividend policy in a manner consistent with that developed by Lintner more than four decades ago. Further, NASDAQ managers extensively supported statements in line with the concept that dividend policy matters. They agreed that an optimal dividend policy maximizes stock prices; therefore, a firm should formulate its dividend policy to provide maximum value for their shareholders. Finally, the results showed a strong support for the signalling explanation, whereas they offered little or no support for the tax preference, agency cost and the bird-in-the-hand explanations. As well, industry classification (financial versus non-financial) had little effect on how managers view different explanations about dividend policy.

More recently, Brav *et al.* (2005) conducted survey responses from financial executives of 384 US firms with a 16% response rate. They separately obtained 23 in-debt interviews to determine the factors influencing dividend and share repurchase decisions. With respect to dividend policy, their research showed support for Lintner's behaviour model, especially indicating that one of Lintner's key findings still holds; managers are reluctant to cut dividends and the current level of dividend payments is taken as given unless adverse circumstances are likely to persist. However, Brav *et al* (2005) identified two important differences compared with Lintner. First, firms target the dividend payout ratio less than they used to, and they do not correct toward their target ratio as fast as they used to (in other words, more smoothing through time). Second, managers think share repurchases are now an important way of payout and they state that the flexibility of repurchases relative to dividends is one of the main reasons why repurchases have increased. In general, they also reported that the respondents' views provide little support for agency, signalling and clientele hypothesis of dividend policy, and tax considerations play a secondary role.

Overall, the studies reviewed in this sub-section (Darling, 1957; Fama and Babiak, 1968; McDonald *et al.,* 1975; Chateau, 1979; Baker *et al.,* 1985; Dewenter and Warther, 1998; Baker *et al.,* 2002; Brav *et al.,* 2005) are strongly supportive of Lintner's (1956) explanation of dividend behaviour and reported consistency across different study samples and periods of time.

2.3.1.2 Studies of the Information Content of Dividends Hypothesis in Developed Markets

The *information content of dividends hypothesis* asserts that managers have prior inside information about their firms' future performance. Hence, they use cash dividend announcements to convey changes in their expectations about future prospects of the firm to the public. Since dividend decisions are almost exclusively at managers' prudence, and if they are confident about the future performance of the firm, then they distribute larger cash dividends as a good signal to the investors. Conversely, a mirror argument applies to dividend decreases, which are seen as a signal that managers anticipate permanently lower cash flows (Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985).

Aharony and Swary (1980) attempted to ascertain whether quarterly dividend announcements provide information beyond that already provided by quarterly earnings numbers. They only examined quarterly dividend and earnings announcements released to the public on different dates within any given quarter in order to make a distinction between earnings announcements that precede or follow and those that closely synchronized with dividend announcements in any given quarter. A sample of 149 industrial firms was selected from those listed on the NYSE during the period 1963-1976, including 2,612 dividend announcements that follow and 787 that precede quarterly earnings announcements by at least eleven trading days.[25] Then, the sample data were grouped according to the direction of dividends changes from one quarter to another, and by the number of trading days between earnings and dividend announcement dates in any given quarter. The empirical results indicated that shareholders of companies that announced dividend increases realised, on average, positive abnormal returns over the twenty days surrounding announcement days. However, most of the statistically significant abnormal returns occurred during the dividend announcement date and dividend declaration date (two-day excess return). Moreover, they were of similar magnitude for both groups whether earnings announcements precede or follow dividend announcements (0.72% and 1.03%, respectively). A mirror argument applies to dividend decreases with a two-day excess

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[25] The main difficulty lied in the fact that quarterly earnings and dividend figures often were released to the public at approximately the same time. In these cases, any noticeable adjustment of stock prices might be the result of a confounding of the information signalled by earnings and dividends. Thus, in order to separate possible dividend effects from those of earnings, Aharony and Swary (1980) considered only those quarterly dividend and earnings announcements released to the public on different dates within any given quarter.

return of -3.76% and -2.82% respectively; noticeably abnormal returns for the dividend decreases were much greater than those of dividend increases. Aharony and Swary (1980) interpreted their findings as strongly in line with the information content of dividend hypothesis, since changes in quarterly cash dividends provide information beyond that provided by quarterly earning numbers and stock market adjusts efficiently to quarterly dividend information.

Healy and Palepu (1988) examined whether dividend policy changes convey information about future earnings by concentrating on dividend initiations and omissions. They collected a sample of 131 dividend initiations and 172 dividend omissions from NYSE/AMEX firms between 1969 and 1980. First, they examined the market reaction to the announcements of dividend initiations and omissions by estimating abnormal returns[26] for dividend initiation and omission firms. The results exhibited that the mean two-day announcement return was 3.9% for initiation and -9.5% for dividend omissions, suggesting that share price increases upon dividend initiations, and decreases upon dividend omissions. Second, Healy and Palepu (1988) investigated whether there are systematic earnings patterns released by firms; hence, they calculated earnings changes for the five years before, the year of and the four year after the dividend initiation and omissions. The study findings suggested a number of important conclusions. First, there are significant earnings increases for as many as five years prior to dividend initiation announcements, as well as significant earnings decreases for two years prior to dividend omission announcements. Second, dividend-initiating firms have earnings increases for the year of and two years following a dividend initiation and these increases tend to be permanent. While, dividend-omitting firms have earnings decreases for two year prior to and in the year of the dividend omission announcement, then they experience a recovery in earnings in subsequent years. Finally, after controlling for prior earnings changes, and information already provided by earnings changes announcements to the market, the abnormal stock price reactions to the dividend initiations and omissions are related with the firms' earnings changes in the year of and one year following the dividend announcements. Hence, dividend initiations and omissions appear to convey incremental information about firms' future earnings performance.

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[26] Abnormal returns were defined as market-adjusted returns, which was the difference between firms' returns and the returns on the CRSP equal-weighted market portfolio.

Similarly, Michaely *et al.* (1995) investigated both the short-term and long-term effects of dividend initiation and omission announcements. The centre of their empirical research was to discover whether there were following excess returns after the market had an initial chance to react to the announcement of a change in dividend policy. By using the Center for Research in Security Prices (CRSP) tapes, they collected all companies that traded at least two years on the NYSE and AMEX prior to the initiation of first cash dividends, and those that had an identifiable omission announcement during 1964 to 1988. This procedure resulted in a final sample of 561 cash dividend initiation and 887 cash dividend omission events over a 25-year period. In order to investigate the short-run reactions to omissions and initiations, they calculated excess returns for the firms in both samples, for the time period before and for the three-day window (from the day before the event to the day after) around the announcements. The results of t-tests showed that for the initiation sample, excess return in the prior year was 15.1% and during the three-day announcement period, the initiation portfolios experienced a significant additional excess return of 3.4%. Firms omitting dividends performed quite poorly in the year before the omission declaration with -31.8% of the average excess return and the omission sample had a significant additional excess return of -7.0% in the three days surrounding the announcement. In order to investigate the long-term reactions to omissions and initiations, the return performances were computed, for up to three years after the announcements. For initiating firms, the stock prices continued to increase even after the dividend initiation event; the first year excess return was 7.5% and the three-year excess return was 24.8%. For omitting firms, a drift in the opposite direction was observed; the first year excess return was -11.0% and the three year excess return was -15.3%. Consistent with Healy and Palepu (1988), Michaely *et al.* (1995) concluded that omission announcements were associated with a mean price drop of about 7%, whereas initiations were associated with a mean price increase of over 3% in the short-run. Also, long-term drifts, following announcements of initiations and omissions, showed that omissions were associated with negative excess returns, while initiations were associated with positive excess returns. It seemed that these drift patterns were quite consistent through time as the study examined these events over the 25-year period.

More evidence questioning the ability of changes in dividends to signal information about the future pattern of earnings comes from Benartzi *et al.* (1997). If changes in dividends convey information about the future earnings, they predicted that (1) firms

increase (decrease) dividends in a given year (year 0) would have positive (negative) unexpected earnings in the following years (years 1, 2 and so forth), and (2) amongst firms that increase dividends, the larger the dividend increase, the greater the unexpected earnings in the subsequent years, if signalling is costly. In spite of this, Benartzi *et al.* (1997) undertook an attempt to compare the unexpected earnings of firms that changed their dividends with those that did not. Using the CRSP and Compustat tapes, they created a sampled that contained a quite large dataset of 7,816 firm-year observations from 1,025 US firms traded on NYSE/AMEX over the period 1979-1991. Empirical results presented a strong correlation between dividend changes and earnings changes in a given year (year 0). Firms that increase their dividends experience earnings increases, which are significantly higher, than firms that did not change their dividends. Also, larger dividend increases associated with the larger earnings increases in that year. Likewise, firms that decrease their dividends experience significantly more severe decline in earnings in the same year compared with the no-dividend changing firms. Nevertheless, inconsistent with the information content of dividends hypothesis, no correlation is found between the sign and magnitude of dividend increases and earnings changes in the subsequent years (year 1 and 2). Besides, firms that cut dividends in a given year experience significant earnings growth in future years. Therefore, Benartzi *et al.* (1997) reject the hypothesis that changes in dividends have information content about future earnings changes. Instead, they suggest there is a strong past and concurrent link between earnings and dividend changes.

Jensen and Johnson (1995) attempted to specifically concentrate on dividend drop announcements instead of dividend changes. Their research differed from previous studies in three important ways. First, they analysed 21 firm characteristics rather than focusing only on firm earnings and stock prices. Second, in order to assess real motivation for the dividend decrease, they examined firm financial characteristics both before and after the dividend drop announcements. Third, they investigated all firms that reduce their dividends after having established a stable dividend policy. Jensen and Johnson (1995) included firms that paid non-decreasing dividends at least 12 consecutive quarters and then dropped their dividends by 20% or more into their sample. The final sample consisted of 268 observations of 218 decreases and 50 omissions from 242 different NYSE/AMEX firms, during the period of 1974-1989. The study findings showed a drop in earnings before the dividend reduction and earnings increase afterwards. Also, stock prices followed a similar pattern, but the rebound in stock prices subsequent to the dividend decrease was not significant. Furthermore, the

extension of examining 19 other variables in addition to earnings and stock prices, to provide a more absolute picture of firm before and after a dividend drop, revealed that the dividend cuts led to improvement in liquidity positions and to reduction in the level of debt. While earnings and firms financial situation rebounded significantly after a dividend decrease, several financial characteristics that suggest lingering problems were identified. Particularly, after a reduction, dividend-decreasing firms tended to sell more fixed assets, purchase fewer fixed assets, spend less on R&D and reduce employees at a faster pace. Hence, the evidence was consistent with the view that dividend reductions do not necessarily signal a decline in earnings, in other words, inconsistent with the information content of dividends hypothesis. Rather, these dividend cuts tend to signal the beginning of restructuring activities and a turn around in financial decline.

Akhigbe and Madura (1996) investigated the dividend signalling hypothesis, based on the long-term performance of corporations following dividend initiation and omission announcements. They predicted that if the dividend signalling hypothesis holds, then the dividend initiations should be realised by improvements in the long-term performance, while the omissions should be realised by future decreases. Their analysis focused on a sample of US firms that introduced dividends and a separate sample of US firms omitted dividends during the period 1972-1990. Particularly, 128 dividend announcements of dividend initiation and 299 announcements of dividend omissions were studied. They found that firms experience favourable long-term share price performance after dividend initiations. Also, a positive relation between the immediate share price response and the one-year cumulative abnormal returns was found for dividend initiation firms. On the contrary, firms omitting dividends experience unfavourable long-term price performance. Further, the results showed that the long-term valuation effects, resulting from dividend initiations, are more favourable for firms that are smaller and overinvested, and those had relatively poor performance prior to the initiations. The long-term valuation effects resulting from dividend omissions are more unfavourable for larger firms and for relatively large dividend omissions.

DeAngelo et al. (1996) examined whether firms use dividends to signal their views of future earnings prospects by focusing on firms whose annual earnings suddenly declined after nine or more consecutive years of a stable growth in order to separate the implications of the signalling hypothesis from the other factors that may influence firms' dividend policy. Particularly, the sample contained 145 NYSE firms having a decline in annual earnings from 1980 to 1987, after a steady earnings growth over at

least nine or more years. By examining the dividend policy of corporations that anticipate the current decline in earnings, which is yet to be corrected in the near future, having to convey this information to the market would allow evaluating whether that dividend changes are signals of future rather than past changes. However, the empirical results offered no support for the argument that dividend increases in the year of downturn (Year 0) are useful devices of improved future earnings performances. DeAngelo *et al.* (1996) explained their inconsistent findings on dividend signalling in two possible ways. They first suggested that managers may suffer from a behavioural bias, so called over-optimism, which leads them to misjudge future earnings while growth performances decline. Second, it may be the reason that the cash commitments to dividend increases in the sampled firms were relatively small. The median firm's dividend increase in Year 0 was only 3.5% of earnings, 2.1% of operating cash flow and 3.7% cash plus marketable securities. Since the conventional argument is that dividends are credible signals because they require firms to pay in substantial amounts, the small amount of the incremental cash payout suggested that firms can send overly optimistic dividend signals to the market at low cost but neglecting the reliability of such signals.

Lipson *et al.* (1998) studied whether dividend initiations are associated with favourable subsequent earnings surprises. They investigated the performance of newly public firms that initiated dividends and those that did not. The reason of choosing newly public firms was that those firms should employ signalling activities in order to differentiate themselves from other firms that investors might observe as having similar future prospects. Particularly, Lipson *et al.* (1998) compared the performances of 99 newly public US firms that introduced dividends in the period 1980-1986 and a matched sample of non-initiating newly public firms, as well as 99 size-matched US firms that are already paying dividends in the same industry over the same period. After calculating the absolute earnings surprises for the dividend-initiating firms, non-initiating firms and size-matched firms in the first year, the results showed that among them only the initiating firms had favourable earnings surprises, compared to the previous year's earnings. Similar results were obtained in the second year following the dividend initiations. Also, Lipson *et al.* (1998) separately compared the performances of initiation and non-initiating firms and they found consistent evidence that earnings surprises were more favourable for the dividend-initiating firms. Hence, these findings provided support for dividend signalling, suggesting that the initiating firms tend to distinguish their future prospects compared with other newly public firms.

After all, Aharony and Swary (1980), Healy and Palepu (1988), Michaely *et al.* (1995), Akhigbe and Madura (1996) and Lipson *et al.*(1998) have reported evidence consistent with the information hypothesis of dividends that announcements of dividend policy changes do convey information about future prospects of firms. However, Benartzi *et al.* (1997), Jensen and Johnson (1995) and DeAngelo *et al.* (1996) have found that dividend policy change announcements do not necessarily signal about the future earnings changes of firms.

2.3.1.3 Conclusions for Empirical Studies of Signalling Theory in Developed Markets

The empirical studies of the signalling theory of dividends in developed markets that are reviewed in this section are summarised in Table 2.2 and 2.3 in Appendix I.

With regard to Lintner's (1956) partial adjustment model, there is substantial empirical evidence to support the notion that dividends are used to signal important information to the market. Lintner (1956) argued that managers believe the shareholders deserve a fair share of the firm's earnings through dividends and they assume that shareholders prefer a steady increase of dividends. As a result, managers tend to prevent making changes in their dividend rates that may have to be reversed in the future. They, therefore, make partial adjustments toward a target payout ratio to smooth dividend payments stream in the short run and avoid spectacular and frequent changes. Lintner (1956) also found that managers are reluctant to cut dividends unless adverse circumstances are likely to persist. Indeed, many studies are strongly supportive of Lintner's (1956) findings and reported consistency of results across different periods of time, including Darling (1957), Fama and Babiak (1968), McDonald *et al.* (1975), Chateau (1979), Baker *et al.* (1985), Dewenter and Warther (1998), Baker *et al.* (2002) and Brav *et al.* (2005). Moreover, Baker *et al.* (1985, p. 83) stated that, "*……the results show that the major determinants of dividend payments today appear strikingly similar to Lintner's behavioural model developed during the mid-1950's.*" Similarly, Benartzi *et al.* (1997) and Baker and Powell (1999) concluded that Lintner's model of dividends was the best description of the dividend setting process available even after all these years.

The information content hypothesis of dividends suggests that managers have prior inside information about their firm's future performance. They, therefore, use cash dividend announcements to convey changes in their expectations about the firm. However, empirical evidence is inconclusive regarding this hypothesis. Many researchers have investigated whether announcements of dividend policy changes, such

as increases/decreases and initiations/omissions, signal information about future prospects of firms. For instance, Aharony and Swary (1980), Healy and Palepu (1988), Michaely *et al.* (1995), Akhigbe and Madura (1996) and Lipson *et al.* (1998) have reported evidence consistent with the information hypothesis of dividends, that announcements of dividend policy changes do convey information about future prospects of firms, whereas Benartzi *et al.* (1997), Jensen and Johnson (1995) and DeAngelo *et al.* (1996) have provided evidence inconsistent with the information hypothesis of dividends, claiming that dividend policy change announcements do not necessarily signal about the future earnings changes of firms.

2.3.2 Empirical Studies of Agency Cost Theory in Developed Markets

The following selective review of empirical research on the agency cost theory of dividend policy in developed markets is divided into four sub-sections; (i) studies of the cost minimisation model, (ii) studies of the capital market monitoring hypothesis, (iii) studies of the free cash flow hypothesis, and (iv) studies analysing the conflicts of interest between shareholders and debtholders.

2.3.2.1 Studies of the Cost Minimisation Model in Developed Markets

Rozeff (1982) supported the idea of paying dividends in order to reduce agency costs but he also indicated that a more generous dividend policy leads a firm to raise external finance that might be associated with increased transaction costs. In this respect, Rozeff (1982) developed the cost minimisation model, which combines transaction costs and agency costs to an optimal dividend policy that is the outcome of a trade-off between equity agency costs and transaction costs. Optimal dividend payments have the benefit of reducing equity agency costs as well as balancing against an increase in transaction costs. The empirical model developed by Rozeff (1982) and hypothesised signs of the variables can be described as below:

$$PAY = \alpha - \beta_1 INS - \beta_2 GROW1 - \beta_3 GROW2 - \beta_4 BETA + \beta_5 STOCK + \mathcal{E} \qquad (2.13)$$

Where, *PAY* is the average payout ratio over a seven-year period 1974-1980; *INS* is the percentage of stock owned by insiders in 1981; *GROW1* is the realised average growth rate of revenues over a five-year period 1974-1979; *GROW2* is the forecasted growth rate of revenues by the Value Line Investment Survey over the five-year period 1979-1984; *BETA* is the firm's estimated beta coefficient of returns reported by Value Line (1981 issue) and *STOCK* is the natural logarithm of the number of common

shareholders in 1981.[27] In order to test his model, Rozeff (1982) collected a large sample of 1,000 US firms over a seven-year period 1974-1980, including 64 different industries, in 1981. The results of OLS regressions provided consistent evidence with his cost minimisation model, which explained 48% of the cross-sectional variability in payout ratio across individual firms, and reported the estimated coefficients on the five explanatory variables are statistically significant as well as having predicted directional signs by the model.

Lloyd *et al.*'s (1985) research is one of the first studies to replicate and expand the work of Rozeff (1982). More specifically, they pointed out the importance of the effect of *firm size* and argued that larger firms are more likely to have lower percentages of insider ownership and higher numbers of common shareholders. Also, larger firms are more likely to be mature and have easier access to capital markets and hence they are less dependent on internally generated funds. In this context, they expanded Rozeff's (1982) original model by adding the firm size variable, which was measured as the natural logarithm of the firm's sales revenue. Further, Lloyd *et al.* (1985) used the OLS cross-sectional regressions on a dataset that consisted of 957 US firms based on the July to September 1984 edition of Value Line and their results showed that all the explanatory variables were statistically significant and beared the predicted signs. Consequently, the study presented credibility to the work of Rozeff (1982) and found that firm size is also an important explanatory variable that has a positive impact on the payout ratio.

Schooley and Barney (1994) also examined the agency cost theory of dividends by modifying Rozeff's (1982) model. First, they employed "dividend yield" as the dependent variable instead of payout ratio in order to make sure that the denominator of the dependant variable is a market measure (stock price) rather than an accounting measure (net income). Besides, by using the dividend yield, they attempted to avoid

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[27] Rozeff's (1982) model contained two proxies for agency costs, namely *INS* and *STOCK*. First, it is predicted that there should be a negative relationship between the percentage of stock owned by insiders (*INS*) and the payout ratio; if a higher percentage of stocks held by insiders, their ownership will be more concentrated and easily influence managers behaviour, therefore reducing agency costs and leading to a lower or none dividend payments. It is further hypothesised that there should be a positive relationship between the second agency cost variable *(STOCK)*, which is the number of common shareholders, and the dividend payout ratio since more dispersion of ownership among outsiders, the more difficult monitoring becomes, hence leading to higher dividends. Moreover, Rozeff (1982) employed three variables to measure transaction costs, namely *GROW1*, *GROW2* and *BETA*. It is hypothesised that all the transaction costs variables, the past growth, forecasted growth and firm's beta, are negatively related to the payout ratio; if a firm experiences a rapid growth, other things being equal, the firm needs funds for investments, therefore retaining its earnings to avoid costly external financing. Similarly, if a firm has higher beta, which represents the riskiness of the firm, then it would prefer a lower or none payout policy to lower its costs of external financing.

problems associated with negative or astronomic dividend payout ratios when the firm's net income is negative or closes to zero. Second, Schooley and Barney (1994) argued that the relationship between dividend payout ratio and percentage of managerial stock ownership may not be monotonic as suggested by Rozeff. Accordingly, they used the CEO's ownership percentage instead of the insider ownership that was combined ownership percentages of a broad class of insiders and further added the squared percentage of CEO stock ownership as another explanatory variable in the model to investigate the hypothesised parabolic relation between dividend yield and CEO ownership. After running the OLS cross sectional regressions on the study sample of 235 industrial US firms' data centred around 1980, their results showed that the relation between the percentage of CEO stock ownership and the dividend yield is non-monotonic. As predicted, CEO ownership is significant and negatively related to dividend yield, while the squared CEO ownership is significant and positively related, with all other independent variables also significant in the model (past growth, future growth, beta, and ownership dispersion respectively). Additionally, School and Barney (1994) reported that dividend yield falls as CEO stock ownership increases to 14.9% level, and dividend yield increases thereafter.

Moh'd *et al.* (1995) applied a number of changes to both the method and proxy variables used in the original cost minimisation model of Rozeff (1982). First, they aimed to test whether variations in payout ratios across time can be accounted for by changes in the agency/transaction costs structure. Therefore, in order to asses the dynamic relation whereby firms adjust their dividend payments each year in response to information known, variables were not aggregated and prior period's dividend payout ratio was added to the model as an explanatory variable. Also, they modified Rozeff's (1982) measure of the firm's beta coefficient to evaluate the separate effects associated with transaction costs, and therefore the beta variable was substituted for measures of operating leverage, financial leverage and the intrinsic business risk. Further, Moh'd *et al.* (1995) included 26 industry dummies in the regression to control for each industry effect. Finally, they also added firm size, as suggested by Lloyds *et al.* (1985), and the percentage of common stock held by financial institutions as independent variables in the model. Using more specific proxies for the agency cost theory and "time-series cross- sectional" analysis, Moh'd *et al.* (1995) tested their modified model on 341 US firms over 18 years from 1972 to 1989. The empirical results indicated consistency with Rozeff's original findings and, more importantly, showed that firms do appear to

respond to the dynamic changes in the agency/transaction costs structure over the time; specifically, dividend policy is affected by firm size, rate of growth, operating/financial leverage, intrinsic business risk and ownership structure. The results also reported a significant and positive relationship between institutional ownership and payout ratio, as well as a significant and positive coefficient for lagged payout ratio, which causes the past growth variable to become insignificant and indicates that it has little or no role in the dynamic adjustment of dividend payments. Consequently, Moh'd *et al.* (1995) found that firms do perform to minimise the sum of agency cost and transaction cost towards an optimum level of dividend payout; however, this relationship holds not only across firms but within the firms across time as well.

Farinha's (2003) empirical study provided an analysis of the agency explanation for the cross-sectional variation of corporate dividend policy in the UK, by modifying Rozeff's (1982) cost minimisation model. Following School and Barney (1994), Farinha (2003) hypothesised that the relationship between insider ownership and dividend policy might be non-monotonic and employed past growth, future growth opportunities, shareholder dispersion, institutional stock ownership, firm size and industry dummies based on the original and various modified versions of the cost minimisation model. Moreover, Farinha (2003) included a number of different explanatory variables for the analysis in the hope of finding other complimentary instruments for agency/transaction costs and dividend policy argument, such as debt, stock return variance, incorporate tax, free cash flow, return on assets, the percentage of external directors, the log of the number of analysts following a particular firm, and dummy variable of CADBURY, which takes the value of 1 if a firm states it is full compliance with the Cadbury (1992) Code of Best Practice,[28] and zero otherwise. By using OLS cross sectional regressions, Farinha (2003) examined a sample of UK firms (693 in 1991 and 609 in 1996) for two five-year periods 1987-1991 and 1992-1996, in order to test whether insider ownership affects dividends policies in line with a managerial entrenchment perspective. Consistent with predictions, strong evidence found that there is a strong U-shaped relationship between dividend payouts and insider ownership in the UK market. The findings indicated that after a critical entrenchment level estimated in the region of 30%, the coefficient of

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[28] Cadbury (1992) Code of Best Practice was published in 1992. The document reviewed the role of corporate boards in corporate governance and provided a set of recommendations of best practices to improve the accountability and monitoring function of the directors ok UK firms. After publication of the report, the London Stock Exchange asked its listed firms to state their compliance or reasons for not complying, with the Code's recommendations. Hence, the analysis of the relationship between dividend policy and Cadbury (1992) compliance would be a novel way of investigating agency cost for dividend payments given the Cadbury (1992) recognised role in corporate governance in the UK (Farinha, 2003).

insider ownership changes from negative to positive. Compliance with the Cadbury (1992) Code of Best Practices was found to have a significantly positive effect on dividend payments. Also, strong evidence of a significant and positive impact of common shareholders dispersion on dividend payouts was reported, consistent with the existing agency cost literature.

In conclusion, there is strong evidence that Rozeff's (1982) cost minimisation model, which combines transaction costs and agency costs to an optimal dividend policy, is empirically valid. Indeed, the studies reviewed in this sub-section (Llyod *et al.,* 1985; Schooley and Barney, 1994; Moh'd *et al.*, 1995; Farinha, 2003) have found results consistent with Rozeff's original findings and indicated the relationship between dividend policy and agency cost variables.

2.3.2.2 Studies of the Capital Market Monitoring Hypothesis in Developed Markets

The function of dividend policy as a monitoring mechanism of managerial activities is grounded by Easterbrook (1984), who argues that dividends play a role in controlling agency related problems by facilitating primary capital market monitoring on the firm's activities and performance, since dividend payments force firms to raise capital more often in capital markets. However, the dividend-induced monitoring for shareholders may not be costless, such as tax burden or issuance costs. Easterbrook (1984) further suggests *substitution devices* for controlling agency costs when non-dividend monitoring mechanism is placed. For instance, the presence of large blockholders is more likely to make the use of a costly dividend payout mechanism to induce capital market monitoring redundant. Alternatively, firms might be driven to the capital market by other circumstances, such as experiencing high growth, and hence making less use of the dividend device for controlling agency costs due to the need of financing high growth.

Crutchley and Hansen (1989) provided support for the monitoring rationale for dividends as well as the substitution effects between dividends, managerial ownership and leverage. They pointed out that there are several ways to reduce equity agency cost. One way is to increase dividends. Paying larger dividends increases the chance that external equity capital will have to be raised. When new equity is raised, managers are monitored by regulators, investment bankers and providers of new capital. Hence, this monitoring induces managers, who intend to retain their employment to act more in line with stockholders' interests. A second way could be increasing managerial stock

ownership in the firm; thus, better aligning their interests with shareholders' interests. Further, raising more debt financing might be the third way of reducing equity agency costs.[29] Using more debt reduces total equity financing in terms of reducing the scope of the manager-shareholders conflict. Crutchley and Hansen (1989) studied 603 US industrial firms for the period 1981-1985 in order to test the agency costs of monitoring argument with regard to dividends, managerial ownership and leverage. Particularly, they hypothesised that the three policies are jointly determined by the impact of five characteristics, which were firms' stock diversification, earnings volatility, floatation costs, advertising and R&D expenditure, and firm size. Accordingly, each of the three policy decisions was separately regressed on all five firm-specific characteristics. The results of the regression tests showed that managers use a combination of policies, including dividend policy, leverage policy and managerial ownership incentives, in terms of monitoring and controlling the agency costs in the most efficient way.

Born and Rimbey (1993) also tested Easterbrook's (1984) agency cost argument relating to dividends as a monitoring device. They hypothesised that the share prices of firms that announce both capital financing and dividend increases should raise more value than firms that announce dividend increases alone due to monitoring issues. Examining the shareholders response to 490 US firms that initiated or resumed a cash dividend policy, including 388 of which non-financed and 102 of which financed, from 1962 to 1989, Born and Rimbey (1993) reported that the abnormal returns were positively related to the extent of the dividend increases and this result held for the firms that engage in financing, which suggested that the dividend is not redundant information. Unlike its prediction, the average abnormal returns of financing firms did not showed an increase as much as the non-financing firms. However, a cross-sectional analysis of the abnormal returns associated with the dividend announcements revealed that financing firms enjoy a higher return per unit of dividend yield than non-financing firms. This result supported the primary hypothesis of the study and therefore provided evidence in line with Easterbrook's (1984) agency cost model.

Hansen *et al.* (1994) tested the relevance of the monitoring hypothesis for explaining the dividend policies of regulated electric utilities. They argued that agency conflicts

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[29] Crutchley and Hansen (1989) further noted that each of the three agency cost control mechanisms; dividends, leverage and managerial ownership, is not costless. For instance, increasing managerial ownership may result managers' wealth to be poorly diversified and then they would require increasing amounts of compensation. Also, paying larger dividends might associate with substantial transaction costs. Similarly, debt financing may lead to conflicts of interest between shareholders and bondholders. Therefore, managers choose the policy mix of these three mechanisms to minimise agency cost.

might be particularly severe with regulators involved and hence by paying dividends, the regulated firm exposes its managers and regulators to capital markets monitoring. However, managers and shareholders of unregulated firms have access to a number of different internal and external mechanisms to control agency cost. Consequently, this suggest that if an important potential monitoring role of dividends is to be captured, evidence of this is most likely to be found in the case of regulated utilities. Furthermore, it is argued that the costs involved with dividend-induced monitoring are significantly lower for regulated utilities than for industrials. Because the floatation costs associated with issuing new equity can be, at least partially, passed on to ratepayers. Accordingly, Hansen *et al.* (1994) hypothesised that, since dividends are both more useful and less costly for utilities, they should have a higher payout ratio than non-regulated industrial firms. Comparing the mean dividend payout ratios of electric utilities with the S&P 400 industrial firms during two five-year periods, 1981-1985 and 1986-1990, the results showed that regulated utilities pay larger proportions of dividends than non-regulated industrials in terms of being more capital intensive, therefore increasing the likelihood of dividend-induced monitoring as hypothesised. Moreover, Hansen *et al*. (1994) examined implications of cross-sectional regularities relating dividend payout ratio to proxy measures for the severity of the shareholders-manager conflict, the shareholder-regulator conflict and the cost of monitoring these conflicts within the regulated electric utilities. By studying the dividend policies of 81 US utility firms from 1981-1985 and 70 US utility firms from 1986-1990, the cross-sectional regression results illustrated that regulated utilities that experience higher regulatory and managerial conflicts of interest, lower floatation costs and lower growth opportunities tend to pay higher proportion of cash dividends to increase the probability of primary market monitoring. Hence, the evidence of the study was consistent with the monitoring hypothesis that regulated electric utilities use dividend-induced monitoring for controlling agency problems, which occur from the shareholder-regulator and shareholder-manager conflicts.

Noronha *et al.* (1996) investigated the validity of the monitoring rationale for dividends and whether the resultant simultaneity of dividends and capital structure decisions are dependent on the characteristics of the firms, as they relate to the growth opportunities and to the presence of non-dividend mechanisms for controlling agency conflicts. Having considered that dividend-induced monitoring obtains benefits, but also bear costs, they indicated the existence of non-dividend devices. The presence of a large outside shareholder might serve as an external monitor, or growth-induced might force

the firm to raise external capital and trigger capital market monitoring. Accordingly, Noronha *et al.* (1996) hypothesised that for firms with high growth opportunities and/or alternative non-dividend monitoring and/or monitoring from both sources, the empirical validation of the monitoring rationale for dividends are not anticipated. However, for firms with low growth opportunities and/or those characterised by low prevalence of any alternative non-dividend monitoring devices, the monitoring rationale for dividends is expected to be empirically valid. Noronha *et al.* (1996) collected a sample of 341 US industrial firms from S&P 400 over the period 1986-1988. The sample was first stratified according to the prevalence of alternative non-dividend monitoring mechanisms. A firm was considered as having non-dividend monitoring mechanism based on two criteria; the incentive component of managerial compensation and the existence of a large shareholder.[30] Further, the sample was then stratified according to the firm's growth opportunities.[31] This stratification procedure led to two subsamples; 131 US firms with high use of non-dividend monitoring mechanisms and/or with high growth-induced capital market monitoring and 210 US firms with low non-dividend control mechanisms and low growth-induced capital market monitoring. Noronha *et al.* (1996) tested the monitoring rationale for dividends by running regressions on a modification of the cost minimisation model. The results were consistent with monitoring hypothesis and simultaneity between capital structure and dividend decisions is dependent on specific firm characteristics; in particular, the payouts of firms with alternative mechanisms and high growth are not related to proxies for agency cost variables, whereas the dividend decisions of firms with less alternative non-dividend devices and low growth are made in line with Easterbrook's monitoring rationale.

Overall, the studies reviewed in this sub-section (Crutchley and Hansen, 1989; Born and Rimbey, 1992; Hansen *et al.,* 1994; Noronha *et al.,* 1996) showed support to notion that dividend policy may play a role in controlling agency related problems by facilitating primary capital market monitoring on firms' activities and performance, as proposed by

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[30] Firms had an above average incentive component in their managerial compensation packages, which aligns management-shareholder interest, and a single large outside blockholder having at least 5% of the firm's equity, which serves as an external monitor as well as a potential take-over threat, were classified as possessing alternative non-dividend mechanism. Compensation data was obtained from Forbes magazine surveys, and the incentive component was measured as total compensation to the firm's top executives less the salary component, the difference divided by the total compensation.

[31] Firms' growth opportunities are measured by Tobin's Q ratio that was measured as the market to book ratio, which was computed as the sum of the market value of equity and book values of long-term debt and preferred stocks, the total divided by the book value of total assets. Firms with Tobin's Q ratio above the sample average were categorised as high on growth opportunities, otherwise low.

Easterbrook (1984). They also presented evidence that dividends can be used as substitutes with other non-dividend monitoring mechanisms such as managerial ownership, leverage and growth.

2.3.2.3 Studies of the Free Cash Flow Hypothesis in Developed Markets

Jensen's (1986) *free cash flow hypothesis* argues that managers with large amount of excess cash, which he calls free cash flow, may act in ways not in shareholders' best interests. Instead of undertaking positive NPV investment projects by this cash, they might overinvest by accepting marginal investment projects with negative NPVs. However, substantial cash dividend payments would, all else being equal, lessen the amount of free cash flow that managers may misuse and also the scope of overinvestment; hence, increase the market value of the firm. Conversely, a dividend decrease would result in undertaking more negative NPV projects and decreasing the market value of the firm.

Lang and Litzenberger (1989) followed Jensen's (1986) free cash flow argument and called the extended form the *overinvestment hypothesis.* They used Tobin's Q ratio, the *market-to-book ratio* (hereafter Q), to distinguish between value-maximising firms and overinvesting firms, and argued that if Q for a given firm is greater than unity (Q>1), the firm is a value-maximiser since the market value reflects the book value *plus* the positive NPV of the investment, whereas a Q less than one (Q<1) indicates overinvestment. According to Lang and Litzenberger's overinvestment hypothesis, firms with Q less than one (over-investors) experience positive abnormal stock returns, following a substantial increase in dividends; because, the market anticipates this as a reduction in the overinvestment problem (a good indicator). It means that increases in dividends decrease the amount of cash that would have been otherwise invested in suboptimal projects. Contrarily, substantial dividend decreases suggest that the potential for the overinvestment problem may have increased (a bad indicator). However, dividend payout increases or decreases by firms with Q greater than one (value-maximisers) merely reflect optimal investment decisions; therefore, the overinvestment hypothesis further predicts that average price reactions to all substantial dividend changes (either increases or decreases), should be larger for overinvesting firms than for value-maximising ones.

Lang and Litzenberger (1989) tested their argument on a sample of 429 substantial dividend change announcements of US firms for the period 1979-1984. They reported

that the average reaction to substantial dividend changes by firms having a low Q is almost four times larger than the firms having a high Q, which is in line with the overinvestment/free cash flow hypothesis and supports the argument that dividends may constrain management's ability to invest beyond the levels that shareholders desire. Although this evidence is consistent with the overinvestment hypothesis, it is also consistent with the signalling hypothesis. Hence, Lang and Litzenberger (1989) attempted to distinguish between the effects of signalling and the overinvestment hypotheses by re-arranging their sample and examining the average reactions for firms with low and high Q groups based on the dividend increase and decrease announcements. The signalling hypothesis suggests strong reactions to substantial dividend decreases, regardless of Q ratio, as such announcements signal negative information concerning future cash flows, whereas the overinvestment hypothesis argues that the reactions to dividend changes of firms having low Q would be greater. In this respect, Lang and Litzenberger (1989) found that the mean reactions to dividend increases and decreases for low Q groups are both significant; whereas the average reaction to dividend decreases for high Q firms are insignificant. Consequently, these findings are consistent with the overinvestment hypothesis but inconsistent with the signalling hypothesis.

Howe *et al.* (1992) aimed to provide an extension of Lang and Litzenberger's analysis of free cash flow and they investigated whether the free cash flow argument is valid for explaining share repurchases and specially designated dividend (SDD) announcements. Their sample consisted of 55 announcements of tender offer share repurchases and 60 announcements of SDDs of US firms from January 1979 to December 1989. Both the share buybacks and SDD samples are further separated into two sub-samples, according to whether Q ratios for the firms are less or greater than one. The empirical results indicated that market reaction to share repurchases and SDDs were not statistically different from each other at any conventional significance level across samples of high Q ratio (value-maximisers) and of low Q ratio (over-investors). Furthermore, they performed several cross-sectional regressions to test if cash flows have an independent effect on abnormal returns. However, the regression results also showed that the free cash flow hypothesis does not hold in explaining excess returns for share repurchases and SDD announcements, since the coefficient of cash flow is insignificant in all regressions. Therefore, Howe *et al.* (1992) concluded that results are inconsistent with

Lang and Litzenberger's (1989) findings and they rejected the free cash flow hypothesis.

Agrawal and Jayaraman (1994) attempted to use another method to examine whether dividends reduce the opportunity for managers to use free cash flows in a self-serving manner. Additionally, they investigated the interactions of dividend policy, financial leverage and managerial ownership. Since both dividends and debt reduce the amount of excess cash that managers can misuse, Agrawal and Jayaraman (1994) predicted that dividends and debt are substitute mechanisms, and firms with low debt ratios, in other words all-equity firms, tend to follow a policy of high dividend payout. They further argued that managers' equity ownership provides another way of monitoring, in addition to debt and dividends, in order to reduce the agency cost of free cash flow. Agrawal and Jayaraman (1994) used a sample of all-equity and levered firms, which consisted of 71 industry-sized matched pairs of all-equity and levered US firms during 1979-1983. They reported that dividend payout ratios of all-equity firms were significantly higher than levered firms. They also reported that firms with high managerial ownership had lower dividend payouts than the firms with low managerial share holdings. Consequently, their results indicated that dividends, debt and managerial ownership are served as alternative mechanisms to reduce the possible corruption related to the agency cost of free cash flow.

In another study, Johnson (1995) also investigated whether dividends and debt are substitute devices to reduce the agency costs associated with free cash flows. In particular, he examined share price responses to announcements of straight debt issues, by arguing that there are systematic differences between low and high dividend payout firms. Drawing on the arguments that debt and dividends are alternative tools in controlling agency cost of free cash flows, Johnson (1995) hypothesised that debt issues should be more advantageous to firms with low dividend payout. Because, debt and dividends are both inputs to control, the marginal level of one should depend on the input level of the other. Based on this substitution argument, the share price response to bond announcements should be more favourable for firms with lower payout ratios and should be negatively related to dividend payout. Johnson (1995) studied 129 straight debt offerings of AMEX/NYSE industrial firms for the period 1977-1983. The results indicated that low dividend payout firms had an average two-day excess return of 0.78%, which is positive and significantly different from zero at the 10% level, while high payout firms generated an average two-day excess return of -0.18% that is not

significantly different from zero. This is consistent with the view that debt and dividends are substitutes and debt can be used for reducing agency costs of free cash flows.

Overall, studies reviewed in this sub-section generally showed support for Jensen's (1986) free cash flow hypothesis; with the exception of Howe *et al.*'s (1992) study. However, since both agency cost of free cash flow and the signalling hypothesis imply relatively similar effects on share prices, empirical evidence in this area is quite mixed. For instance, Lang and Litzenberger (1989), Agrawal and Jayraman (1994) and Johnson (1995) have reported evidence consistent with the free cash flow argument but they cannot completely rule out the cash flow signalling hypothesis.

2.3.2.4 Shareholders-Bondholders Conflict in Developed Markets

The conflict of interest between shareholders and bondholders is another type of agency costs regarding dividends. It is argued that dividends can be potentially used to expropriate wealth from bondholders to shareholders (Jensen and Meckling, 1976; Alli *et al.*, 1993). As stated by Lease *et al.* (2000, p.76), "*All else being equal, shareholders would like to receive as large as dividends as possible. Large dividends mean that even if the firm eventually defaults, the shareholders will have received some return on their investment prior to the default. In other words, dividends are a means to transfer a firm's assets from the common pool shared by all the security holders of the firm to the exclusive ownership of the shareholders.*" Consequently, bondholders tend to control this problem through restrictions on dividend payments in the bond indenture (Smith and Warner, 1979; Kalay, 1982b).

Woolridge (1983) analysed the effects of unexpected dividend changes on the values of common stock, preferred stock and straight bonds related to the wealth transfer and information content hypotheses, by arguing that if a firm finances an unexpected dividend distribution with additional debt or reducing investment, a wealth transfer between shareholders and bondholders may exist. This action could also be that managers aim to convey about their firms' prospects to the market. Indeed, the wealth transfer and signalling effects of dividend policy are not necessarily mutually exclusive. It is more likely that both effects are reflected in security prices, but one effect dominates the other. Woolridge (1983) predicted the changes in security prices under these two different hypotheses as illustrated in Table 2.1 below.

Table 2.1 Security Responses to Unexpected Dividend Changes

The table illustrates the predicted responses of different securities, namely common stocks, preferred stocks and debt, to both positive and negative unexpected dividends changes under the wealth transfer and signalling effects of dividends hypotheses.

	Positive Unexpected Dividend Change		Negative Unexpected Dividend Change	
	Wealth Transfer	Signalling	Wealth Transfer	Signalling
Common Stocks	+	+	−	−
Preferred Stocks	−	+	+	−
Debt	−	+	+	−

Source: Woolridge (1983, p.1609)

Woolridge's (1983) research sample consisted of 317 positive and 50 negative unexpected dividend changes of NYSE firms over the period 1971-1977. The study findings indicated that common stock price reactions to the 317 unexpected dividend increases were positive and statistically significant, whereas the stock reactions were significantly negative to the 50 unexpected dividend decreases. These findings were consistent with both the wealth transfer and signalling hypotheses, since both of them predict the same share price movements towards unexpected dividend increases and decreases. Woolridge (1983) therefore stated that the straight debt and preferred stocks returns must have been analysed to discover the predominant effect of unexpected dividend changes on security prices. Further analyses revealed that both bond price reactions and preferred stock reactions were positive to the unexpected dividend increases, whereas they showed a negative reaction to the unexpected dividend decreases. Therefore, together with the common and preferred stock results, the nonconvertible bonds findings supported the conclusion that the information content, rather than wealth transfer, is the predominant hypothesis regarding unexpected dividend changes on security values.

Jayaraman and Shastri (1988) examined the valuation impacts of SDDs by analysing stock and bond price reactions to their announcements. It is argued that dividend increases convey good information about the firm's prospects but unexpected or extra dividend payments, such as SDDs, could cause wealth transfer from bondholders to shareholders by reducing the asset base of the firm. Hence, Jayraman and Shastri (1988) suggested that there is a greater likelihood of observing wealth transfer around SDD announcements than regular dividend increases. Further, they hypothesised that the wealth transfer hypothesis would be accepted over the information content hypothesis, if significant negative bond price reactions were observed to SDD announcements.

Jayaraman and Shastri (1988) collected a stock sample that consisted of 2,023 SDD announcements from either NYSE or AMEX by 660 firms over the period 1962-1982. Their bond sample included 154 straight bonds issued by 63 firms in their stock sample. Their results indicated that share price reactions to SDDs are positive and statistically significant. However, since both the information content and the wealth transfer hypotheses predict positive share price reactions to dividend increases, Jayaraman and Shastri (1988) further examined the reactions of the bond prices to SDDs to determine which effect, information or wealth redistribution, dominates. Having analysed the behaviour of bond prices around the 154 SDD announcements, they found that bond prices remain unaffected by announcements of SDDs. Consequently, the results of this study were consistent with the information content hypothesis and provided no support for the wealth transfer hypothesis.

Moreover, Dhillon and Johnson (1994) analysed stock and bond reactions to dividend changes in an effort to examine these two hypotheses. Nonetheless, in contrast to prior studies mentioned above, their findings provided supports for the wealth transfer hypothesis over the information content argument, since they found that the bond price reactions to announcements of large dividend changes are opposite to the stock price reactions. The evidence, however, cannot rule out the information content hypothesis completely. Dhillon and Johnson (1994) studied a full dividend change sample, which consisted of 131 announcements, including 61 dividend increases and 70 dividend decreases from NYSE/AMEX listed firms over the period 1970-1987. The dividend increase sample consisted of two sub-samples: 15 dividend initiations and 46 large dividend increases (exceeding 30 percent). The dividend decrease sample consisted of three sub-samples: 19 dividend omissions, 43 large dividend decreases (exceeding 30 percent) and 8 small dividend decreases. Their results showed that stock returns were statistically positive for the dividend increases announcements, whereas bond returns were negative despite not being quite significant. Moreover, the study results showed that bond returns were significantly positive to dividend decrease announcements, while stock returns were significantly negative. Dhillon and Johnson (1994) concluded that bond prices decline when dividends are increased, whereas bond prices increase when dividends are decreased, in an opposite manner of stock prices. Therefore, their evidence supported the wealth redistribution hypothesis to the associated agency problems.

Long *et al.* (1994) employed another way of examining whether firms attempt to expropriate from bondholders by focusing on the underinvestment problem and the use of dividend policy to expropriate lenders' wealth. They hypothesised that, if debt creates an incentive for shareholders to under-invest and expropriate bondholders' collateral by using dividend policy, then firms should increase dividends after new debt is issued. In this respect, they investigated the dividend behaviour of firms after debt (straight debt and convertible debt) was issued. The final sample of the study consisted of 141 straight debt and 78 convertible debt issues of NYSE firms from 1964 to 1977. Their initial results presented little support for the wealth transfer hypothesis but further analyses were taken to investigate the issue more in depth. Long *et al.* (1994) then compared the dividend growth rates of firms issuing debt with the benchmark NYSE index. However, further analyses showed no systematic differences in dividend growth rates between the two samples or the benchmark NYSE. Firm issuing straight debt showed a higher but insignificant average rate of increase for the following years after issuing. Likewise, firms issuing convertible debt showed a higher growth rate than firms on average, but still there was no statistically significant difference. Consequently, Long *et al.* (1994) suggested no evidence that firms manipulate dividend policy to expropriate wealth from new bondholders to shareholders. Despite dividends do increase following the issue of debt, the increases were in line with the market as a whole in terms of both timing and relative magnitude.

Overall, the studies reviewed in this sub-section showed that there is not enough evidence that dividend payments are used to transfer wealth from bondholders to shareholders. Woolridge (1983), Jayaraman and Shastri (1988) and Long *et al.* (1994) reported no evidence in favour of the wealth transfer hypothesis, whereas Dhillon and Johnson (1994) supported the wealth distribution hypothesis but still cannot rule out the information content hypothesis completely.

2.3.2.5 Conclusions for Empirical Studies of Agency Cost Theory in Developed Markets

The empirical studies of the agency cost theory of dividends in developed markets that are reviewed in this section are summarised in Table 2.4 to 2.7 in Appendix I.

In terms of shareholder-manager conflicts of agency cost theory, the empirical evidence is extensive and strong in suggesting that dividend policy is a mechanism to reduce these kinds of agency problems. First, there is strong evidence that Rozeff's (1982) cost

minimisation model, which combines transaction costs and agency costs to an optimal dividend policy, is empirically valid. A number of studies based on Rozeff's (1982) specification to explain dividend policy, including Llyod *et al.* (1985), Schooley and Barney (1994), Moh'd *et al.* (1995) and Farinha (2003), have found results consistent with Rozeff's original findings and indicated a relationship between dividend policy and agency cost variables.

Furthermore, there is evidence that dividend policy may play a role in controlling agency related problems by facilitating primary capital market monitoring of firms' activities and performance, as proposed by Easterbrook (1984). Also, there is evidence that dividends can be used as substitutes with other non-dividend monitoring mechanisms. A string of studies investigating the monitoring role and substitution effects of dividends, including Crutchley and Hansen (1989), Born and Rimbey (1992), Hansen *et al.* (1994) and Noronha *et al.* (1996), have presented evidence consistent with dividend policy acting as a corporate monitoring vehicle, and with substitution effects between dividends and other alternative control devices, such as managerial ownership, leverage and growth. Moreover, various empirical studies have shown support for Jensen's (1986) free cash flow hypothesis in order to explain dividend policy decisions; however, since both agency cost of free cash flow and signalling hypothesis imply relatively similar effects on share prices, empirical evidence on this area is quite mixed. For instance, Lang and Litzenberger (1989), Agrawal and Jayraman (1994) and Johnson (1995) have reported evidence consistent with the free cash flow argument but they cannot completely rule out the cash flow signalling hypothesis.

Finally, in terms of shareholder-bondholder conflict of agency costs, there is not enough evidence that dividend policy is used to expropriate from bondholders to shareholders. This is not easy to test empirically because the evidence is mixed and there is a possible difficulty in distinguishing between two important hypotheses; the wealth transfer and signalling hypotheses. Researchers have, however, investigated the impact of dividend policy on both the share and bond markets to explain the conflicts of interest between shareholders and debtholders. Woolridge (1983) supported the information content hypothesis and observed no evidence of the wealth transfer hypothesis. Further, Jayaraman and Shastri (1988) and Long *et al.* (1994) found no evidence that firms use dividends to transfer wealth from debtholders to shareholders. In contrast, Dhillon and Johnson's (1994) study showed support for the wealth distribution hypothesis but they still cannot rule out the information content hypothesis completely.

2.3.3 Empirical Studies of Tax Effect in Developed Markets

The following selective review of empirical research on the tax effect of dividend policy in developed markets is divided into two sub-sections; (i) studies of the relationship between dividend yields and risk-adjusted returns and (ii) studies of the ex-dividend day share price behaviour.

2.3.3.1 Studies of the Relationship between Dividend Yields and Risk-Adjusted Returns in Developed Markets

In order to analyse the relationship between tax risk-adjusted returns and dividend yields, Brennan (1970) formulated an after-tax version of the capital asset pricing model (CAPM), which maintains that a security's pre-tax excess return is linearly and positively related to its systematic risk and to its dividend yield. Brennan (1970) argued that if dividends are taxed at higher rates than capital gains, then higher pre-tax returns are associated with higher dividend yield securities, to pay off investors for the tax disadvantages of dividends. The Brennan model can be expressed as:

$$E(R_{it} - r_{ft}) = \alpha_0 + \alpha_1 \beta_{it} + \alpha_2 (d_{it} - r_{ft}) \qquad (2.14)$$

Where, R_{it} is the before tax rate of return on asset i in period t, r_{ft} is the risk-free rate of interest in period t, β_{it} is the systematic risk for asset i in period t, d_{it} is the dividend yield of asset i in period t, α_1 is the weight of systematic risk on R_{it} and α_2 is the weight of dividend payout on R_{it}. Accordingly, the equilibrium equation explains the relationship between pre-tax expected return, its systematic risk, and the estimated dividend yield. Brennan (1970) indicated that the structural parameters, α_1 and α_2 are both not dependant on the level of dividend yield in this pricing relationship. The parameter α_2 is a proxy for the weighted average of the marginal income tax rates of investors and if it is significantly positive, the results are interpreted as evidence of a tax disadvantage over dividends. Hence, when this tax disadvantage exists, investors require higher pre-tax risk-adjusted returns on stocks with higher dividend yields to compensate for the tax disadvantages of these returns, concluded by Brennan (1970).

However, Black and Scholes (1974) argued that investors invest in companies with cash dividend policies suitable for their tax circumstances in line with the *tax clientele hypothesis*; thus, there will be no relation between expected dividend yields and risk-adjusted stock returns. Black and Scholes (1974) constructed a sample of 25 investment

portfolios from common stocks listed on the NYSE over the period 1936-1966, in order to examine the relationship between dividend yields and stock returns, by using a slightly different version of the Brennan model[32] and by testing the effect of a long-run estimate of dividend yield (the ratio of previous year's dividends to the year-end share price) paid on stock prices. Their results showed that the dividend yield coefficient was not significantly different from zero for the entire time period (1936-1966) or for any of the ten-year sub-periods. In other words, the expected returns on high-yield dividend stocks were not significantly different than the expected returns on low-yield dividend stocks either before or after taxes, other things being equal. Consequently, Black and Scholes's findings were inconsistent with the tax-preference theory but provided support for the tax clientele hypothesis. Therefore, they advised investors to ignore dividends when shaping their portfolios.

Moreover, Litzenberger and Ramaswamy (1979) strongly challenged the results of Black and Scholes (1974) and criticised their methods. Litzenberger and Ramaswamy's empirical research design differed in several ways; specifically, they extended the Brennan model by using a monthly dividend yield definition in classifying securities into yield classes rather than a long-run dividend yield definition as in Black and Scholes (1974). Also, they used individual data instead of grouped data, and they corrected the error in variable problems in beta estimation by using maximum likelihood estimator. Using ordinary least squares (OLS), generalised least squares (GLS) and maximum likelihood estimator (MLE) on a sample of all common stocks listed on the NYSE from 1936 to 1977, the results showed that the coefficient on the dividend yield variable (0.236) was positive and highly significant. This meant that there was a strong positive correlation between before tax expected returns and dividend yields of common stocks, indicating that for every dollar increase in dividend yields, investors require an extra 23 cents in before-tax expected returns. Litzenberger and Ramaswamy (1979) interpreted their results as support for Brennan's (1970) model, concluding that the positive dividend yield coefficient is the evidence of a dividend tax effect.

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[32] Black and Scholes (1974) employed the specification below:

$$\check{R}_i = \alpha_0 + [\check{R}_m - \alpha_0]\,\beta_i + \alpha_1\,\frac{(d_i - d_m)}{d_m} + \varepsilon_i$$

Where, $\check{R}_i$ is the rate of return on the ith portfolio, α_0 is an intercept term that should be equal to the risk-free rate (R_f) based on the CAPM, $\check{R}_m$ is the rate of return on the market portfolio, β_i is the systematic risk on the ith portfolio, α_1 is the dividend impact coefficient, d_i is the dividend yield on the ith portfolio, d_m is the dividend yield on the market, measured over the previous 12 months, and ε_i is the error term.

Nevertheless, Miller and Scholes (1982) raised objections to Litzenberger and Ramaswamy's (1979) conclusion and criticised their short-term (monthly) definition of dividend yield. They argued that a short-term dividend yield definition was inappropriate for spotting the effect of differential tax treatment of dividends and capital gains of stock returns, and suggested that the significantly positive dividend yield coefficient was not the result of a tax effect but was caused by information bias. Because, Litzenberger and Ramaswamy ignored the potential information effect of dividend omission announcements; a dividend omission announcement the market perceives as a bad news, reduces the return of zero dividend yield group and tends to bias upward the dividend yield coefficient. Accordingly, Miller and Scholes (1982) attempted to correct for the information bias and re-performed Litzenberger and Ramaswamy tests on a sample of NYSE stocks over the period 1940 -1978. Their empirical results reported that the dividend coefficient was not statistically different from zero. Hence, Miller and Scholes (1982) interpreted their results as inconsistent with the tax effect hypothesis and they attributed the Litzenber and Ramaswamy findings to information effect rather than the tax effect.[33]

Blume (1980) re-examined the relationship between dividend policy and total returns on a risk-adjusted basis by extending the Black and Scholes (1974) experiment on a sample that contained all NYSE securities for the period 1936-1976. Although monthly returns were available, Blume (1980) used cross-sectional regressions estimated with quarterly returns, arguing that if there were a measurable tax effect involved with dividend yield, the effect would differ between months and periods in which a stock went ex-dividend and those in which it did not. They stated that, since most dividend-paying stocks paid dividends quarterly, the use of quarterly returns should make the estimated regression less sensitive to any possible differential tax effect. Further, Blume (1980) employed the portfolio method to test for dividend effect in the same manner with the Black and Scholes study. The study results revealed a considerably more complicated relationship between returns realised on common stocks and dividend yields than has been

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[33] In order to answer this criticism, Litzenberger and Ramaswamy (1982) re-examined the expected short-term dividend yield variable by using an alternative measure. They applied an expected dividend yield variable, which was based on only past information about all companies in their previous study's data sample. Particularly, the sample contained only stocks either that declared dividends in moth t-1 and distributed them in month t, or stocks those delivered dividends in month t-1 and thus were not likely to pay dividends again in month t. By employing this procedure, Litzenberger and Ramaswamy (1982) claimed that the prediction rule for the expected dividend yield was solely announcement effect-free since the informantion was available to the investor ex-ante. Moreover, after using information-free sample, their results were consistent with their previous findings and revealed a significant and positive dividend yield coefficient, providing evidence that strongly supports the tax-effect hypothesis.

suggested in prior research. Even though the results showed a positive and significant dividend yield coefficient consistent with the tax effect hypothesis, the significance of the dividend yield variable varied over time. Blume also found that the returns on non-dividend paying stocks tended to exceed, on average, the returns on most dividend paying stocks over 41 years to 1976, which was totally inconsistent with the interpretation of the dividend coefficient as a tax effect. Thus, Blume (1980) concluded that the relation across stocks is far too complicated to be entirely explained by tax effects.

Poterba and Summers (1984) attempted to investigate tax effect in the UK since British data provided great potential to test dividend issues regarding taxes. This was because there had been two radical changes and a number of minor changes in British dividend tax policy during the last 30 years prior to their research. The first important change occurred in 1965, when the government introduced a capital gains tax at a statutory rate of 30%. The second change occurred in 1973, when an integrated corporate income tax, which effectively reduced the dividend tax rate on personal and corporate investors and actually offered a dividend subsidy to untaxed institutions, was introduced. Accordingly, in their tests, prior to 1965 (no capital gains tax) was referred to as Regime I. Between 1965 and 1973, introduction of capital gains tax, was referred to as Regime II, whereas after 1973, introduction of imputation system for dividends, was referred to as Regime III.

By using monthly data on British securities (3,500 UK firms for a 26-year period during 1955-1981) and employing the after-tax CAPM described by Litzenberger and Ramaswamy, Poterba and Summers (1984) ran a number of regression tests to examine the relationship between dividend yield and risk-adjusted return. The results showed that taxes influence the relationship between dividend yields and stock returns; more specifically, the estimated tax penalty on dividends declined from 74% to 45% between Regime II and Regime III, whereas the evidence on changes between Regime I and Regime II were less clear. However, Poterba and Summers (1984) pointed out that the main puzzle in the results was why the estimated tax rates were so high. They further stated that it may be the cause of some sort of miscalculating of risk, or due to information effect. Despite these biases, they concluded that the valuation of dividends changes across tax regimes provided strong evidence that taxes explain part of the positive relationship between yields and stock market returns.

Furthermore, Keim (1985) studied the empirical relation between stock returns and long-run dividend yields by using CAPM, examining whether the findings can really point towards the tax effect or whether they are related to other causes acknowledged in the existing literature. He collected a sample of NYSE stocks that ranged from 429 US firms in January 1931 to 1,289 US firms in December 1978, according to the selection criteria in which he constructed six dividend yield portfolios; the first portfolio included all zero-dividend firms and other five ranked from lowest to highest positive dividend yield firms. The empirical findings revealed a significant non-linear relationship between yields and stock returns, but both the magnitude of the significant returns and non-linearity of the yield-return were concentrated in the month of January. Also, estimates of regression coefficients on dividend yields were significantly larger in January than in any other months and were too large to be suggested as tax brackets associated with after-tax asset pricing models. Hence, Keim (1985, p.487) concluded that "........*the observed relation between long-run dividend yields and stock returns may not be solely attributable to differences in marginal tax rates for dividends and capital gains.*" Although the results of Keim (1985) showed evidence of a yield-tax effect, these results were not entirely consistent with the after-tax CAPM, due to the significant effect of the month of January (in other words the effect of seasonality) on the relation between dividend yields and stock returns.

More recently, Kalay and Michaely (2000) performed the Litzenberger and Ramaswamy (1979) research using weekly data. They constructed a sample that included all NYSE stocks with at least 260 weeks of data available over the period 1962-1986. By using three different methods for their analysis (the OLS, GLS and MLE), Kalay and Michaely (2000) found that the dividend yield coefficient was positive and significantly different from zero, which implied the tax effect rather than the information effect; consistent with Brennan (1970) and Litzenberger and Ramaswamy (1979) but inconsistent with Miller and Scholes (1982). However, Kalay and Michaely (2000) stated that their evidence indicated the empirical regularity was not limited to a particular period or to a particular time during the year but Brennan (1970) and Litzenberger and Ramaswamy (1979) developed a single-period model, which predicts cross-sectional return variations as a function of dividend yield. Contrarily, Kalay and Michaely's empirical evidence reveals that stocks experience only time-series return variations and does not find cross-sectional return variations. Hence, their findings do not support Breannan's and Litzenberger and Ramaswamy's

models; nevertheless, this does not mean that their results do not support the tax hypothesis either. Since Brennan (1970) makes assumptions about the tax structure, such as no tax clienteles, short-term capital gains, foreign investors, transaction costs or tax arbitrage, Kalay and Michaely (2000) concluded that the well-known tax models do not explain their evidence. However, they stated that their empirical findings are in some ways related to a more complex tax effect theory, which is yet to be developed.

2.3.3.2 Studies of the Ex-Dividend Day Share Price Behaviour in Developed Markets

Elton and Gruber (1970) argued that the ex-dividend behaviour of a firm's common shares should be correlated to the tax rates of its marginal shareholders. A shareholder who sells shares before a share goes ex-dividend loses the right to the previously declared dividend. If he sells the share on the ex-dividend day, he maintains the dividend but should expect to sell it at a lower price because of this dividend retention. In a perfect market, the share-price drop on the ex-dividend day should reflect the value of dividend per share vis-à-vis capital gains to the marginal shareholder. While dividends and capital gains are taxable at different rates, the relative tax rate on these two types of income influence the decision. In this context, one can infer marginal shareholder tax brackets from observing the ex-dividend behaviour of common shares. Assuming investors are risk neutral and there are no transaction costs, Elton and Gruber (1970) specified the conditions for "no profit" opportunities around ex-dividend day in the presence of tax differentials and built the equation of the after-tax returns from capital gains to after-tax returns from dividends as below:

$$P_X - t_C\,(P_X - P_Y) = P_Z - t_C\,(P_Z - P_Y) + D(1 - t_D) \qquad (2.15)$$

Where, P_X is the cum-dividend share price (the last day the share is traded with the dividend), P_Y is the price at which the share was initially purchased, P_Z is the ex-dividend day share price (the first day of share is traded without the dividend), D is the amount of the dividend, t_C is the personal tax rate on capital gains, and t_D is the personal tax rate on dividends. The left-hand side of the equation presents the after-tax receipts of seller who would receive if he sold the share cum-dividend and had bought it initially for P_Y. The right-hand side presents the expected net receipts from sale on ex-dividend day. Re-arranging the equation leads to:

$$\frac{(P_X - P_Z)}{D} = \frac{(1 - t_D)}{(1 - t_C)} \qquad (2.16)$$

Where, the statistic $(P_X - P_Z) / D$ corresponds to the ex-dividend behaviour, that would lead a shareholder with a particular tax rates (t_D and t_C) to be indifferent as to timing of purchases and sales of a common share. For the market to be in equilibrium the price movement on the ex-dividend day must be such as to leave marginal buyers and seller of the share indifferent as to whether they buy before or after the share goes ex-dividend. Conversely, if the expected ex-dividend price was either too high or too low, marginal buyers or sellers would change the timing of their purchases or sales until share prices were in equilibrium. Therefore, the statistic $(P_X - P_Z) / D$ must reflect the marginal tax rates of the marginal shareholders and it should be possible to infer these tax rates by observing the statistic $(P_X - P_Z) / D$.

In order to test their hypothesis, Elton and Gruber (1970) examined 4,148 observations from all shares listed on the NYSE that paid a dividend during the period of April 1, 1966 - March 31, 1967, and were traded on both the ex-dividend day and the prior day. They found that the ex-dividend price drop was smaller than the dividend per share. The average price share decline was 77.67% and the marginal tax bracket for the average shareholders was 36.4%. They interpreted these findings as the ex-dividend day behaviour of common share prices, as evidence for differential rates of taxation, leads investors to discount value of taxable cash dividends relative to capital gains. Moreover, Elton and Gruber (1970) carried further tests to see whether the dividend policy of a firm influences the tax rate of its marginal shareholders. In other words, to test the hypothesis that shareholders who hold shares with high dividends should be in low tax brackets, relative to shareholders who hold shares with low dividends. The results showed that implied tax brackets were significantly and negatively related to firm's dividend yield and payout ratio. This was supportive of the tax clientele effect that in an environment of differential taxation of dividends and capital gains, high (low) marginal tax rates investors would hold shares with low (high) dividends. Consequently, Elton and Gruber (1970) concluded that their evidence is consistent with the tax effect hypothesis, that shareholders have a *tax-induced preference* for capital gains, suggesting that investors in higher brackets show a preference for capital gains over dividend income, compared to those in lower tax brackets. Along with this tax effect, Elton and Gruber (1970) also confirmed that their results showed support of Miller and Modigliani' s *tax clientele effect*, arguing that firms seem to attract a *rational clientele* who prefer their dividend policy. Hence, a change in dividend policy could cause a costly change in shareholder wealth, rather than the dividend policy itself.

Kalay (1982a), however, criticised Elton and Gruber's conclusion, arguing that equilibrium prices around the ex-dividend day tend to be determined, not only by the *long-term trading investors*, but also by the *short-term traders*. He developed the *short-term trading hypothesis*, purposing that if the ex-dividend share price drop is less than the dividend per share, it provides arbitrage profits for the short-term traders, who are not subject to the differential taxation of dividends and capital gains. Kalay (1982a) claimed that in a risk-neutral world with no restrictions or imperfections as such transaction costs, dynamic arbitrage could eliminate a possible tax effect on prices. These short-term traders with the same tax rate on dividends and capital gains could buy the share before it goes ex-dividend and sell it just after the dividend payment. To re-examine the ex-dividend day evidence, Kalay (1982a) collected a sample of NYSE firms of 2,540 cash dividends paid between 1 April 1966 and 31 March 1967. He found that lower ex-dividend day price drop than the dividend per share, and higher relative drop for high-yield stocks, suggesting that an ex-dividend day share price drop less than the dividend per share provides profit opportunities for the short-term traders. Kalay (1982a) concluded that as explained before, the marginal tax rates of shareholders cannot be inferred, in general, from the relative price drop. The evidence was not necessarily consistent with the tax effect or the tax clientele effect. However, the evidence was still consistent with the hypothesis that, on average, the investors involved in the trading population, pay higher taxes on dividends rather than on capital gains. This evidence captures the effects of both the short-term traders and the tax rates of the trading population.

Michaely (1991) analysed the behaviour of share prices around ex-dividend days after the implementation of the 1986 Tax Reform Act (TRA)[34] in the US, which significantly reduced the difference between the tax rates of realised long-term capital gains and dividend income in 1987, and utterly eliminated the differential in 1988. Because, using the changes in tax systems offered new evidence about the effect of taxes on ex-dividend share price behaviour. Further, Michaely (1991) stated that according to long-term trading hypothesis, the ex-dividend price drop should reflect the differential taxes between dividend income and capital gain income of the long-term traders. Alternatively, short-term trading hypothesis argues that the market pricing is dominated

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[34] The 1986 TRA dramatically reduced the tax difference between capital gain and dividend income. For the period 1979-1986, 60% of capital gains were excluded from taxes. After 1986 TRA, in 1987, the transition year, the maximum tax rate on capital gains was set to 28%, while the maximum ordinary income tax rate was set to 38.5%. However, since January 1988, the TRA eliminated all distinction between capital gains and ordinary income taxes.

by short-term and corporate traders. Hence, a change in the tax law could be used to test these hypotheses more directly by comparing the premiums before and after the implementation of the 1986 TRA. Michaely (1991) collected closing prices for the 50 days surrounding the ex-day (-25 to +25) for all companies listed on the NYSE, which paid dividends over the period 1986-1989. The sample contained 4,306 observations in 1986; 4,499 observations in 1987; 4,785 observations in 1988 and 4,799 observations in 1989. The empirical findings showed that this tax law change, which reduced the tax difference between capital gains and dividend income, and then entirely eliminated the differential, had no effect on the ex-dividend share price behaviour, which is inconsistent with the tax effect hypothesis, since long-term individual investors have no significant effect on ex-day share prices during this time period. On the other hand, the results supported the argument that the activity of short-term traders and corporate traders dominates the price setting on the ex-day.

Moreover, Koski and Scruggs (1998) investigated whether short-term trading reduces or eliminates the tax effect on ex-dividend day prices, by analysing trading volume around ex-dividend days. Their argument was that, understanding who trades on ex-dividend days is important in determining if ex-days premiums reflect marginal investors' tax rates, trading costs, or both, and to understand the determinants of ex-dividend premiums and trading volume. In this context, short-term traders, who are willing to make use of ex-day returns, would lead to abnormal trading volume. Likewise, even if the existence of tax clientele cannot be inferred from ex-day returns, it can still be inferred from abnormal trading volume around ex-days. If the tax differential between capital gains and dividends affects ex-dividend returns, security dealers, who are tax neutral, would increase their trading volume around ex-days.[35] In order to test their hypothesis, Koski and Scruggs (1998) collected a sample data on trading volume by dealers and corporations for 70 ex-dividend days between November 1990 and January 1991, using audit file data from the NYSE TORQ database. The abnormal trading volume around ex-dividend days were based on an event window of 11 days centred on the ex-dividend date (-5< t <5). The results demonstrated that the means of the standard

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[35] For instance, if low dividend-yield shares are held by dividend adverse investors, then security dealers tend to take long-positions to capture dividends by buying shares cum-dividend and sell them at the ex-dividend price, which drops the share price less than the value of the dividend they captured. Similarly, if high dividend-yield shares are held by dividend favourable investors in where the ex-day share price is expected to drop by more than the nominal amount of the dividend, then dealers tend to take short-positions by selling shares cum-dividend and buying them ex-dividend. Also, US corporations were exempt from taxes by 70% of inter-corporate dividends received during 1990 and 1991, the period examined by this study; therefore, they had strong incentive to involve with short-term trading in order to capture dividend income.

abnormal volumes showed strong evidence that tax neutral security dealers execute in short-position dividend capture strategy to profit around ex-dividend days. Also, the aggregate volume, for both buy and sell, was positively related to dividend yield and negatively related to the transaction costs at conventional significance levels. Accordingly, Koski and Scruggs (1998) suggested that tax-neutral dealers engage in short-term trading for arbitrage profits, which eliminates and is inconsistent with the tax clientele hypothesis around ex-dividend days.

Kaplanis (1986) used a different methodology to examine share price behaviour around ex-dividend days in the UK. He pointed out that one downside of all of the empirical research, testing the presence of tax effect on ex-days, was that they were formulated in terms of the *expected* price drop in where it was only possible to employ the *actual* price drop as a proxy for the expected one. Kaplanis (1986) presented an alternative method of testing the tax effect hypothesis, which was based on the direct estimation of the expected fall-off implied in the prices of options, as opposed to the actual share price fall-off. He argued that if the expected fall-off was significantly different from the dividend, this would imply that the results would be inconsistent with the short-term trading hypothesis. Further, if there was a positive relationship between the dividend yield and the fall-off, the results would be consistent with the tax clientele hypothesis. In order to test his argument, Kaplanis (1986) collected 360 pairs of cum and ex-dividend closing offer prices of options written on 14 different British companies listed on the London Stock Exchange (LSE) from 1979 to 1984, as well as the simultaneous underlying offer prices. The results showed that expected implicit fall-off around ex-dividend days in option prices was about 55% of the dividend and the fall-off had a significant and positive correlation with the dividend yield. The actual price drop was very similar to the implied decline from option prices. Kaplanis (1986) concluded that, since the average expected proportionate fall-off was significantly lower than unity and showed a positive relationship with the dividend yield, the results were consistent with the tax clientele hypothesis and inconsistent with the short-term trading hypothesis. Thus, the usual assumption made in valuing options on dividend paying shares, that the decline is equal to the dividend, is not realistic and would cause downward-biased estimates of the option value.

Furthermore, Lasfer (1995) investigated share prices behaviour around the ex-dividend days before and after the implementation of the 1988 Income and Corporation Taxes Act (ICTA), which decreased the tax differential between dividends and capital gains

considerably in the UK. The analysis focused on the 1988 UK ICTA, an equivalent to the 1986 Tax Reform Act in the US, in a similar approach as Michaely (1991). The abolition in 1988 of all rates of income tax over 40% and the taxation of capital gains at the tax-paying investor's highest income tax rate, provided a distinctive controlled experiment to test the impact of taxation on share prices behaviour on the ex-days. Lasfer (1995) hypothesised that the pre-1988 ex-day returns should be positive and significant in order to reflect the tax differential; however, since the 1988 ICTA eliminated the tax differential on dividend income and capital gains for the investors, ex-day returns should decrease in the post-1988 period and even become negative and insignificant to reflect the tax credit related with the cash dividends. Accordingly, the study sample contained a total of 10,123 observations drawn with 2,891 events in the pre-1988 period and 7,232 events occurred in the post-1988 period, covering the period April 6, 1985 to April 5, 1994. The results showed that, consistent with the tax hypothesis, in the pre-1988 period, ex-dividend day returns were positive and significant. Contrarily, in the post-1988 period, ex-dividend day returns were, in most cases, negative and insignificant. Also, ex-day returns were significantly related to dividend yield and to the length of the settlement period, but they were not influenced by the commonly used measures of transaction costs, such as the bid-ask spread and trading volume. Hence, unlike the US market, ex-day returns in the UK were not affected by short-term trading. It might be that, either the institutional legislation was effective or the UK market was efficient, and ex-day returns and the tax credit were not high enough to outweigh transaction costs. However, Lasfer (1995) concluded that taxation affects significantly ex-dividend day share price behaviour in the UK.

In a similar study, Bell and Jenkinson (2002) examined the impact of major changes in dividend taxation, introduced in July 1997 in the UK. The tax reform was structured in such a way that the immediate impact fell almost entirely on the largest investor class in the UK, specifically pension funds.[36] It was estimated that over one-third of UK equities were held by pension funds in 1997 and the impact of the tax change was to raise the taxation on dividends by £5 billion per annum. Hence, Bell and Jenkinson (2002) used this major tax change to investigate whether pension funds were the marginal investors

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[36] Despite Finance Act 1997 had broad-ranging implications for dividend taxation in the UK, the immediate and largest effect was captured significantly on tax-exempt pension funds since they suffered a decline in the value of their UK dividend income of 20 percent. However, Finance Act 1997 did not alter the dividend burden of individual or corporate investors. It mostly affected some other investors such as charities, investors with tax-exempt savings accounts but in no case the dividend tax increase anywhere near as crucial as that for pension funds.

in the UK, and if it was the case, how taxes affected the valuation of dividends. They analysed the impact of 1997 Tax Reform by estimating the extent of any change in the valuation of dividends prior and after the reform. Their argument was that, the drop in price around the ex-day should reflect the value of dividends, comparing capital gains to the marginal investor clientele. Then, if investors were indifferent in terms of dividends and capital gains, share price should fall one-for-one with the dividend paid on each share. Based on the tax treatments, on the other hand, investors might be different between dividends and capital gains. Therefore, the ratio of the ex-day price decline, to the amount of the dividend, should reflect the relative taxation of dividend and capital gains of the clientele having that particular share. Bell and Jenkinson's (2002) study sample contained 9,673 ex-dividend day observations from 1,478 LSE-listed companies. Before 1997, the study results showed strong clientele effects since drop-off ratios were positively related to dividend yields, which provided support for the hypothesis that effective rates of capital gains tax were significantly lower than statutory rates for many investors, and as well as that, pension funds were the effective marginal investors for high-yielding firms. However, after the Finance Act 1997, significant changes in drop-off ratios were found, especially for high-yielding firms. Particularly, the drop-off ratios reduced on average by 13% to 18% depending on the company size. This showed further evidence for pension funds and other tax-exempt investors being the marginal investors for high-yielding firms whose valuation of dividend income was reduced by 20 percent after 1997. Consequently, the study results provided strong evidence to support the tax clientele hypothesis and were consistent with the tax effect hypothesis, that taxation significantly affects the valuation of dividend income.

2.3.3.3 Conclusions for Empirical Studies of Tax Effect in Developed Markets

The empirical studies of tax effect of dividends in developed markets that are reviewed in this section are summarised in Table 2.8 and 2.9 in Appendix I.

In terms of the relationship between dividend yields and returns, empirical evidence is inconclusive. Under the assumption that dividends and capital gains are taxed differently, Brennan (1970) developed a model of stock valuation in which stocks with high payouts have higher required before-tax returns than stocks with low payouts. Indeed, he discovered that investors require higher pre-tax risk adjusted returns on stocks with higher dividend yields in order to compensate the tax disadvantages of these returns. In contrast, using his model, Black and Scholes (1974) and Miller and Scholes

(1982) find no evidence of such a tax effect, whereas Litzenberger and Ramaswamy (1979, 1982) and Poterba and Summers (1984) do find evidence that pre-tax returns are related to dividend yield. Moreover, Blume (1980), Keim (1985) and Kalay and Michaely (2000) have reported evidence of a yield-tax effect, but their results were not entirely consistent with the tax effect hypothesis; therefore, they concluded that the relation across stocks is far too complicated to be fully explained by tax effect.

Empirical results on the ex-dividend day studies of testing tax hypothesis are also inconclusive. For instance, Elton and Gruber (1970), Kaplanis (1986), Lasfer (1995) and Bell and Jenkinson (2002) have provided evidence that taxes are important determinants of the firms payout decisions, suggesting that taxation affects significantly ex-dividend day share price behaviour, and shareholders in a higher tax brackets have a tax-induced preference for capital gains over dividend income, compared to those in lower tax brackets; thus, consistent with the tax clientele hypothesis. Nevertheless, Kalay (1982a), Michaely (1991) and Koski and Scruggs (1998) argued that in the presence of short-term traders, the marginal tax rates of the shareholders cannot be inferred by observing ex-dividend day share price drops. Because, short-term traders such as tax-neutral dealers and corporate traders, who are seeking for arbitrage profits, dominate the price setting on the ex-days. In fact, they have reported findings that supported the short-term trading hypothesis around ex-dividend days, eliminating the tax effect. Subsequently, even though tax effects on share prices may be observed around ex-dividend days, there are tax clienteles for different dividend policies who would only invest companies with policies that best fit their tax position. In equilibrium, one can argue that no firm can increase its value by reducing taxes through its dividend policy. Therefore, it is clear that the dividend puzzle is far too complex to be explained by taxes alone.

2.3.4   Conclusions of Empirical Studies in Developed Markets

The main empirical research of the dividend puzzle particularly focuses on three big imperfections; the asymmetric information, agency problems and taxes. After reviewing various main empirical studies in developed markets in this part of the thesis, several conclusions are reached and briefly summarised as follows:

(a)   There is substantial empirical evidence supporting Lintner's (1956) partial adjustment model of signalling theory, which is characterised by firms involving in dividend smoothing and partially adjusting dividends to a long-term percentage of

permanent earnings. This approach has been central to the dividend debate and has still remained valid, after all these years when the original findings were presented in 1956. Specifically, firms believe in the stability of dividends, concerning that the market reacts favourably to dividend increases and unfavourably to decreases. Hence, they tend to prevent making changes in dividend rates that may have to be reversed in the future, and they are reluctant to cut dividends, unless adverse circumstances are likely to persist. Further, the level of earnings and lagged dividends are the most crucial determinants of the current dividend level.

(b)   Even though Lintner's (1956) model is consistent with the signalling rationale for dividends, empirical evidence is inconclusive with the information content hypothesis of dividends, suggesting that managers have prior inside information about their firms' future performance; hence they use cash dividends announcements to convey changes in their expectations about the firm. There has been no consensus achieved on the argument that dividend policy change announcements do necessarily signal about the future earnings changes of the firms. There is not strong evidence that announcements of dividend increases/decreases and initiations/omissions characteristically trigger an impact on share prices in the same direction.

(c)   There is strong evidence in favour of the cost minimisation model, which was developed by Rozeff (1982), combining transactions costs and agency costs to an optimal dividend policy. A number of studies reported empirical results consistent with Rozeff's original findings and indicated a relationship between dividend policy and agency cost variables. Similarly, there is evidence that dividend policy may play a role in controlling agency related problems by facilitating primary capital market monitoring of firms' activities and performance as proposed by Easterbrook (1984). There is also evidence that dividends can be used as substitutes with other non-dividend monitoring mechanisms, such as managerial ownership, leverage and growth. However, empirical evidence based on Jensen's (1986) free cash flow hypothesis is quite mixed. Since both agency cost of free cash flow and signalling hypothesis imply relatively similar effects on share prices, even though many empirical studies showed support for the free cash flow hypothesis, they cannot completely rule out the cash flow signalling hypothesis.

(d)   There is not enough evidence that dividend policy is used to expropriate wealth from bondholders to shareholders. Again, this is not easy to test empirically as the evidence is mixed, because of the possible difficulty of distinguishing between the

wealth transfer and signalling hypotheses. Nevertheless, a number of researchers found no evidence of the wealth transfer hypothesis, whereas a few showed support, but they still cannot rule out the signalling hypothesis.

(e)   The tax effect hypothesis asserts that when dividends are taxed at higher rates than capital gains, generous dividends reduce shareholder's wealth through taxes. Therefore, the share prices of firms with high dividend payouts will reflect this tax disadvantage. On the other hand, the tax clientele hypothesis suggests that not all investors are taxed at the same rate and those investors will invest in companies with cash dividend policies suitable for their tax situation. Since clienteles exist for low and high dividend policies, companies cannot increase their values by reducing taxes through their dividend policies.

(f)   Some researchers found that the existence of the clientele effects determines the ex-dividend day share prices, as the ex-dividend price drop should reflect the differential taxes between dividend income and capital gains income of the marginal investors. Alternatively, short-term trading hypothesis challenged this point by arguing that in the presence of short-term traders, such as tax-neutral dealers and corporate traders, the marginal tax rates of the shareholders cannot be inferred by observing ex-day share price drops. Because, short-term traders, who are seeking for arbitrage profits will dominate the price setting on the ex-days; hence, eliminating the tax effect. Accordingly, empirical evidence of studies testing the tax related hypothesis is completely inconclusive.

(g)   The literature on dividend policy in developed markets, where the main dividend policy theories are originally developed, have provided extensive evidence regarding the dividend debate, by contributing voluminous empirical studies. Although some hypotheses and models (for instance, the Lintner or Rozeff models) have been strongly supported by many scholars, no general consensus has yet been reached after several decades of investigation, despite extensive debate and countless research. Consequently, the main motivation for paying dividends is still unsolved and therefore remains as a puzzle.

2.4   Empirical Studies in Developing Markets

Even though dividend policy literature is extensive, since researchers have developed and empirically tested various theories, models and hypotheses by contributing voluminous studies, most of the theoretical and empirical evidence on dividend policy have been used data from developed markets, mainly the US and followed by the UK. Therefore, little is known about dividend policy and the explanatory power of models for other countries, specifically developing (emerging) markets, where imperfections are the norm rather than expectations, and much stronger than in developed markets. Indeed, emerging markets are generally differentiated from the developed markets to a degree in terms of their effectiveness in meeting requirements of their determined functions, since various conflicts are associated, such as political and social instability, lack of adequate disclosure, poor laws and regulations, weaker financial intermediaries that provide efficient monitoring due the failure in the effectiveness of their financial markets (La Porta *et al.,* 1999; 2000; Aivazian *et al.,* 2003a; 2003b; Yurtoglu, 2003).

Considering the growing importance of emerging markets in terms of global equity investments, these markets have comparatively recently started attracting international investors. Accordingly, emerging markets attach more pieces to the *dividend puzzle* and researchers have started investigating the dividend behaviour of corporations in developing countries (Glen *et al.,* 1995; Adaoglu, 2000). The purpose of this section, therefore, is to review the literature of dividend policy in the context of developing countries. The following selective review of empirical research in developing markets is divided into three sub-sections; (i) studies of the partial adjustment model, (ii) studies related to agency cost theory of dividends and (iii) studies examined the determinants of dividend policy in developing markets.

2.4.1   Studies of the Partial Adjustment Model in Developing Markets

Various studies to date have tested Lintner's (1956) model and have been strongly supportive of his findings as well as reported consistency of results across many studies at different periods of time in developed markets. In this respect, Mookerjee's (1992) research is one of the earliest studies that apply the Lintner model to a developing market, rather than a developed one. Specifically, Mookerjee (1992) first attempted to determine whether the basic Lintner model explains aggregate dividend payout behaviour in a developing country, India, where the financial and institutional environments within which firms operate are different than those from developed

countries. Second, a variant model of Lintner, which was achieved by the inclusion of external financing as an explanatory variable, was tested in order to find out whether it improves the predictive power of the basic Lintner model in the Indian context. The OLS regression results on a sample of annual data for the aggregate Indian corporate sector, during the period 1950-1981, showed that the basic Lintner model was successful in explaining corporate sector dividend payments behaviour in India. The results further revealed that the inclusion of the external financing into the model, as an explanatory variable, significantly improved the fit of the model, which also indicated that firms in India use external finance to augment dividend payments. Overall, the findings of Mookerjee's (1992) study showed support of Lintner's (1956) argument and also suggested that the availability of external finance can be an important determinant of dividend payments in some developing economies with the viability of external finance at subsidized rates.

Adaoglu (2000) investigated whether the ISE-listed companies follow stable dividend policies in the emerging Turkish market, as they do in developed markets, by using the Lintner model. The ISE's history dated back to 1986 and had some significant changes in the dividend policy regulations in 1995. For the fiscal years 1985-1994, the ISE firms were obliged to pay at least 50% of their distributable profit as a cash dividend but in 1995, amended regulations provided flexibility to companies and did not force them to pay a certain part of their profit as dividends. Accordingly, the companies were allowed to decide to pay dividends in the form of cash dividends, stock dividends or in a combination of both forms. They were also free to choose between paying dividends and retaining their earnings. Due to the significant regulatory change, Adaoglu (2000) focused on two periods, 1985-1994 and 1995-1997, and obtained panel data from 76 industrial and commercial companies listed on the ISE, with at least 5 years of *nonzero* cash dividends during this period.[37]

Moreover, Adaoglu (2000) estimated the Lintner model by using panel data regressions (pooled OLS, fixed and random effects) and used firm-level data, in other words, dividend and earnings per share values, following Fama and Babiak (1968). The empirical findings showed significant and positive constant and earnings coefficients but insignificant lagged dividends coefficient. Also, Lintner's speed of adjustment

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[37] Adaoglu (2000) followed the same strategy as Dewenter and Warther (1998) who employed in order to find out the degree of dividend smoothing for the Japanese firms. Tests were repeated for at least four, six and seven years of *nonzero* cash dividends and the results led to the same findings regarding the regulation effect and dividend stability of the ISE companies.

factor was found to be 1.00, which was at the maximum level. That means the ISE firms did not smooth the dividends during the period 1985-1997. Hence, the results suggest that there were significant differences between the ISE companies and the developed market companies' dividend behaviour; Turkish firms followed unstable dividends policy unlike their counterparts in developed markets. The main factor determining the cash dividend payments was the current earnings in a given year and any variability in the earnings of the firm is directly reflected in the level of cash dividends. Further, even though the 1995 regulatory change provided greater flexibility in the dividend policy setting process, the ISE companies continued to follow unstable dividend policies, which was also inconsistent with Lintner's argument of dividend policy behaviour.

Pandey (2001) aimed to study the dividend behaviour of Malaysian corporations by attempting to answer whether payout ratios differ across industries, what dividend responses are possible when earnings change, and whether Malaysian firms follow stable dividend policies. Pandey (2001) conducted a sample of 248 industrial companies listed on the Kuala Lumpur Stock Exchange (KLSE) for the period 1993-2000. The study results, first, showed that there are significant differences across industries in payout ratios in Malaysia. For instance, plantation and consumer products industries distribute highest dividends, as they have fewer growth opportunities. In contrast, construction industry has the lowest payout ratio since its cash needs are greater for financing growth opportunities. Second, it is found that a large number of Malaysian firms increased their dividends when their earnings increased, while they were also very prompt to omit dividends when they suffer losses. Finally, both the OLS and fixed-effects regressions results provided support for the Lintner model in the emerging Malaysian market, revealing that Malaysian firms relied both on past dividends and current earnings in setting the current period's dividend payments. However, they had lower payout ratios and higher adjustment factors, pointing out those Malaysian firms have low smoothing and less stable dividend policies.

In their famous study regarding dividend policy behaviour in emerging markets, Aivazian *et al.* (2003a) compared the dividend behaviour of firms operating in developing countries with the dividend policies of US firms. Their sample consisted of the largest firms from eight emerging markets (South Korea, Malaysia, Zimbabwe, India, Thailand, Turkey, Pakistan and Jordan) and 100 US firms over the period 1980-1990. They considered the US market as a market-oriented economy, whereas all eight emerging markets are mainly bank-oriented economies. The different institutional

regimes were found to be important, since dividends are more predictable in arms length capital markets in developed countries, to provide assurance for external investors. However, in emerging markets where firms are more bank-oriented, they then hypothesised that the dividends are more immediate to reflect the firm's unpredictable internal cash flows. The empirical results revealed that it is indeed generally more difficult to predict dividend changes for the emerging market companies because the quality of firms decreasing dividends were much more similar to those increasing dividends, than for the US companies. Further, regression results suggested that current dividends in developing countries were much less sensitive to lagged dividends than for the US control sample of companies. In fact, it was found that the Lintner model still worked well for the US firms, whereas it did not work very well for the emerging market companies. In conclusion, these results supported the notion that the institutional structures of developing countries compose corporate dividend policy a less feasible mechanism for signalling, or for reducing agency costs than for US firms operating in capital markets with arm's length transactions.

Al-Najjar (2009) examined the dividend policy decisions of Jordanian non-financial firms. The aim was to identify the determinants of dividend policy decisions of firms listed on the Amman Stock Exchange (ASE) and to examine whether they smooth their dividend payments as proposed by the Lintner model. The study sample consisted of a panel data from 86 non-financial firms traded on the ASE during the period 1994-2003. The results of pooled OLS and panel model regressions showed that current earnings, past dividends and the constant term were all statistically significant and positively related to the current dividends. Moreover, when comparing the speed of adjustment coefficient and the target payout ratio of the Jordanian sample (0.429 and 0.478 respectively according to the pooled model, as it was found to be more favourable than panel models) with Lintner's (1956) results, Jordanian firms had higher adjustment factors with lower target payout ratios. Consequently, Al-Najjar (2009) suggested that the Lintner model is valid for explaining dividend behaviour in Jordan. Further, Jordanian firms have target payout ratios and they partially adjust dividends toward their targets, even though relatively faster compared to the US (developed) market, which indicates that Jordanian firms smooth their dividends and therefore follow stable dividend policies.

In another study, Chemmanur *et al.* (2010) compared corporate dividend policies of firms in Hong Kong and the US. Their sample contained industrial and commercial

companies listed on the Stock Exchange of Hong Kong and industry-matched US corporations listed on the NYSE, AMEX and NASDAQ, covering the period 1984-2002. They attempted to examine dividend smoothing by the Lintner dividend model and using time-series regressions at both the aggregate and firm levels. The empirical results reported the speed of adjustment parameter of 0.279 for US firms, which was less than half of the speed of adjustment value of 0.684 for Hong Kong firms. This meant that the extent of dividend smoothing by firms in Hong Kong is significantly less than those in the US, since they adjust their dividends toward a long-term target payout ratio much faster than in the US. Accordingly, Chemmanur *et al.* (2010) concluded that compared to US firms, Hong Kong firms follow a more flexible dividend policy commensurate with current year earnings.

Furthermore, Al-Ajmi and Abo Hussain (2011) investigated the applicability of Lintner's thesis of dividend policy by using an unbalanced panel data for a sample of 54 Saudi-listed firms (708 firm-year observations) during 1990-2006. Their empirical results showed that lagged dividends and current earnings have the expected signs and are significant and therefore supported the partial adjustment model proposed by Lintner, suggesting that dividend payments by firms listed on the Saudi Securities Market seem to be shaped by previous dividend levels and current earnings. Moreover, the results reported the speed of adjustment of 0.71 and the implied target payout ratio of 0.43, which indicated that Saudi firms have more flexible dividend policies, since they act quickly to increase dividend payments, and are willing to cut dividends when earnings decline and pay no dividends when losses are experienced.

More recently, Al-Malkawi *et al.* (2014) examined dividend smoothing of Omani companies using Lintner's (1956) partial adjustment model. The study sample consisted of 104 corporations listed on the Muscat Stock Market over the period 2001-2010. Their results provided empirical evidence supporting the validity of Lintner's original findings; Omani companies seem to adjust their dividends toward the target payout ratio gradually but more interestingly with a relatively low speed of adjustment of 0.257, as compared to other firms in developed and emerging economies. In addition, the empirical evidence also suggested that the 2008 global financial crisis had no significant impact on dividend stability of Omani corporations. Therefore, Al-Malkawi *et al.* (2014) concluded that signalling is an important concern, because Omani companies attempt to smooth their dividend payment streams and adopt stable dividend policies.

2.4.2 Studies related to Agency Cost Theory of Dividends in Developing Markets

Agency cost explanation of dividends in the context of emerging markets has attracted a number of researchers. Unlike the studies in developed countries that have paid extensive amount of attention to the *principal-agency conflicts*[38] on dividend policy, where financial markets mostly contain the publicly-held companies with dispersed ownership and the control in the hands of professional managers, these researchers pointed out that concentrated ownership, by large controlling shareholders, is the dominant form of ownership structure in most developing countries and therefore the salient agency problem is expropriation of the wealth of minority owners by the controlling shareholders. This implies the conflict between controlling and minority shareholders, the *principal-principal conflicts*.[39] Indeed, a few recent cross-country studies have provided evidence that concentrated ownership by large controlling shareholders is the dominant form of the ownership structure in most developing economies, in contrast with the Berle and Means (1932) image of the widely held corporation (La Porta *et al.*, 1999; Claessens *et al.,* 2000; Shleifer and Visny, 1986).

La Porta *et al.* (1999) examined the ownership structures of large firms in 27 different countries[40] across the world, from the richest common law countries to countries with poor shareholder protection. Their results revealed that the ownership structure of Berle and Means's widely held corporation was only a common form for large firms in the richest common law countries. However, in the countries with poor shareholder protection, only relatively few of these firms were widely held; even the largest firms were more likely to have controlling shareholders and are generally dominated by

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[38] In their classic study, Berle and Means (1932) drew attention to the prevalence of widely held corporations in the US, in which ownership structure of firms is dispersed among small shareholders but the control is concentrated in the hands of managers. The Berle and Means widely held corporation is extensively accepted in the finance literature as a common organisational form for firms in the richest common law countries, including the US, the UK, Canada and Australia. Accordingly, the traditional agency cost theory drives from the problems associated with the separation of management (the agent) and ownership (the principal), and the differences in managerial and shareholder priorities, in other words the *principal-agent conflicts*, developed by Berle and Means (1932), Jensen and Meckling (1976), Easterbrook (1984) and Rozeff (1982), is also referred to as Agency Problem I in this thesis like prior studies.

[39] In most emerging economies, companies usually have controlling shareholders that own significant fractions of equity, typically founding families. The controlling shareholders can efficiently determine the decisions of managers, in fact top managers almost always come from the controlling family, and they can implement policies that benefit themselves at the expense of minority shareholders (La Porta e*t al.,* 1999). In this context, problem arising from the *principal-principal conflicts,* which is also referred to as Agency Problems II in this thesis like prior studies.

[40] Argentina, Australia, Canada, Hong Kong, Ireland, Japan, New Zealand, Norway, Singapore, Spain, the UK, the US, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Israel, Italy, South Korea, Mexico, Netherlands, Portugal, Sweden and Switzerland.

families or the state, whereas equity control by financial institutions was far less common. Furthermore, the results indicated that the controlling families typically have power over their corporations in considerable excess of their cash flow rights, primarily through the use of pyramidal structures and their direct involvements in management.

Claessens *et al.* (2000) investigated the separation and control for 2,890 companies in nine East Asian countries (Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand) by collecting the ownership data as of the end of fiscal year 1996 or the closest possible year. Their findings showed that a single shareholder controlled more than two-thirds of publicly-listed East Asian firms and about more than half of all listed companies were dominated by families. Moreover, corporate control was usually enhanced through pyramid structures and cross-holdings between companies in all East Asian corporations, therefore voting rights generally exceeded formal cash-flow rights. Separation of management from ownership control was rare and top management of approximately 60% of family-controlled companies were related to the family members of the controlling shareholder. Significant cross-country differences also existed however; for instance, corporations in Japan were generally widely held, whereas corporations in Indonesia and Thailand were typically family dominated. State ownership was significant in Indonesia, South Korea, Malaysia, Singapore and Thailand. Consequently, Claessens *et al.* (2000) suggested that these findings indicated the ability and incentives of controlling shareholders to expropriate from minority shareholders.

Yurtoglu (2003) studied the ownership and control structures of publicly-listed firms in Turkey. The study sample consisted of 305 firms listed on the ISE in 2001. The research results indicated that while holding companies, in other words business groups and non-financial firms, were the most common owners at the direct level, in fact families ultimately owned 80% of all firms listed on the ISE. Families typically tended to organise a large number of firms under a pyramidal ownership structure or through a complicated web-of inter-corporate equity linkages, and also often made the use of dual class shares or other corporate charter arrangements, through which they can reduce their cash flow rights whilst they firmly have the control on their companies. The analysis also showed that such variations implemented by controlling families did have consequence in significantly lower market-to-book ratios, suggesting large agency costs because of the conflicts of interest between controlling families and minority shareholders, which harm the latter, while benefit the former shareholders.

Shleifer and Vishny (1997) argued that when large shareholders, especially family owners, hold almost full control, they tend to generate private benefits of control that are not shared with minority shareholders. Controlling shareholders can expand the companies' cash flows and implement policies that benefit themselves in such ways as paying themselves extreme salaries, providing top managerial positions and board seats to their family members even though they are not capable.[41] In these cases, the salient agency problem is therefore expropriation of the wealth of minority owners by the controlling shareholders, so called Agency Problems II. Furthermore, it is argued that families are almost always involved in the management of their firms, which provides greater alignment between the interests of shareholders and managers. Therefore, family control is one of the most efficient forms of organisational governance of monitoring managers and may bring more effective management and supervision, which leads to zero or lower owner-manager agency costs (Agency Problem I) than other large shareholders or dispersed corporations. Nevertheless, family control increases the moral risks arising from the abuse of control rights and families might have powerful incentives to expropriate wealth from minority investors (La Porta *et al.,* 1999; Ang *et al.,* 2000; Anderson and Reeb, 2003).

La Porta *at al.* (2000) argued that cash dividends can be used to reduce Agency Problem II by guarantying a pro-rata payout to entire shareholders and removing corporate wealth from controlling shareholders, hence preventing expropriation of the wealth of minority owners by large controlling equity holders. They further suggested that one of the main remedies to these types of agency problems is the law. Corporate law and legal environment can supply outside investors and existing shareholders specific powers[42] to protect their wealth against expropriation by controlling families. La Porta *et al.* (2000)

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[41] Based on the Agency Problem II arguments, family owners may use their controlling power to exacerbate the principal-principal conflicts in various ways. Morck and Yeung (2003) identified the "other people's money" problem, which involves with a situation in where families have significant control over a firm with a 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 divert resources to themselves and obtain "private benefits of control", such paying themselves extreme salaries, providing top managerial positions and board seats to their family members even though they are not capable (Shleifer and Vishny, 1997). Another common form of expropriation of wealth from minority owners is refer to as "tunnelling", which is defined as the transfer of assets and profits within a family-owned business group, where the controlling family transfer assets and profits in which they have higher ownership from firms with lower ownership through non-market prices (Johnson *et al.*, 2000).

[42] These powers could vary from the right to vote on important corporate matters, to the right to sue the firm for damages, to the right to receive the same per share dividends as the controlling owners, which are the legal protections that explain why becoming a minority shareholders is a reasonable investment strategy, rather than just being a complete giveaway of funds to others who are under a few, if any, obligations to return (La Porta *et al.,* 2000).

proposed two alternative agency models based on the legal environment and dividends, namely the *outcome model* and *substitute model*. According to first view, dividends are an outcome of an effective system of legal protection of shareholders. Under an effective system with strong protections, minorities use their legal powers to force firms to disgorge cash in the form of dividends, which are then an "outcome" of an effective system of legal protection of shareholders, hence preventing controlling owners to expropriate corporate wealth. The substitute model posits that dividends are substitutes for legal protection in the countries with poor shareholders protection since companies with weak shareholders protection need to establish a reputation for good treatment of minority investors. A reputation for good treatment of shareholders is worth the most in economies with poor legal protection of minority shareholders, who have little else to rely on. By paying dividends, controlling shareholders return profits to investors, which reduce the possibility of expropriation of wealth from others, therefore establishing a good reputation. The outcome model predicts that dividend payments are higher in countries with effective shareholder protection. Contrarily, the substitute model argues that in countries with effective shareholder protection, the need for a reputation mechanism is weaker; therefore, so is the need to distribute dividends, then suggesting, ceteris paribus, that dividend ratios should be higher in countries with poor legal protection of shareholders than in countries with strong protections. Moreover, the outcome model also states that firms with better investment opportunities should have lower payout ratios in economies with good shareholder protections. However, the substitute model predicts that in markets with poor legal environment, firms with better investment opportunities may pay out more to maintain their reputations (La Porta *et al,* 2000).

Accordingly, La Porta *et al.* (2000) collected a sample of 4,103 firms from 33 countries[43] around the world during the period 1989-1994 to investigate dividend policies of large corporations by using two alternative dividend models developed by them. The cross-country sample provided the advantage of different legal protections of minority shareholders across these countries to examine and compare dividend policies of companies whose minority shareholders face different risks of expropriation of their wealth by corporate insiders. The study results showed that firms operating in countries

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[43] La Porta *et al.* (2000) classified their sample as civil law countries, Argentina, Austria, Belgium, Denmark, Finland, France, Germany, Indonesia, Italy, Japan, South Korea, Mexico, Netherlands, Norway, Philippines, Portugal, Spain, Sweden, Switzerland, Taiwan and Turkey, and common law countries, Australia, Canada, Hong Kong, India, Ireland, Malaysia, New Zealand, Singapore, South Africa, Thailand, the UK and the US.

with better protection of minority shareholders pay higher dividends, providing consistent report for the outcome agency model of dividends. Also, in these economies, fast growth firms distribute lower dividends than slow growth firms, in line with the argument that legally well-protected minority shareholders tend to wait for their dividends, when investment opportunities are good. Nevertheless, in poorly protected countries, shareholders are more likely to take whatever dividends they can get, regardless of investment opportunities, suggesting that this apparent misallocation of investment is most probably part of the agency cost of poor legal protection.

Faccio *et al.* (2001) investigated how dividend behaviour is related to the structure of ownership and control of East Asian firms with a benchmark sample of West European firms based on the Agency Problem II argument. They examined 5,897 companies from five West European (France, Germany, Italy, Spain and the UK) and nine East Asian (Hong Kong, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan and Thailand) countries during the period 1992-1996. Their analysis showed that, unlike most US companies widely held, the predominant form of ownership in East Asia was control by a family, which often supplied a top manager, and widely held corporations were in the minority. This form of ownership, in other words "crony capitalism", was actually more pronounced in Western Europe. Therefore, these findings suggested that the salient agency problem in these countries is expropriation of wealth from outside shareholders by controlling shareholders, which are the families in most cases. This type of expropriation is more likely to arise when the corporation is affiliated to a group of corporations, all controlled by the same shareholder, which was found to be true for about half of the firms in Western Europe and East Asia. Faccio *et al.* (2001) further studied the relationship between dividends and the ownership and control structures of firms in both regions. Their empirical analysis indicated evidence on the expropriation that takes place within business groups, and on the differences in expropriation between Western Europe and East Asia; particularly, group-affiliated firms in Europe pay significantly higher dividends than in Asia and are dampening insider expropriation. Additionally, the presence of multiple large shareholders increases dividend rates in Western Europe but decreases in East Asia, suggesting that other large owners tend to help reducing the controlling shareholder's expropriation of minority owners in Europe, whereas they appear to exacerbate it in Asia.

Furthermore, Manos (2002) studied the agency cost theory of dividend policy in India by using a version of Rozeff's (1982) cost minimisation model, which was modified

according to the context of emerging Indian market. The study sample consisted of 661 non-financial companies listed on the Bombay Stock Exchange in 2001 and the study results provided support to the cost minimisation model and the agency rationale for dividend policy. Particularly, agency costs variables, measured as foreign ownership, institutional ownership, insider ownership and ownership dispersion, were found to be positively related to the target payout ratios of Indian firms. The positive relationships between dividends and foreign ownership, and ownership dispersion, were in line with the expectations, suggesting that it may be more difficult for foreign investors to monitor the managements, as well, the increase in the dispersion of stock ownership of the firm increases the collective action problem of monitoring, and therefore the need for the dividend-induced capital market monitoring. Contrarily, institutional ownership and insider ownership were expected to be negatively correlated and the estimated positive correlation contradicts to the agency literature. Manos (2002) stated that it may be the level of institutional monitoring is insufficient due to the greater agency conflicts in India; thus, they force the firms to payout higher to induce capital market monitoring and that the issues with the insider ownership required further investigation.

Chen *et al.* (2005) analysed a sample of 412 Hong Kong firms during 1995-1998 and their empirical results, related to the relationship between family ownership and dividend policy, showed that, for small firms, there was a significant negative relationship between dividend payouts and family ownership of up to 10% of the firm's shareholdings and a positive relationship for family ownership between 10% and 35%. Hence, Chen *et al* (2005) interpreted their findings as the fact that dividend payouts are potentially used by controlling families in smaller Hong Kong companies as a tool of extracting resources out of the firms they control. When their shareholdings increase, family managers may care more about their dividend income compared to their cash salary, since on average their cash salary is much lower than their dividend income. However, it may also be the case that other shareholders foresee the potential expropriation by the families and require higher payouts from firms with potentially the largest agency conflicts.

In another study, Kouki and Guizani (2009) provided an empirical examination of the agency cost explanation of the dividend policy, by attempting to identify the influence of shareholder's identity on dividends in Tunisia. They collected a panel sample of 29 firms listed on the Tunisian Stock Exchange over the period 1995-2001. The study results showed that ownership structures of Tunisian firms highly influence their

corporate dividend polices. Specifically, it is revealed that there was a significantly negative relationship between the institutional ownership and dividends paid per share. Similarly, the relationship between state ownership and the level of dividends paid to shareholders was significantly negative. However, the results indicated that the existence of multiple large shareholders, in other words highly concentrated ownership, significantly increase the dividend payments in Tunisia. In addition, a strong effect of the free cash flow on dividend policy was found; the more the cash available the higher the dividend per share. In terms of the firm size effect, there was a significantly negative relationship between firm size and dividends, suggesting that larger firms have more liabilities and thus are less likely to distribute dividends in order to not borrow even more capital. Finally, Tunisian firms with better investment opportunities were more likely to pay dividends, whereas those with high leverage tended to pay out a lower level of dividends.

Using a data sample of 1,486 Chinese A-share listed firms for the period 2004-2008, Wei *et al.* (2011) found that families have lower cash dividend payouts and lower tendencies to distribute dividends than non-family firms in China, and a favourable regional institutional environment has a significant positive impact on the payout ratios with tendency to pay dividends of listed companies. The results also showed that the impact of the regional institutional environment on cash dividends is stronger in family controlled firms than in non-family firms. Having interpreted their results, Wei *et al* (2011) suggested that family control in China seemed to increase Agency Problem I rather than Agency Problem II, which has a significant negative impact on cash dividend payments due to a lack of effective supervision and the occupation of leading positions by incapable family members, which usually reduces corporate efficiency. Then, a favourable regional institutional environment takes a positive corporate governance role by helping to lessen Agency Problem I and encouraging family firms to distribute cash dividends. Accordingly, they further suggested that a high cash dividend payout is more likely to be the consequences of the "outcome model" of dividends, which is proposed by La Porta *et al.* (2000), by a favourable regional institutional environment.

Aguenaou *et al.* (2013) investigated the effect of ownership structure on dividend policies for firms listed on the Casablanca Stock Exchange during the period 2004-2010. The study results revealed that family ownership negatively influences the level of distributed dividends. Aguenaou *et al.* (2013) suggested that family ownership is a

typical aspect of firms in the Moroccan market and the low dividend payout ratios are justified by high agency problems in family controlled firms. Because, family shareholders increase the cost for firms since their lack of diversification, the hiring of unskilled family members and the abuse of other shareholders' rights, which all may result in poor transparency and absence of accountability.

More recently, using a dataset of 458 Colombian companies over the period 1996-2006, Gonzalez *et al.* (2014) examined the effects of family involvement on dividend policy and how family involvement influences agency problems between majority and minority shareholders. Their results showed that family influence in relation to the level and likelihood of dividend payments differs considerably according to the type of family involvement. Specifically, family involvement in management does not affect dividend policy, whereas family involvement in both ownership and control through pyramidal structures has negative impacts. But family involvement in control through disproportionate board representation has a positive effect on dividend policies of Colombian companies. Therefore, family influence on agency problems, and hence on dividend policy as a mitigating device, varies depending on family involvement.

2.4.3 Studies of the Determinants of Dividend Policy in Developing Markets

The determinants of dividend policy in the context of developing markets have been investigated by a number of studies.

Aivazian *et al.* (2003b), the most well-known scholars of their research interest in emerging markets, investigated the dividend policy in eight developing countries (South Korea, Malaysia, Zimbabwe, India, Thailand, Turkey, Pakistan and Jordan), compared to a control sample of ninety-nine US firms over the period 1981-1990. They found that the same firm-specific determinants influence the dividend policy in emerging markets as in the US and emerging market firms show dividend behaviour similar to US firms. More precisely, the empirical results showed that, for both developing country and US firms, profitability influences dividend payments since high return-on-equity tends to mean high dividend payments. In contrast, higher debt ratios correspond to lower dividend payments, indicating that financial constraints affect corporate dividend policy. Further, the market-to-book ratio has a positive effect on dividend payments, contrary to expectations. The results also suggested little evidence of business risk and size influence dividend policy in a significant or sensible way. For emerging market firms, dividends are negatively related to the tangibility of firm assets. This may

correspond to the drop in short-term assets that are available as collateral for short-term bank debt, which would reduce short-term borrowing capacity in bank-dominated markets. Overall, Aivazian *et al.* (2003b) concluded that the same firm-specific determinants are important for emerging market firms as for US firms, even though financial systems are significantly different from those in the US; however, emerging market firms are more sensitive to some of the determinants, pointing out the greater financial restrictions under which they operate.

In a previously mentioned study, Al-Najjar (2009) also investigated the dividend decisions of 86 non-financial Jordanian firms from 1994 to 2003. The empirical results showed the factors that affect the dividend policy decisions in emerging Jordan market are similar to those determinants that affect the likelihood of paying dividends in developed markets, which are consistent with Aivazian *et al.* (2003b). Moreover, Al-Najjar (2009) reported that the probability of paying dividends increases with profitability, growth opportunities and firm size' increases, whereas it decreases as debt ratio, institutional ownership, business risk and assets tangibility increase. Nevertheless, assets liquidity tends to have no influence on the probability of paying dividends in Jordan.

Kirkulak and Kurt (2010) examined the dividend policy in Turkey, specifically the dividend payment decisions of the ISE-listed firms (with a sample of 2,326 firm-year observations and a sub-sample of 732 firm-year observations of dividend reductions) over the period 1991-2006, which was a period characterised by important regulation changes and financial crises.[44] Their findings showed that the percentage of dividend paying firms decreased from 51.28% in 1991 to 35.64% in 2006, suggesting a declining trend in dividend paying Turkish firms. It was found that earnings were the main

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[44] The ISE had some significant changes in the dividend policy regulations; the first mandatory dividend payment policy was implemented between 1985 and 1994. The second mandatory dividend payment policy was redeployed in 2003. For the fiscal years 1985-1994, the ISE firms were obliged to pay at least 50% of their distributable profit as a cash dividend but in 1995, amended regulations provided flexibility to companies and did not force them to pay a certain part of their profit as dividends. Accordingly, the companies were allowed to decide to pay dividends in the form of cash dividends, stock dividends or in a combination of both forms. They were also free to choose between paying dividends and retaining their earnings. The second mandatory dividend policy was implemented in 2003, which required that the amount of first dividends had to be depicted in firms' main covenants and could not be less than 20% of distributable profit. Dividends could be paid as either cash or stock dividends as well as a mixture of them but could not be less than 20% in total.

Furthermore, Turkey experienced several financial crises during the sample period. First, it was the big financial shock due to the depreciation of Turkish Lira in 1994. In 1999, the Turkish disinflation program collapsed and the economy suffered heavy turbulence. Then, the economic recession in Southeast Asia, followed by the Russian crisis in 1998, adversely affected the Turkish economy. In 2001, a rigorous banking crisis emerged in Turkey, which resulted many corporations declared bankruptcy and others experienced huge losses.

determinant of the dividend payments since Turkish firms with large current earnings were more likely to distribute dividends. Contrarily, the debt level had no significant effect on dividend policy, whereas high growth potential did, which could be partly attributed to Turkey's mandatory dividend payment policy that forced even firms with growth potential to pay the required level of dividends. It could also be that increased levels of investment opportunities increased the confidence in future prospects of these firms. The results further indicated that current earnings significantly affected the dividend reduction decisions, since dividend reductions were associated with low earnings; shrinking earnings forced dividend paying firms to cut their dividends. The debt level had no effect on dividend payment decisions but it significantly influenced the dividend reductions, as increased levels of debt indicated greater reductions in dividends. Moreover, the firms with low investment opportunities were likely to reduce dividends, while the ones with high investments opportunities tended to increase dividends to convey positive signals to investors, which was consistent with the signalling hypothesis. Finally, the results showed that the financial crises had a very clear impact on both dividend payment and reduction decisions.

Imran (2011) investigated the firm-specific factors determining the dividend policy decisions of Pakistani engineering companies trading on the Karachi Stock Exchange by using a sample of 36 corporations during a thirteen-year period 1996-2008. The research results displayed that current year dividend per share is a positive function of the previous year's dividends paid per share, earnings per share, profitability, sales growth and the firm size, while it is negatively related to the cash flow. Accordingly, Imran (2011) suggested that the Pakistani engineering firms with higher sales and higher profitability distribute more cash dividends to their shareholders. Likewise, the larger firms tend to increase the amount of cash dividends since they have more access to different sources of finance. Besides, firms are reluctant to cut their dividends from the previous year's level, in fact they desire to at least meet or increase the payout ratio from their previous level. Also, the negative correlation between dividends and cash flow implied that firms plough back their extra cash, whereas the liquidity of the firm has no effect on the dividend policy in the case of Pakistani engineering firms.

More evidence in the context of an emerging market, the United Arab Emirates (UAE), was provided by Mehta (2012), examining the most important determinants affect the dividend policy of the firms on a sample of 44 non-financial firms listed on the Abu Dhabi Stock Exchange over a five-year period 2005-2009. The results showed that firm

size, business risk and profitability explain 42% of total variations in the dividend payout policy, but since profitability is not always significant, firm size and business risk are the most important determinants in making dividend policy decisions by the UAE companies. First, firm size is significantly and positively related to the dividend payout; hence, the larger-sized firms pay out more dividends as compared to firms with smaller size. Second, the firms with high price-to-earnings ratio have lower risk and high growth prospects, suggesting that the higher the firm's price-to-earnings ratio, the lower its risk, and the higher the firm's payout ratio. Hence, the hypothesis that risk has a negative relationship with dividend payout is acceptable. Finally, contrary to most literature in developed countries, the study results do not show enough evidence that the profitability, liquidity and leverage are important factors in influencing the dividend policy decisions in the UAE.

In a most recent study, Kisman (2013) aimed to find out the most essential factors that affect the probability of paying or not paying dividends in Indonesia. In order to fulfil the purpose, the study examined a sample of 34 firms continuously listed on the Indonesia Stock Exchange (IDX) from 2005 to 2011. The results showed that profitability, agency cost variable (ownership dispersion) and liquidity had no impact on the probability of paying dividends. Kisman (2013) interpreted these findings as that profitability and liquidity had no effect because the emerging Indonesian market firms are generally small with low profitability and high investment opportunities; however, even if these small firms make profits and reach high level of liquidity, they prefer to retain earnings to fund investments, due to the difficulties of finding external financing or of hedged risk. Further, Kisman (2013) pointed out that Indonesian firms are generally dominated by a family group or a particular group of companies where the control is in the hands of small group of major controlling shareholders; therefore, it is not surprising that the minority shareholders have no effect in determining dividend policy of Indonesian firms. Finally, the results showed that investment opportunity and solvency had significantly negative effects, whereas firm size had a significantly positive impact on the probability of paying dividends in Indonesia.

2.4.4   Conclusions of Empirical Studies in Developing Markets

The empirical studies related to the developing markets that are reviewed in this section are summarised in Table 2.10 to 2.12 in Appendix I. Developing countries have comparatively recently attracted researchers who attempt to explain dividend policy

behaviour in these economies, and have attached more pieces to the *dividend puzzle* (Glen *et al.,* 1995). Empirical studies taken in the context of developing markets are relatively limited, when compared with the developed markets. However, a number of studies reviewed in this part of the thesis provide a generic understanding of dividend policy in these markets, allowing us to make the following conclusions:

(a)   Some of the empirical studies expand existing academic research into emerging markets context by testing a Western-based model; particularly, Lintner's (1956) partial adjustment model of dividends in order to find out whether the model holds true and to identify the implications of the model in emerging markets. Lintner's (1956) famous classic study revealed that managers are concerned about dividend signalling over time and indeed various studies to date reported consistent results with Lintner's findings in developed markets. However, the evidence is mixed in developing markets. The evidence conducted from the US market as well as other eight different emerging economies by Aivazian *et al.* (2003a) showed that the Lintner basic model still works for US firms but it does not work very well for emerging firms since current dividends are much less sensitive to past dividends in these markets. Similarly, Adaoglu (2000) found inconsistent findings with the Lintner argument and concluded that Turkish firms follow unstable dividend policies. Contrarily, Mookerje (1992) in India, Pandey (2001) in Malaysia, Al-Najjar (2009) in Jordan, Chemmanur *et al.* (2010) in Hong Kong, Al-Ajmi and Abo Hussain (2011) in Saudi Arabia and Al-Malkawi (2014) in Oman reported evidence supporting the Lintner model in explaining dividend behaviour in these emerging markets, but they generally have higher adjustment factors, hence lower smoothing and less stable dividend policies compared to developed countries.

(b)   Empirical evidence related to agency cost theory of dividends is extensive in developed markets; however, they generally assume that firms in these developed markets are widely-held and the control is concentrated in the hands of managers (*the principal-managers conflicts*). Nevertheless, a number of cross-country studies (La Porta *et al.*, 1999; Claessens *et al.*, 2000; Faccio *et al.*, 2001) provided evidence that concentrated ownership by large controlling shareholders, typically families, is the dominant form of the ownership structure in most developing countries. When large shareholders, including family shareholders, hold almost full control, they tend to generate private benefits of control that are not shared with minority shareholders. In these cases, the salient agency problem may therefore be expropriation of the wealth of minority owners by the controlling shareholders, in other words *the principal-principal*

conflicts, so called Agency Problems II (Shleifer and Vishny, 1997; La Porta *et al.,* 1999; Ang *et al.,* 2000; Anderson and Reeb, 2003). Accordingly, 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. Moreover, a number of researchers (Manos, 2002 in India; Chen *et al.*, 2005 in Hong Kong; Kouki and Guizani, 2009 in Tunisia; Wei *et al.*, 2011 in China; Aguenaou *et al.*, 2013 in Morocco; Gonzalez *et al.*, 2014 in Colombia) have indicated that ownership structure approach is highly relevant in explaining dividend policy based on agency cost theory. Consequently, agency cost theory of dividends needs to be uniquely investigated in emerging markets and, more importantly, the ownership structure of the firms in these markets should specifically be taken into account while identifying the proxies for agency cost variables.

(c)   A number of researchers investigated the firm-specific determinants of dividend policy in the context of developing markets. Aivazian *et al.* (2003b) in eight emerging markets, Al-Najjar (2009) in Jordan, Kirkulak and Kurt (2010) in Turkey, Imran (2011) in Pakistan, Mehta (2012) in the UAE and Kisman (2013) in Indonesia found that approximately the same determinants influence dividends policy decisions in developing markets as in developed countries. However, as Aivazian *et al.* (2003b) stated that due to various differences between developed and developing markets, even among those developing economies, such as financial systems, ownership structures, laws and regulations and so on so forth, their sensitivity to these determinants vary across countries. Indeed, the dividend sensitivity to some variables differs; for instance, profitability is generally found to be significantly and positively related to dividend policy (Aivazian *et al.*, 2003b; Al-Najjar, 2009; Kirkulak and Kurt, 2010; Imran, 2011) but Mehta (2012) and Kisman (2013) reported no significant relationship between profitability and dividends in the UAE and Indonesia respectively.

(d)   Although a number of studies reviewed here provide a generic understanding of dividend policy in different developing markets, empirical evidence related to these markets is relatively limited compared to the developed markets. Hence, much more empirical research is needed to be contributed in the context of developing countries.

2.5 Conclusions

This chapter of the study provides a literature survey on the dividend debate; which shows that corporate dividend policy literature offers various theoretical explanations and contains voluminous empirical research. Although Miller and Modigliani's (1961) dividend irrelevance theory is logical and consistent under the circumstances of perfect capital market assumptions, once this idealised world is left and we return to the real markets, various imperfections exist and this theory becomes highly debatable. Indeed, researchers proposed a range of leading dividend theories involved with the relaxation of M&M's assumptions and dealt with dividends in the presence of the various market imperfections, including the signalling theory, agency cost theory, transaction cost theory, tax-related explanations, bird-in-the-hand theory, pecking order theory, residual dividend theory, catering theory and maturity hypothesis. However, none of these theories explain the dividend puzzle single-handedly.

Empirical research regarding dividend policy is extensive. Many scholars have built and empirically tested a great number of models relating to these theories to explain why companies should pay or not pay dividends, whereas others have surveyed managers to learn what their thoughts are on the subject of dividends (Baker and Powell, 1999). However, the chapter shows an inconclusive judgment on the actual motivation for paying dividends despite countless research as in line with Fisher Black's (1976, p.5) statement that *"The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together."*

Furthermore, all these leading dividend policy theories, models and frameworks are originally developed based on developed markets. In fact, earlier studies on dividend policy in terms of developing theories and empirical tests were focused on mainly the US market and followed by the UK market. Therefore, less is known about dividend behaviour and the explanatory power of models for other countries, particularly developing (emerging) economies, where market imperfections are the norm rather than expectations, and much stronger than in developed countries. Nevertheless, considering the growing importance of emerging markets in terms of global equity investments, these markets have recently started attracting international investors at a considerable level. Accordingly, emerging markets attach more pieces to the *dividend puzzle* and researchers have started investigating the dividend behaviour of corporations in developing countries (Glen *et al.*, 1995; Adaoglu, 2000).

Even though the empirical research in developing markets has relatively contributed little evidence compared to developed markets, researchers have also started examining the dividend policy behaviour in emerging economies, especially over the past two decades. A number of studies reviewed in this chapter in the context of emerging markets have mostly confirmed that dividend policy behaviour in these markets generally tend to be, not surprisingly, different from developed markets in many aspects, due to the various factors such as political, social and financial instability, lack of adequate disclosure, poor laws and regulations, weaker financial intermediaries, newer markets with smaller market capitalisations, weaker corporate governance and different ownership structures (La Porta *et al.,* 1999; 2000; Kumar and Tsetsekos, 1999; Aivazian *et al.,* 2003a; 2003b; Yurtoglu, 2003).

However, it is observed that while examining dividend policy behaviour in different emerging markets, researchers have not clearly stated or distinguished, as suggested by Bekaert and Harvey (2002), between the concepts of regulatory liberalisation or integration undertaken in those markets for their study sample periods. Dividend policies of companies may indeed significantly differ based on the process of liberalisation or integration undertaken in the emerging markets in which they operate. It could, therefore, be argued that dividend policy decisions of companies in an emerging market should be better understood if researchers report whether the emerging market examined passes laws for financial liberalisation or attempts to implement serious economic and structural reforms to integrate with world markets. In this respect, the chapter raises the following question:

• What behaviour does the dividend policy of an emerging market show after implementing serious reforms for a better working of the market economy, outward-orientation and globalisation, in other words for market integration?

Accordingly, an interesting research idea, which emerged directly from the theoretical and empirical research surveyed in this chapter, is to carry the dividend debate into an emerging market but, differently to prior research, to examine the dividend policy behaviour of a particular emerging market that implemented serious economic and structural reforms for the integration with world markets, and to identify what behaviour the dividend policy of this emerging market shows afterwards. This doctoral thesis is aimed to answer the above research question.

APPENDIX I

LITERATURE SURVEY TABLES

Table 2.2 Studies of the Partial Adjustment Model in Developed Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Lintner (1956)	To discover what are the most important determinants of dividends while US managers setting their firms' dividend policy.	**Data sample:** US, 28 well-established industrial firms, 1947-1953. **Methodology:** • In-depth interviews with managers who were responsible for setting their dividend policy. • Regression model to describe the dividend change behaviour. **Model and findings:** Change in dividends = α + (speed of adjustment coefficient) x (target dividend* − actual previous year's dividend) + u $R^2 = 85\%$ *Target dividend = the target payout ratio x the current year's earnings after tax.	Managers tend to make; (i) stabilize dividends and sustainable increases whenever possible, (ii) dividend smoothing with establishing an appropriate target payout ratio to avoid frequent and spectacular changes in the short run, (iii) avoiding dividend cuts unless adverse circumstances are likely to persist. Also, the level of current earnings and the pattern of lagged dividends are the most important factors on dividend policy.
Darling (1957)	Testing modifications of Lintner's partial adjustment model.	**Data sample:** • US, an annual data set of all manufacturing firms for the period 1921-1954 with the years 1936-1938 omitted. • US, quarterly data on common stock dividends of 125 large industrial firms from first quarter 1930 to second quarter 1955 with the years 1936-1938 omitted. **Methodology:** Multiple-regression. **Model and findings:** Regression measures for dividend functions: • All manufacturing firms, annual data, 1921-1954 (1936-1938 excluded). I. Dividends = 763 + 0.134 net income[**] + 0.122 lagged income[**] + 0.288 amortisation[*] − 0.0094 change in sales[***] ► Adjusted R = 0.975 II. Dividends = 288 + 0.148 net income[**] + 0.619 lagged dividends[*] + 0.05 amortisation[*] − 0.047 change in sales[***] ► Adjusted R = 0.989 • 125 large industrial firms, quarterly data, 1930-1955, and 1936-1938 excluded I. Dividends = 269 + 0.306 net income[**] + 0.136 lagged income[**] + 0.143 amortisation[**] − 0.0054 change in sales[***] ► Adjusted R = 0.992 II. Dividends = 152 + .322 net income[**] + 0.370 lagged dividends[**] + 0.054 amortisation[**] − 0.0056 change in sales[***] ► Adjusted R = 0.995	• Consistent with the Lintner model; however, dividends are not only influenced by current flows but also by anticipations of future flows. • Based on the certain managerial goals such as maintaining market position, providing adequate manoeuvrability, dispersing stock ownership and based on the budgetary constrains imposed on firms, dividends tend to vary directly with current profits, lagged profits, the rate of amortization recoveries and tend to vary inversely with persistent changes in level of sales.
Fama and Babiak (1968)	Testing the Lintner model using individual firm data instead of using aggregate data.	**Data sample:** US, 392 major industrial firms for the 19 years 1946-1964 **Methodology:** OLS time series regression and simulations. **Model and findings:** • Lintner's partial adjustment model. • Modified versions of Lintner's model; removing the constant and adding the lagged earnings variable into the model. Also, including cash flow and depreciation as other explanatory variables.	• Consistent with the Lintner model; the current earnings, lagged dividends and constant perform well. • However, removing the constant and adding the lagged earnings into the model lead to a slight improvement in the predictive power of the model. • Net income seemed to be a better proxy for profits than either cash flow or net income and depreciation included as different variables in the model.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.2 Studies of the Partial Adjustment Model in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Baker, Farrelly and Edelman (1985)	Investigating the determinants of dividend policy by comparing with Lintner's model and evaluating managers' agreement with Lintner's findings.	**Data sample:** US, 318 usable responses from the NYSE firms during 1983, with a 56.6 % response rate: 114 utilities, 147 manufacturing and 57 wholesaler/retailers. **Methodology:** • Postal survey. • Five-point equal interval scale. • Chi-square difference test.	• Consistent with Lintner's findings; firms tend to avoid changing dividend rates which maybe soon need to be reversed, have a target payout ratio and periodically adjust the payout toward the target. • The importance of factors influencing dividend policy differs based on industry classification. • General agreement from mangers that dividend policy affect share value.
McDonald, Jacquillat and Nussenbaum (1975)	Examining the dividend, investment and financing decisions of French firms by using Lintner's partial adjustment model.	**Data sample:** France, 75 firms in each of seven years, 1962-1968. **Methodology:** OLS and two-stage least squares (2SLS) regressions. **Model and findings:** • Modified versions of Lintner's model by adding investment and financing variables and estimating the models with a cross-sectional specification. • All variables are deflated by firm size, as measured by sales. • Estimated coefficients of earnings and lagged dividends were significant at the 1% level in all years, whereas investment and financing proxies were insignificant in both OLS and 2SLS results.	Consistent with Lintner's findings, the study reveals that dividend decisions of French firms are well-described by earnings and lagged dividends as in the Lintner basic model since investment and financing variables were insignificant in the dividend equation.
Chateau (1979)	Testing Lintner's partial adjustment model by using alternative econometric procedures	**Data sample:** Canada, 40 large manufacturing firms for the period 1947-1970. **Methodology:** OLS, OLS corrected Hildreth-Lu, instrumental variables, quasi-generalised least squares, augmented least squares and maximum likelihood estimator. **Model and findings:** • Lintner's partial adjustment model with and without the constant. • Constant term retention or removal does not seem to affect the econometric fit of the predictive power of the model. Among the estimation procedures, ordinary and augmented least squares seem to provide more reliable estimates for the partial adjustment model.	• Provide support to the partial adjustment model. • Canadian large manufacturing firms follow stable dividend policies. Especially, they are relatively more conservative compared to US firms when it comes to short-term dividend strategies even though they have a higher average payout ratio.
Dewenter and Warther(1998)	Comparing dividend policies of US and Japanese firms to earnings changes by using the Lintner model.	**Data sample:** 313 US firms listed on the S&P 500 and 180 Japanese firms listed on the Morgan Stanley Capital International Index during the period 1983-1992. **Methodology:** OLS regression, Wilcoxon rank-sum test and logit regression. **Model and findings:** • Lintner's partial adjustment model without the constant. • Running the model on US and Japanese samples as well as sub-samples of Japanese firms. • The median speed of adjustment estimates are 0.055 for all US firms, 0.094 for all Japanese firms, and 0.117, 0.082 and 0.021 for keiretsu, hybrid and independent firms respectively.	• The notion of Lintner's speed of adjustment in terms of dividend signalling explanation is supported. • US dividends are smoother than Japanese dividends and Japanese firms cut dividends in response to poor performance more quickly than US firms. • Japanese keiretsu-member firms adjust dividends more quickly than both US and Japanese independent firms since they are subject to less information asymmetry and fewer agency conflicts than US firms.

Table 2.2 Studies of the Partial Adjustment Model in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Baker, Powell and Veit (2002)	Investigating the relationship between dividend policy and share value and four common theories for paying dividends: the signalling, tax-preference, agency cost and bird-in-the-hand theories.	**Data sample:** US, 188 usable responses from cash dividend-paying NASDAQ firms in 1999, with a 29.8 % response rate. **Methodology:** • Postal survey. • Five-point equal interval scale. • T-tests and chi-square difference tests.	• Strongly consistent with Lintner's findings; dividend-paying NASDAQ firms set their dividend policy in line with Lintner's explanation and emphasise dividend continuity. • Optimal dividend policy maximises stock prices. • Strong support for the signalling explanation whereas little or no support for the tax-preference, agency cost and the bird-in-the-hand theories.

Brav, Graham, Harvey and Michaely (2005)	Determining the factors influencing dividend policy and share repurchases decisions at the beginning of 21st century.	**Data Sample:**
		US, (i) 384 usable responses from US firms in 2002, with a 16 % response rate. Also, separately conducted 23 in-depth interviews. (ii) A sample of US firms matched to the survey respondents for three distinct sub-periods for regression tests; 89 firms in the first sub-period of 1950-1964, 244 firms in the second period 1965-1983, and 233 firms in the third time-interval of 1984-2002.
		Methodology:
		• Postal survey.
		• In-depth interviews.
		• Five-point interval scale and t-tests.
		• Regression tests.
		Model and findings:
		Regression-based evidence by using Lintner's the partial adjustment model.
		    • Results for the matched sample for the chosen sub-periods.
		
		                1950-1964 (N=89) 1964-1983 (N=244) 1984-2002 (N=233)
		The median of:
		Speed of adjustment 0.74 0.39 0.37
		Target payout 0.35 0.29 0.21
		Adjusted R^2 0.64 0.40 0.32
		
		    • Results for all Compustat firms with valid data for the chosen sub-periods.
		                1950-1964 (N=513) 1964-1983 (N=1705) 1984-2002 (N=1856)
		The median of:
		Speed of adjustment 0.66 0.35 0.22
		Target payout 0.35 0.24 0.11
		Adjusted R^2 0.56 0.37 0.30
			• Consistent with Lintner's findings. Especially, indicating that dividend policy is conservative; hence, managers are reluctant to cut dividends and the current level of dividend payments is taken as given unless adverse circumstances are likely to persist.
			
			• Results indicated two important changes regarding Lintner's findings. First, firms target the dividend payout ratio less than they used to, and they do not correct their target ratio as fast as they used to (in other words, more smoothing through time). Second, managers favour share repurchases, which are now an important way of payout and provides greater flexibility, compared to dividend payments. Hence, this is one of the main reasons why repurchases have increased.

Table 2.3 Studies of the Information Content of Dividends Hypothesis in Developed Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results

Aharony and Swary (1980)	Investigating whether quarterly dividend announcements provide information beyond that already provided by quarterly earnings numbers.	**Data sample:**
		US, 149 NYSE industrial firms during 1963-1976, including 2,612 quarterly dividend announcements that follow and 782 that precede quarterly earnings announcements.
		Methodology:
		• Dividing the sample into sub-groups by using the dividend expectation model.
		• Estimating the daily average (AR) and cumulative daily average (CAR) abnormal returns of securities in twenty days surrounding the dividend announcement days.
		• Mean comparison t-tests.
		Model and findings:
		• Most of the statistically significant abnormal returns occurred during the dividend declaration date (AD-1) and the dividend announcement date (AD); in other words, two days excess return.
		• <u>Two-day excess returns:</u>
		When earnings announcements precede or follow dividends
		   - For dividend increases: +0.72 %and +1.03 percent, respectively.
		   - For dividend decreases: -3.76 and -2.82 percent, respectively.
			• Capital market reacts to dividend announcement as strongly in line with the information content of dividends hypothesis.
			
			• Changes in quarterly cash dividends do convey information about future prospect of a firm, beyond that already provided by quarterly earnings numbers.
			
			• Market reactions to dividend decreases are much greater in magnitude than dividend increases.

Healy and Palepu (1988)	Examining whether dividend policy changes, particularly initiations and omissions, convey information about future earnings.	**Data sample:** US, 131 NYSE/AMEX firms that initiated dividends and 172 NYSE/AMEX firms that omited dividends during the period 1969-1980. **Methodology:** • t-test of mean abnormal returns for the period 60 days prior to 20 days after the announcements of dividend initiations and omissions. • t-test and Wilcoxon test of mean and median earnings changes for the 5 years before, the year of and 4 years after the dividend policy changes. • Cross-sectional regressions. **Model and findings:** • The mean two-day announcements return (days -1 and 0) for the initiation firm is +3.9 percent and for the omitting firm is -9.5 percent, both significant at the 1 % level. • Initiating firms have positive earnings changes for up to 5 years before and in the year of the dividend announcements, whereas omitting firms have negative earnings changes for up to 2 years before and in the year of the dividend event. • Standardised earnings change $= \alpha + \beta_1$the market-adjusted two-day announcement return $+ \beta_2$ prior earnings change $+ \beta_3$ cumulative market-adjusted return from day following earnings announcement for year -1 to 2 days before the dividend announcements.	• Consistent with the hypothesis that dividend initiations and omissions appear to convey incremental information about firm's future performance. • Significant earnings changes for as many as 5 years prior to dividend initiations, whereas significant earnings decreases for 2 years prior to dividend omissions. • Dividend initiating firms have earnings increases for the year of and 2 years following initiation events and these increases tend to be permanent. Dividend omitting firms have earnings decreases for 2 years prior and in the year of the announcements. Then they experience a recovery in following years.

Table 2.3 Studies of the Information Content of Dividends Hypothesis in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Michaely, Thaler and Womack (1995)	Investigating both the short-term and long-term effects of dividend initiation and omission announcements.	**Data sample:** US, 561 cash dividend initiations and 887 cash dividend omissions of NYSE/AMEX firms over a 25-year period, 1964-1988. **Methodology:** Mean comparison t-tests. **Model and findings:** • Short-run reactions: For the initiation sample: Average excess return in the prior year is 15.1% and during the three-day (from the day before the event to the day after) announcement period, the initiating firms experience a significant additional excess return of 3.4%. For the omitting sample: Average excess return in the prior year is -31.8% and during the three-day announcement period, omitting firms experience a significant additional excess return of -7.0%. • Long-term reactions: For the initiation sample: The first year excess return following the announcements is 7.5% and the following three-year excess return is 24.8%. For the omitting sample: The first year excess return following the announcements is -11% and the following three-year excess return is -15.3%.	• Consistent with Healy and Palepu's (1988) findings that dividend initiations and omissions signal information about firm's future performance. • Omission announcements are associated with a mean price drop of about 7%, while initiations are associated with a mean price increase of about 3% in the short-run. Further, regarding long-term drifts following the dividend events, the omissions involved with negative excess returns, whereas initiations involved with positive excess returns. Also, these drift patterns seem consistent through time as the study examines these events over the 25-year period.
Benartzi, Michaely and Thaler (1997)	Testing whether changes in dividends signal information about the pattern of future earnings.	**Data sample:** US, 1,025 NYSE/AMEX firms with 7,186 firm-year observations during 1979-1991. **Methodology:** • Categorical analysis: The sample divided into 7 groups according to changes in dividends and then unexpected earnings changes of each group were compared for up to two years from the year of dividend change announcements. • Two tailed t-tests. **Model and findings:** The study findings showed a strong relationship between dividend changes and earning changes in a given year (year 0). However, regarding the following years of the dividend change announcements, none of the dividend increasing groups had significantly faster earnings growth than the no-change group, nor does the largest increase group grew faster than the smallest dividend increasing group. Dividend decreasing firms presented even more bizarre earnings in following years as they were significantly positive and much greater those of the no-change firms.	• Inconsistent with the hypothesis that dividend changes have information about the future earnings changes. • Instead, the study results suggest that there is a strong past and current link between earnings and dividend changes.

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Jensen and Johnson (1995)	Examining dividend drop announcements in order to assess real motivation for the dividend decreases by studying firm-specific financial characteristics both before and after the dividend drop announcements.	**Data sample:** US, 268 observations of 218 decreases and 50 omissions (by at least 20% in magnitude) from 242 different NYSE/AMEX firms during the period of 1974-1989. **Methodology:** • Changes in firm-specific financial data in the three years before, the year of and two years following a dividend decline were analysed. • 21 financial variables were examined for each firm and these variables were grouped into 6 major categories: performance, cost structure, financial condition, financing, restructuring and discretionary. • The median values for each variable was examined over the 6-year period relative to itself (unadjusted) and relative to its industry (adjusted). • Graphical representations and Wilcoxon signed ranks test were employed. **Model and findings:** • The results spotted a decline in earnings before the dividend drop and an increase afterwards. Stock prices showed a similar pattern but the rebound in stock prices after the dividend drop was not significant. • Dividend cuts lead to improvement in liquidity position and to reduction in the levels of debt. Also, dividend decreasing firms tend to sell more fixed-assets, purchase fewer fixed-assets, spend less on R&D and reduce employees at a faster pace to sort out their lingering financial problems.	The evidence was in line with the view that dividend drop announcements do not necessarily signal a decline in earnings. In other words, inconsistent with the information content hypothesis of dividends. Rather, these dividend cuts tend to signal the beginning of restructuring activities and a turn around in financial decline.
Akhigbe and Madura (1996)	Investigating the dividend signalling hypothesis for the long-term performance of corporations following dividend initiation and omission announcements.	**Data sample:** US, 128 dividend initiations and 299 dividend omissions during the period 1972-1990. **Methodology:** • t-tests to examine the significance of average monthly abnormal price returns following dividend announcements from month t+1 to month t+36 for both initiations and omissions. • Cross-sectional regression by using weighted least squares. **Model and findings:** • Dividend initiations: Long term abnormal return = 1.0069 + 0.1078 magnitude of dividend change − 0.0872 size[**] − 0.1213 Tobin's Q [**] − 2.6820 return on assets[*] ▶ Adjusted R^2 = 0.142 • Dividend omissions: Long term abnormal return = − 0.067 − 0.029 magnitude of dividend change[**] − 0.0355size[**] − 0.0221 Tobin's Q − 0.0531 return on assets ▶ Adjusted R^2 = 0.084	Firms experience favourable long-term share price performance after dividend initiations. However, firms omitting dividends experience unfavourable long-term price performance. Cross-sectional analyses indicate that the long-term valuation effects resulting from dividend initiations are more favourable for firms that smaller and overinvested, and those had relatively poor performance prior to the initiations. The long-term valuation effects resulting from dividend omissions are more unfavourable for larger firms and for relatively large dividend omissions.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.3 Studies of the Information Content of Dividends Hypothesis in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
DeAngelo, DeAngelo and Skinner (1996)	Investigating whether firms use dividends to signal their views of future earnings prospects by focusing on firms whose annual earnings suddenly declined after a long term of a stable growth.	**Data sample:** US, 145 NYSE firms having decline in annual earnings during the period 1980-1987 after a steady earnings growth over at least nine or more years, including 99 of them increasing dividends, 44 no-change and 2 reducing dividends. **Methodology:** • Mean comparison t-tests and Wilcoxon tests. • The random walk and growth-adjustment models to estimate abnormal future earnings. • Cross-sectional regression. **Model and findings:** • Both parametric and non-parametric tests showed no indication of positive earnings surprises for dividend-increasing firms. The random walk estimates suggested that firms-increasing dividends had earnings in year 1 to 3 that did not differ significantly from year 0 earnings. The growth-adjusted estimates showed dividend increasing firms even had reliably negative earnings surprises in the following years. • Abnormal future earnings = $\alpha + \beta_1$past earnings growth rate $+ \beta_2$current earnings $+ \beta_3$ lagged earnings $+ \beta_4$extraordinary items $+ \beta_5$discounted operations $+ \beta_6$special items $+ \beta_7$dividend signal $+ \grave{e}$ ► Dividend signal variable was measured in 4 different ways and based on the different specifications of this variable, 4 regressions were run. However, in all regressions, the coefficients of dividend signalling variables were close to zero and not significant.	• Inconsistent with the information content hypothesis. Dividend increases are not a reliable indicator for improved future earnings performance. • Emphasising two possible ways to explain inconsistent findings on dividend signalling: 1. Managers may suffer from behaviour bias as they tend to convey over-optimistic signals naively or deliberately. 2. The cash commitments to dividend increases are relatively small. Thus, the small amount of the incremental cash payout conveys misleading signals.
Lipson, Maquieira and Megginson (1998)	Examining whether dividend initiations are associated with favourable subsequent earnings surprises by using the methodology of DeAngelo *et al.* (1996).	**Data sample:** US, 99 newly public firms those initiating dividends and a matched sample of non-initiating firms as well as 99 size-matched firms those are already paying dividends in the same industry during the period 1980-1986. **Methodology:** • Comparison analysis by using Wilcoxon test. • The random walk, the growth-adjustment and the growth-in-sales models to estimate abnormal earnings returns. • Comparing dividend commitment of initiating firms with the corresponding resource commitment of non-initiating firms if they were to introduce similar dividends. **Model and findings:** • Earnings surprises are more favourable for the dividend initiating firms. • Cash dividend payments of the initiating firms were, on average, about 5% of earnings. If non-initiating firms paid similar dividends as initiating firms, their cash dividend payments would be 8.5% of earnings, which was also larger than the 3.5% level of dividend increase as a percentage of earnings found by DeAngelo *et al* (1996).	• Consistent with the dividend signalling hypothesis that dividend-initiating firms use dividends to distinguish themselves from other newly listed public firms in the same industry and in contrast with DeAngelo *et al.* (1996). • If non-initiating firms were to pay dividends at the same level of dividends as initiating firms, they would have paid higher dividends, which suggesting that firms do not initiate dividends until they believe those dividends can be sustained by future earnings.

Table 2.4 Studies of the Cost Minimisation Model in Developed Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Rozeff (1982)	Developing and testing the cost minimisation model of dividends.	**Data sample:** US, 1000 firms over a seven-year period 1974-1980, including 64 different industries. **Methodology:** Ordinary least squares (OLS) cross sectional regression. **Model and findings:** • Payout ratio = 47.81 − 0.09 Percentage of stock owned by insiders − 0.321 Average past growth rate of revenues − 0.526 forecasted average growth rate of revenues − 26.543 Firm's beta + 2.584 Log of number of common stockholders. • All coefficients are statistically significant. • Adjusted R^2 = 48%	Consistent with the agency cost perspective of dividend policy and the cost minimisation model. Optimal dividend payments have the benefit of reducing equity agency costs as well as balancing against an increase in transaction costs.
Lloyd, Jahera and Page (1985)	Expanding the cost minimisation model by including size as an explanatory variable and testing if the model still holds credibility.	**Data sample:** US, 957 firms in 1984. **Methodology:** OLS cross sectional regression. **Model and findings:** • Payout ratio = 0.52 − 0.093 residuals from regression of percentage of insider stock ownership on size − 0.564 past growth − 0.216 forecasted growth − 0.184 beta + 0.025 residuals from regression of log number of common stockholders on size + 0.016 log of sales. • All coefficients are statistically significant at least at the 5% level. • Adjusted R^2 = 31%	Agency cost variables in the original model could be proxies for the omitted variables size since larger firms tend to have lower insider ownership and higher numbers of common shareholders. Hence, after having included a size variable in the model and controlling for the multicollinearity, results showed support for the cost minimisation model and for the significance of size.
Schooley and Barney (1994)	Examining whether dividends and CEO stock ownership are substitute mechanisms to reduce agency cost by using a variant of the cost minimisation model.	**Data sample:** US, 235 industrial firms in 1980. **Methodology:** OLS cross sectional regression. **Model and findings:** • Dividend yield = 0.10657 − 0.18055 expected growth*** − 0.03302 past growth** − 0.04843 beta*** + 0.05519 log of common stockholders*** − 0.00149 CEO ownership*** + 0.00005 squared CEO ownership** • Adjusted R^2 = 49.8%	Consistent with the cost minimisation model of dividends. However, the relationship between dividends and insider ownership is parabolic, rather than monotonic as reported in the original model. Also, the critical entrenchment level was found in the region of 14.9 %, where the coefficient of CEO ownership changes from negative to positive.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Moh'd, Perry and Rimbey (1995)	Testing a dynamic modification of the cost minimisation model.	**Data sample:** US, 341 firms over 18 years from 1972 to 1989. **Methodology:** Panel data and time-series cross sectional analysis by using weighted least squares. **Model and findings:** • Payout ratio = 13.533 + 0.465 lagged payout ratio[***] + 0.013 past growth − 0.473 forecasted growth[***] + 0.310 size (log of sales) − 1.868 intrinsic business risk[***] − 16.266 operating leverage risk[***] − 12.492 financial leverage risk[***] + 0.036 institutional ownership[**] − 0.054 insider ownership[***] + 1.140 log of common stockholders[***] • $R^2 = 33.8\%$	Consistent with the cost minimisation model and concluding that firms try to minimise sum of agency costs and transaction costs towards an optimum level of dividend payout but this relationship holds through time as well as across firms.
Farinha (2003)	Testing the agency cost explanation for the cross sectional distribution of dividend policies by performing a modified version of the cost minimisation model and by looking at the managerial entrenchment hypothesis.	**Data sample:** UK, 693 firms in 1991 and 609 firms in 1996 for two 5-year periods 1987-1991 and 1992-1996. **Methodology:** OLS cross sectional regression. **Model and findings:** • For 1991: Payout ratio = 0.6509 − 0.0053 insider stock ownership[***] + 0.0001 squared insider stock ownership[***] − 0.1439 past growth[***] + 0.0038 forecasted growth − 0.0006 debt − 0.0014 volatility of stock[**] − 0.0005 cash + 0.0197 incorporate tax[**] + 0.0008 common shareholders + 0.0002 institutional ownership + 0.0421 external directors holdings + 0.0069 log of analysts − 0.0198 size[**] − 0.0114 return on assets[***] ▶ Adjusted $R^2 = 33.39\%$ • For 1996: Payout ratio = 0.7282 − 0.0036 insider stock ownership[**] + 0.0001 squared insider stock ownership[***] − 0.0804 past growth[**] + 0.0107 forecasted growth − 0.0003 debt − 0.0036 volatility of stock[***] + 0.0007 cash + 0.008 incorporate tax + 0.00012 common shareholders[**] + 0.0012 institutional ownership[**]− 0.0373 external directors holdings + 0.0351 log of analysts[**] − 0.0383 size[***] − 0.011 return on assets[***] + 0.0399 Cadbury compliance[**] ▶ Adjusted $R^2 = 43.91\%$	Consistent with managerial entrenchment hypothesis, strong evidence found that there is a U-shaped relationship between dividends and insider holdings in the UK. After a critical entrenchment level of insider ownership estimated in the region of 30%, the coefficient of insider ownership becomes positive from negative.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.5 Studies of the Capital Market Monitoring Hypothesis in Developed Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results

Crutchley and Hansen (1989)	Testing whether dividend policy acting as a monitoring vehicle and investigating the substitution effects between dividends and other two controlling devices; managerial ownership and leverage.	**Data sample:**
		US, 603 industrial firms for the period 1981-1985.
		Methodology:
		OLS cross sectional regression.
		Model and findings:
		• OWNERSHIP = − 0.007 + 0.167 stock diversification[***] + 0.388 earnings volatility[***] + 0.456 floatation costs[***] − 0.058 advertising and R&D − 0.015 size[***]
		  ► Adjusted R^2 = 8%
		
		• LEVERAGE = 0.160 − 0.846 stock diversification[***] − 1.848 earnings volatility[***] + 3.151 floatation costs[***] − 0.875 advertising and R&D[***] + 0.021 size[**]
		  ► Adjusted R^2 = 36%
		
		• DIVIDEND = 0.076 − 0.035 stock diversification[***] + 0.034 earnings volatility[*] - 0.442 floatation costs[***] − 0.037 advertising and R&D[***] + 0.004 size[***]
		  ► Adjusted R^2 = 46%
			• Consistent with the concept that managers use a combination of policies including dividends policy, leverage policy and managerial ownership incentives in terms of monitoring and controlling the agency costs in the most efficient way.
			
			• The mix of policies is jointly determined by the impact of five firm's specific characteristics, which are stock diversification, earning volatility, floatation costs, advertising and R&D expenses and firm size.

Born and Rimbey (1993)	Examining the relation between prior financing activity and the market response to initial dividend announcements	**Data sample:** US, 490 firms that initiated or resumed a cash dividend policy from 1962 to 1989; 388 of which non-financed and 102 of which financed prior to dividend announcements. **Methodology:** Mean comparison t-test and cross sectional regression analyses. **Model and findings:** • Cumulative abnormal returns (CAR) during the 61 trading-days surrounding dividend announcement, by using comparison t-test: Event periods: (-25 to -2) (-1 to 0) (+1 to +25) Non-financing sample (N=388): 1.405% 3.299%[***] -0.883% Financing sample (N=102): 2.585% 1.585%[***] 12.16% • Regression results: Financing sample: Price reaction = − 0.08 + 2.80 Dividend yield[***] ► Adj. R^2 = 20.17% Non-financing sample: Price reaction = 0.015 + 1.745 Dividend yield[***] ► Adj. R^2 = 24.35%	Consistent with Easterbrook's (1984) agency cost hypothesis of dividends, suggesting that firms that simultaneously raising capital and increasing their dividend payments increase more value than firms that just increase their dividends due to monitoring issues. Since the results provided supports for this conclusion, financing firms enjoy a higher return per unit of dividend yield than non-financing firms.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.5 Studies of the Capital Market Monitoring Hypothesis in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results

Hansen, Kumar and Shome (1994)	Testing the relevance of monitoring hypothesis for explaining the dividend policies of regulated electric utilities.	**Data sample:**
		• US, all S&P 400 industrial firms during two 5-year periods; 1981-1985 and 1986-1990 for comparison analysis.
		• US, 81 electric utility firms from 1981 to 1985 and 70 electric utility firms from 1986-1990 for regression analysis.
		Methodology:
		Mean comparison t-test, panel data and OLS cross sectional regression.
		Model and findings:
		• Comparison analysis of mean payout ratios:
		
		Period Electric utility firms S&P industrial firms Difference
		1981-1985 66.25% 36.16% 30.09%***
		1986-1990 69.56% 33.77% 35.79%***
		
		• Regression results:
		For 1981-1985 (N=81):
		   Payout ratio = 99.95 – 1.24 regulatory commission rank** – 0.73 insider ownership*** – 3.60 floatation costs*** – 0.49 growth rate**
		   ► Adjusted R^2= 25%
		
		For 1981-1985 (N=70):
		   Payout ratio = 104.36 – 2.30 regulatory commission rank*** – 0.48 insider ownership*** – 1.05 floatation costs* – 0.55 growth rate***
		   ► Adjusted R^2= 26%
			• Consistent with the monitoring hypothesis that regulated utility firms use dividend-induced equity financing to control equity agency cost.
			
			• Regulated utilities pay larger proportion of dividends than non-regulated industrials in terms of being more capital intensive, thereby increasing the likelihood of dividend-induced equity financing.
			
			• The dividend policies of regulated utility firms are highly influenced by the degree of conflicts with managers and regulators as well as floatation costs and growth opportunities.

Noronha, Shome and Morgan (1996)	Investigating the monitoring rationale for dividends and whether the dividends and capital structure decisions are dependent on the growth and non-dividend mechanisms for controlling agency conflicts.	**Data sample:**
		US, 341 industrial firms during the period 1986-1988, consisted of sub-sample A: 131 firms with non-dividend agency controlling mechanisms and/or high growth-induced. Sub-sample B: 210 firms with low non-dividend control mechanisms and low growth-induced.
		Methodology:
		OLS cross sectional regression.
		Model and findings:
		• Subsample A: Payout ratio = 0.935 – 0.527 insider holdings – 0.068 log of shareholders + 0.026 variance of stock returns + 0.065 size – 0.005 growth**
		   ► Adjusted R^2= 20%
		• Subsample B: Payout ratio = 0.292 – 0.312 insider holdings** + 0.039 log of shareholders** – 0.331 variance of stock returns + 0.016 size** – 0.003 growth**
		   ► Adjusted R^2= 49%.
			Consistent with monitoring hypothesis and simultaneity between capital structure and dividend decisions are dependent on particular firm characteristics. Firms with alternative mechanisms and high growth, the pay out of these firms are not related to proxies for agency cost variables. Whereas firms with low alternative non-dividend devices and low growth, dividend decisions are made regarding to Easterbrook's monitoring rationale.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results

Lang and Litzenberger (1989)	Testing the validity of the extended form of Jensen's free cash flow hypothesis, so called *the overinvestment hypothesis*.	**Data sample:**
		US, 429 substantial dividend change announcements (more than 10% in magnitude) during the period 1979-1984.
		Methodology:
		Event study and mean comparison t-test analyses – comparing the average daily returns on dividend announcements day for firms with Tobin's $Q < 1$ and >1. Further, the sample is divided into dividend increase and decrease announcements.
		Model and findings:
		• Average daily returns on dividend change announcements days:
		
		          $Q > 1$ $Q < 1$ $(Q < 1) - (Q > 1)$
		Average returns 0.003^{**} 0.011^{***} 0.008^{***}
		• Average daily returns on dividend increase and decrease announcement days:
		
		         Increases Decreases Difference
		$Q > 1$ 0.003^{**} -0.003 0.000
		$Q < 1$ 0.008^{***} 0.027^{***} 0.019^{***}
		$(Q < 1) - (Q > 1)$ 0.005^{***} -0.024^{**}
			• Average reaction to substantial dividend changes is almost four times stronger for overinvesting firms compared with value-maximising firms. This is consistent with the overinvestment/free cash flow hypothesis, but also with signalling theory.
			
			• Further analysis showed that average reaction to substantial dividend decreases is insignificant for high Tobin's Q firms, whereas it is significant for low Tobin's Q firms. Therefore, this evidence is consistent with the overinvestment hypothesis but inconsistent with signalling theory.

Howe, He and Kao (1992)	Testing whether Jensen's (1986) free cash flow hypothesis is valid for explaining a broader set of cash transactions, namely share repurchases and specially designated dividends (SDDs), by following Lang and Litzenberger's approach	**Data sample:** US, 55 share-repurchases and 60 specially designated dividends announcements during 1979-1989. Then the sample is divided into firms with Tobin's $Q < 1$ and > 1. **Methodology:** Event study, comparison t-test analysis and cross sectional regressions. **Model and findings:** • Mean access returns based on two-day risk-adjusted returns: Announcements Low Q firms High Q firms Difference Share repurchases 7.64% 7.17% No significant difference Special dividends 2.84% 3.97% No significant difference • Cross sectional regression results: Share repurchases: Low Q firms: Two-day abnormal return = 0.0597 + 0.340 cash flow ► Adjusted R^2 = 2.96% High Q firms: Two-day abnormal return = 0.1024 – 0.3307 cash flow ► Adjusted R^2 = 6.98% Specially designated dividends: Low Q firms: Two-day abnormal return = 0.025 + 0.0389 cash flow ► Adjusted R^2 = 2.30% High Q firms: Two-day abnormal return = 0.052 + 0.0505 cash flow ► Adjusted R^2 = 2.20%	Inconsistent with Lang and Litzenberger's (1989) overinvestment hypothesis since there is no statistically significant difference in announcements effects across samples of high Q firms and low Q ratio firms. Further, several separate cross sectional regression results showed that Jensen's free cash flow hypothesis does not hold explaining for excess returns for repurchase and special dividends announcements since the coefficient of cash flow was found insignificant in all regressions.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.6 Studies of the Free Cash Flow Hypothesis in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Agrawal and Jayaraman (1994)	Examining whether dividends reduce the opportunity for managers to use free cash flows and investigating the interactions of dividend policy, leverage and managerial ownership.	**Data sample:** US, 71 industry-sized matched pairs of all-equity and levered firms during 1979-1983. **Methodology:** Comparison analyses by using two-tailed t-tests and Wilcoxon signed-ranks, and OLS regressions. **Model and findings:** Comparison analyses for payout ratio and dividend yield for all-equity and levered firms: _Mean_ — All-equity, Levered, t-statistic; _Median_ — All-equity, Levered, Wilcoxon probability Dividend per share: 0.325 0.188 3.20[***] 0.318 0.167 0.001[***] Dividend yield: 0.038 0.030 1.31 0.036 0.021 0.020[**] OLS cross sectional regression results: • Payout ratio = 0.501 – 0.300 leverage[***] – 0.004 managerial holdings[***] + 0.003 managerial holdings x leverage[*] – 0.302 free cash flow – 0.072 growth ▶ Adjusted R^2 = 17% • Dividend yield = 0.056 – 0.028 leverage[***] – 0.0004 managerial holdings[***] + 0.0003 managerial holdings x leverage – 0.016 free cash flow – 0.013 growth ▶ Adjusted R^2 = 11%	• Consistent with the hypothesis that dividends act as substitutes for debt to reduce the agency cost of free cash flows. • In line with the hypothesis that dividends and managerial stock ownership serve as alternative devices to reduce the possible corruption related to the free cash flow in all-equity firms.
Johnson (1995)	Investigating whether dividends and debt are substitute devices in order to reduce agency cost of free cash flow by examining share prices responses to announcements of straight debt issues of high and low dividend payout firms to spot the systematic differences between these two type of firms.	**Data sample:** US, 129 straight debt offerings from the AMEX/NYSE industrial firms in the period 1977-1983. The sample is divided into low/high payout firms and further divided into high/low growth firms. **Methodology:** Event study, comparison analysis and weighted least squares regressions. **Model and findings:** Event study results: _Low Dividend_ _High Dividend_ _Difference_ Average two-day excess returns (in % terms) 0.78%[*] - 0.18% 0.96%[**] Weighted least squares regression results: • All firms (N=129) : Two-day excess return = 0.0093 – 0.0299 payout ratio[***] ▶Adj. R^2 = 5.06% • Low growth firms (N=64): Two-day excess return = 0.0164 – 0.0416 payout ratio[**] ▶Adj. R^2 = 1.245% • High growth firms (N=65): Two-day excess return = – 0.0018 + 0.0145 payout ratio ▶Adj. R^2 = - 1.26%	. • Consistent with the hypothesis that debt and dividends are substitutes in order to reduce agency cost of free cash flows. • The results support that the substitution effect between debt and dividends are only significant for low growth firms; hence, in line with Jensen's (1986) argument that low growth firms are likely to have greater agency cost problems of free cash flows.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.7 Studies of the Shareholders-Bondholders Conflict in Developed Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results

Woolridge (1983)	Analysing the effects of unexpected dividends changes on the values of common stock, preferred stock and straight bonds with regard to the wealth transfer and information content hypotheses.	**Data sample:**
		US, 317 positive and 50 negative unexpected dividend changes of NYSE firms from 1971 to 1977.
		Methodology:
		Event study, Comparison Period Return Approach (CPRA) and t-tests.
		Model and findings:
		Mean daily returns (MDRs):
		• For unexpected dividend increases:
		
		    Common stock (n=317) Preferred stock (n=125) Straight bonds (n=248)
		Observation period 0.66% 0.56% 0.10%
		Comparison period 0.07% 0.27% 0.00%
		Difference (t-statistic) 7.71[**] 4.49 [**] 1.36 [*]
		
		• For unexpected dividend decreases:
		    Common stock (n=50) Preferred stock (n=26) Straight bonds (n=45)
		Observation period -2.38% -0.38% -0.66%
		Comparison period 0.01% 0.05% -0.11%
		Difference (t-statistic) -9.19 [**] -0.95 -2.53[**]
			Positive (negative) dividend change announcements produce positive (negative) common stock returns; hence, this is consistent with both signalling and wealth transfer hypothesis. Further, unexpected dividend increases (decreases) are associated with positive (negative) straight debt and preferred stock returns. Overall, these results present that signalling is the predominant effect influencing security prices around dividend change announcements. However, the wealth transfer hypothesis cannot still be ruled out completely.

Jayaraman and Shastri (1988)	Testing the wealth transfer and the signalling hypotheses by examining the valuation impacts of specially designated dividends (SDDs) announcements on stock and bonds prices.	**Data sample:**
		US, Stock sample: 2,023 SDD announcements of 660 NYSE/AMEX firms from 1962 to 1982.
		  Bond sample: 154 straight bonds of 63 NYSE/AMEX firms from 1962 to 1982.
		Methodology:
		Event study, Central Limit Theorem.
		Model and findings:
		• Daily average excess returns of stocks for the three days around SDD announcements:
		Sample Event days Average Excess Return (%)
		Full Stock Sample (n=2,023) -1, 0, +1 1.629[**]
		Stock sample Corresponding to
		Bond sample (n=150) -1, 0, +1 1.517[**]
		
		• Daily average excess premium returns of bond around SDD announcements
		           -1 - 0.022 (Not significant)
		Full Bond Sample (n=154) 0 - 0.020 (Not significant)
		           +1 - 0.017 (Not significant)
			Stock price reactions to SDDs are positive and significant; hence, this is consistent with both the signalling and wealth transfer hypothesis. However, further analysis reveals that bond prices remain unaffected by SDDs announcements. Consequently, these results suggest the signalling hypothesis is the predominant effect and provide no support for the wealth transfer hypothesis.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.7 Studies of the Shareholders-Bondholders Conflict of Agency Cost in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Dhillon and Johnson (1994)	Testing stock and bond price reactions to dividend changes in an effort to examine the wealth transfer and the signalling hypotheses.	**Data sample:** US, 131 dividend change announcements, including 61 increases and 70 decreases from NYSE/AMEX firms during the period 1970-1987. **Methodology:** Event study, the mean-adjusted returns methodology, comparison t-test. **Model and findings:** Standardised daily mean excess two-day returns: • For dividend increases 	Sample:	Stocks	Bonds	Sample size
1. Total sample	0.98**	-0.37	61
1a. Initiations	0.28	-0.49	15
1b. Large increases (>30%)	1.21**	-0.33	46	 • For dividend decreases 	2. Total sample	-2.01**	0.69**	70
2a. Omissions	-1.09**	0.84	19
2b. Large decreases (>30%)	-2.70**	0.81**	43
2c. Small decreases	-0.54	-0.01	8		The study results provide supports for the wealth transfer hypothesis over the information content hypothesis since the findings showed that bond price reactions to announcements of large dividend changes are opposite to the stock price reactions. However, the evidence cannot rule out the information content hypothesis completely.
Long, Malitz and Sefcik (1994)	Investigating whether firms attempt to expropriate bondholders' wealth by focusing on the underinvestment problem and the use of dividend policy to expropriate lenders' wealth.	**Data sample:** US, 141 straight debt and 78 convertible debt issues of NYSE firms from 1964 to 1977. **Methodology:** Event study, comparison t-test. **Model and findings:** • Average proportion of firms that increase and decrease dividends following debt issue. _Years after Issue_ 		Year1	Year2	Year3	Year4	Average
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Straight debt (n=141)					
Percentage of increases	56.0%	49.6%	59.6%	57.4%	55.7%
Percentage of decreases	7.1%	11.3%	9.2%	11.3%	9.8%
Convertible debt (n=78)					
Percentage of increases	44.2%	44.2%	36.4%	41.6%	41.6%
Percentage of decreases	12.8%	20.8%	18.2%	18.2%	17.5%
t-statistic, differences of % of increases	1.67*	0.76	3.28***	2.23**	1.99**
t-statistic, differences of % of decreases	1.39	1.89*	1.93*	1.4	1.65* | • Average proportion of firms that increase and decrease dividends following debt issue. |	Straight debt (n=141)	Convertible (n=78)	Market (n=2,200)
Average percentage of increases	55.7%	41.6%	48.2%
t-statistic on difference with market	1.73*	-1.14	
Average number of decreases	9.8%	17.5%	11.0%
t-statistic on difference with market	-0.44	1.78*			First, the results provided little support for the wealth transfer hypothesis but further analysis of the dividend growth rates of firms issuing debt comparing with the benchmark NYSE index, showed that no systematic differences in dividend growth rates between the two samples or the benchmark NYSE. Therefore, these findings suggest no evidence that firms manipulate dividend policy to expropriate wealth from new bondholders to shareholders. Despite dividends do increase following the issue of debt, the increases are in line with the market as a whole in terms of both timing and relative magnitude.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.8 Studies of the Dividend Yield and Risk-Adjusted Return in Developed Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Black and Sholes (1974)	Examining the effect of dividend yield on the risk-adjusted returns before and after taxes.	**Data sample:** US, 25 investment portfolios from common stocks listed on the NYSE over the period 1936-1966. **Methodology:** Cross-sectional and pooled time-series regressions. **Model and findings:** • A modified version of Brennan's (1970) CAPM model by adding a dividend payout term. • A long-run estimate of dividend yield was employed. • Portfolio method (grouped data) was used. ►Results showed that the dividend yield coefficient was *not significantly* different from zero either for the entire time period or for any of the ten-year sub-periods. In other words, the expected returns on high-yield dividend stocks were not significantly different than the expected returns on low-yielded stocks either before or after taxes, other things being equal.	• Inconsistent with Brennan's (1970) after-tax CAPM model, stating that there is no evidence of tax effect on dividends. • Provided support for *the tax clientele hypothesis*, suggesting that investors should ignore dividends when shaping their portfolios.
Litzenberger and Ramaswamy (1979)	Examining the effect of dividend yield on the risk-adjusted expected returns during both the ex-months and the non ex-months.	**Data sample:** US, all common NYSE stocks from 1936 to 1977. **Methodology:** Cross-sectional regression; OLS, GLE and MLE. **Model and findings:** • An extended Brennan's (1970) CAPM model. • A monthly dividend yield definition was employed instead of long-run definition. • Individual data was used instead of grouped data. ►Results revealed that the dividend yield coefficient was *positive* and *statistically significant*. Hence, the dividend yield coefficient of 0.236 indicated that for every unit of increase in dividend yield requires about an extra 23 percent in before tax expected returns.	• There is a strong positive correlation between before tax expected returns and dividend yields of common stocks, and the positive dividend yield coefficient is the evidence of a dividend tax effect. • Consistent with Brennan's (1970) after-tax CAPM model, stating that investors dislike cash dividends and require compensation to receive them.
Miller and Scholes (1982)	Re-examining Litzenberger and Ramaswamy's (1979) study by attempting to correct for the possible information bias.	**Data sample:** US, all common NYSE stocks from 1940 to 1978. **Methodology:** Cross-sectional and time-series regressions. **Model and findings:** • Litzenberger and Ramaswamy's (1979) tests. • A possible information-bias free dividend yield definition was employed. • Individual data was used instead of grouped data. ► Results showed that the dividend yield coefficient was *insignificant*.	Inconsistent with the tax effect hypothesis and they also argued that Litzenberger and Ramaswamy's findings related to information effect, rather than the tax effect.

Table 2.8 Studies of the Relationship between Dividend Yield and Risk-Adjusted Return in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Litzenberger and Ramaswamy (1982)	Re-examining Litzenberger and Ramaswamy's (1979) study by using an information-free expected short-term dividend yield.	**Data sample:** US, all common NYSE stocks from 1936 to 1977 but this time, the sample contained only stocks those declared dividends in *month t-1* and distributed in *month t*, or stocks those delivered dividends in *month t-1* and thus were not likely to pay dividends again in *month t*. **Methodology:** Cross-sectional regression; OLS, GLS and MLE. **Model and findings:** • An extended Brennan's (1970) CAPM model. • An information-free expected short-term dividend yield. • Individual data was used instead of grouped data. ► After using information-free sample and short-term dividend yield, results still showed a *significant* and *positive* dividend yield coefficient.	Results still provided evidence that strongly supports the tax-effect hypothesis.
Blume (1980)	Re-examining the relationship between dividend policy and total returns on a risk-adjusted basis by extending the Black and Scholes (1974) experiment.	**Data sample:** US, all common NYSE stocks from 1936 to 1976. **Methodology:** Cross-sectional regression, mean square error criterion. **Model and findings:** • The Black and Scholes (1974) experiment. • A quarterly dividend yield definition was employed. • Portfolio method was used. ► Results showed a *positive* and *significant* relation, on average, between the quarterly realised rate of returns and both the beta coefficient and the anticipated quarterly dividend yields. However, the significance of the dividend yield varied over time. ► Most strikingly, over the entire period examined, the average quarterly returns on non-dividend paying stocks for a given beta exceeded the quarterly returns on most dividend-paying stocks.	Consistent with the tax effect hypothesis since results revealed a positive and significant dividend yield coefficient. Nevertheless, the significance of the dividend yield variable varied over time and also the returns on non-dividend paying stocks tended to exceed, on average, the returns of most dividend paying stocks over 41 years to 1976, which is totally *inconsistent* with the tax effect hypothesis. Therefore, it is concluded that the relation across stocks is far too complicated to be entirely explained by tax effect.
Poterba and Summers (1984)	Investigating the relationship between dividends and stock price movements through different tax regimes.	**Data sample:** UK, 3,500 British companies for a 26-year period during the period 1955-1981. **Methodology:** GLS regression. **Model and findings:** • The after-tax CAPM described by Litzenberger and Ramaswamy (1979). • Using monthly data. • Using different tax regimes, Regime I: No capital gains tax Regime II: Introduction of capital gains tax Regime III: Introduction of imputation system for dividends ► Results showed that the estimated tax penalty on dividends declined from 74 to 45 percent between Regime II and Regime III, while the evidence on changes between Regime I and Regime II was less clear.	Despite the estimated tax rates were so high due to information effects or the possibility of miscalculating of risk, the findings suggested the importance of taxes in determining the relationship between dividend yields and stock returns. Consistent with the tax effect hypothesis; the valuation of dividends changes across tax regimes provided strong evidence that taxes explain part of the positive relationship between yields and stock market returns.

Table 2.8 Studies of the Relationship between Dividend Yield and Risk-Adjusted Return in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Keim (1985)	Investigating the relationship between stock returns and long-run dividend yields by using CAPM.	**Data sample:** US, a sample range from 429 NYSE firms in Jan 1931 to 1,289 NYSE firms in Dec 1978. **Methodology:** Cross-sectional and time-series regressions. **Model and findings:** • The CAPM model. • A long-run dividend yield definition was employed. • Portfolio method was used. ► The average returns of the dividend yield portfolios were non-linearly related with average yields. Further, an inverse relationship was found between positive yield and firm size. ► Much of the relation between yields and stock returns was due to a significant non-linear relation between dividend yields and returns in the month of January (seasonality).	Results showed evidence of a yield-tax effect but because of the significant effect of the month of January, in other words the effect of seasonality, on the relation between dividend yield and stock returns, these results were *not entirely consistent* with the tax effect hypothesis.
Kalay and Michaely (2000)	Performing the Litzenberger and Ramaswamy (1979) experiment by using weekly data	**Data sample:** US, all common NYSE stocks that had a data for at least 260 weeks during the period 1962-1986. **Methodology:** OLS, GLS and MLE. **Model and findings:** 1. Litzenberger and Ramaswamy's (1979) tests by using weekly data. 2. Litzenberger and Ramaswamy's tests by using weekly data but with a long-run definition of dividend yield. ► Using weekly data, the Litzenberger and Ramaswamy experiment resulted in a significant and positive dividend yield coefficient but with a long-run definition of yield, the results showed an insignificant coefficient, which was the evidence of time-series return-variation.	• Results indicated that stocks experience only time-series return variations and did not find cross-sectional return variations, meaning that the long-run risk adjusted returns are not related with dividend yield. Therefore, the findings are *inconsistent* with Brennan's and Litzenberger and Ramaswamy's models. • However, the results are not completely inconsistent with the tax hypothesis and it could be that these empirical findings are in some ways related to a more complex tax effect theory, which is yet to be developed.

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Elton and Gruber (1970)	Investigating the relationship between marginal tax rates of the marginal shareholders and dividends by examining the ex-dividend share price behaviour.	**Data sample:** US, 4,148 observations from the NYSE shares that paid dividends between April 1, 1966 and March 31, 1967. **Methodology:** Event study around the ex-dividend days, Central Limit Theorem, Spearman's Rank test. **Model and findings:** • $(P_X - P_Z) / D = (1- t_D)/(1- t_C)$; the ratio of price change on ex-days to nominal dividend amount should reflect the marginal tax rates of marginal shareholders. • Ranking the sample based on the dividend yield from lowest to highest into 10 deciles as well as calculating the implied tax brackets associated with each decile, hypothesising that there is a negative relationship between investors' tax brackets and dividend yield. • Repeating the same procedure based on the payout ratio. ► Results showed that the ex-dividend price drop was smaller than the dividend per share. ► The average share price decline was 77.67% and the marginal tax bracket for the average shareholders was 36.4%. ► The implied tax brackets were significantly and negatively related to the dividend yield.	• Consistent with the tax effect hypothesis that shareholders in a higher tax brackets have a *tax-induced preference* for capital gains over dividend income comparing to those in lower tax brackets. • Consistent with the tax clientele effect as well, suggesting that a change in dividend policy could cause a costly change in shareholders wealth, rather than dividend policy itself. .
Kalay (1982a)	Re-examining the documented empirical evidence of the ex-dividend day behaviour of stock prices in terms of the short-term trading hypothesis.	**Data sample:** US, a sample of NYSE firms of 2,540 cash dividends paid between April 1, 1966 and March 31, 1967. **Methodology:** Event study, Spearman Rank Correlation. **Model and findings:** • $(P_X - P_Z)/D =1$; the arbitrage would ensure that the price drop is equal to dividend in the absence of risk and transaction costs. However, transaction costs are unavoidable for the arbitrager's trade, then $(P_X - P_Z)/D$ will take any value within the bounds that are implied by arbitragers, which would range around 1. • In the presence of short-term traders, in other words arbitragers, the marginal tax rates of the shareholders cannot be inferred by observing ex-dividend price drops - $(P_X - P_Z)/D$. ► Results showed that lower ex-dividend day price drop than the dividend per share and higher relative drop for high-yield stocks, suggesting that an ex-day share price drop less than the dividend per share provides profit opportunities for the short-term traders.	• The marginal tax rates of shareholders cannot be inferred, in general, from the relative price drop. Hence, this evidence was *not necessarily consistent* with the tax effect or the tax clientele effect. • Nevertheless, the evidence was still consistent with the hypothesis that, on average, the investors involving the trading population pay higher taxes on dividends rather than on capital gains. This evidence captures the effects of both *the short-term traders* and *the tax rates of the trading population*.
Michaely (1991)	Analysing the behaviour of share prices around ex-dividend days through a change in the tax law.	**Data sample:** US, all firms listed on NYSE, which paid dividends during the period 1986-1989, containing 4,306 events in 1986; 4,499 events in 1987; 4,785 events in 1988 and 4,799 events in 1989. **Methodology:** Event study, OLS and Fisher sign tests. **Model and findings:** • By using OLS market model, then mean ex-day premiums for the 50 days surrounding the ex-day (-25 to +25) for 1986, 1987, 1988 and 1989 were calculated. • A change in the tax law, namely 1986 TRA in the US that significantly reduced the difference between the taxes of realised capital gains and dividend income, was used to test the tax related hypotheses by comparing the premiums before and after the implementation of the 1986 TRA. • The sample further was divided into deciles from lowest to highest according to dividend yield and premiums were estimated for 1986 and 87 by using OLS market model. ► The mean ex-dividend day premiums were insignificantly different from each other for before and after the implementation of 1986 TRA.	• The tax law change, which reduced the tax difference between capital gains and dividend income and then entirely eliminated the differential, had no effect on the ex-dividend share price behaviour. Therefore, results were *inconsistent* with the tax effect and the long-term trading hypothesis. • On the other hand, results supported that the activity of *short-term traders* and corporate traders dominates the price setting on the ex-day.

Table 2.9 Studies of the Ex-Dividend Day Share Price Behaviour in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Koski and Scruggs (1998)	Investigating whether short-term trading reduces or eliminates the tax effect on ex-dividend day prices by analysing trading volume around ex-dividend days.	**Data sample:** US, 70 ex-dividend day observations between Nov, 1990 and Jan, 1991 of NYSE stocks. **Methodology:** Event study, t-test and OLS regression. **Model and findings:** • The abnormal trading volume around ex-days were calculated on an event window of 11 days centred on the ex-dividend date ($-5 < t < +5$). • $SAV = \beta_0 + \beta_1 Yield + \beta_2 Spread$ Where, SAV is the standardised abnormal trading volume on the last cum-dividend day and is defined as actual volume minus the average volume during normal trading period, standardised by the standard deviation of the normal trading volume. Yield is the dividend yield where the price is the mean of closing prices for share *i* over days -10 to -6 relative to ex-dividend Day 0. Spread is the proxy for transaction costs and is estimated as the average of spreads for all bid and ask quotes for share *i* on the cum-dividend day. ►Results of t-tests showed strong evidence that tax neutral security dealers execute in short-positions dividend capture strategy to profit around ex-days. ► SAV (Purchases) = 1.281 + 75.955 Yield** - 66.523 Spread** SAV (Sales) = 1.296 + 70.596 Yield* - 64.504 Spread** ► Regression results showed that abnormal trading volumes around ex-days, for both buy and sell, is positively related to dividend yield and negatively related to transaction costs.	Consistent with the *short-term trading hypothesis*; tax-neutral dealers engage in short-term trading for arbitrage profits, which eliminates and is *inconsistent* with the tax clientele hypothesis around ex-dividend days.
Kaplanis (1986)	Examining share price behaviour around ex-days in the presence of tax effect by estimating directly the *expected* fall-off implied in the prices of options as opposed to the *actual* share price fall-off.	**Data sample:** UK, 360 pairs of cum and ex-dividend closing offer prices of options written on 14 different British firms from the LSE during 1979-1984 as well as the simultaneous underlying offer prices. **Methodology:** Event study, OLS, GLS and MLE. **Model and findings:** • First, the implied expected fall-off was estimated by using cum and ex-dividend prices. • Then, the sample was ranked according to dividend yield and put into 3 groups from lowest to highest to test if the fall-offs vary monotonically with the dividend yield. • Lastly, the actual market adjusted fall-offs and the estimates of the expected fall-offs were compared. ► The results showed that the expected implicit fall-off around ex-dividend days in option prices was about 55% of the dividend and significantly different from it. Also, the fall-off had a significant and positive correlation with the dividend yield and the actual price drop was very similar to the implied decline from option prices.	. • Since the average expected proportionate fall-off was significantly lower than unity and showed a positive relationship with the dividend yield, the results were *consistent* with the tax clientele hypothesis and *inconsistent* with the short-term trading hypothesis. • Thus, the usual assumption made in valuing options on dividend paying shares, that the decline is equal to the dividend, is not realistic and would cause downward-biased estimates of the option value.

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 2.9 Studies of the Ex-Dividend Day Share Price Behaviour in Developed Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Lasfer (1995)	Investigating share price behaviour around the ex-dividend days before and after the implementation of the 1988 ICTA that decreased considerably the tax differential between capital gains and dividend income in the UK.	**Data sample:** UK, a total of 10,123 observations from British firms with 2,891 events in the pre-1988 and 7,232 events occurred in the post-1988 during the period April 6, 1985 – April 5, 1994. **Methodology:** Event study, t-test, Mann Whitney test and OLS regression. **Model and findings:** • Ex-day returns were computed using the market model over the event window (-10, +10) relative to ex-days. • To test for the potential short-term trading effects, the estimated ex-day returns were regressed on the corresponding bid-ask and trading volume, which were both used as a proxy for transaction costs. ►Results showed that in the pre-1988 period, ex-day returns were positive and significant, whereas in the post-1988 period, ex-day returns were, in most cases, negative and insignificant. ►Also, ex-day returns were significantly related to dividend yield and to the length of the settlement period but they were not influenced by the commonly used measures of transaction costs such as the bid-ask spread and trading volume.	• Consistent with the tax effect hypothesis, suggesting that taxation significantly affects ex-dividend day share price behaviour in the UK. • Unlike the US market, ex-day returns were not affected by short-term trading; thus, *inconsistent* with the short-term trading hypothesis. It might be that either the institutional legislation was effective or the UK market was efficient, and ex-day returns and the tax credit were not high enough to outweigh transaction costs.
Bell and Jenkinson (2002)	Analysing the behaviour of share prices around ex-days before and after the Finance Act 1997, which was structured in such a way that immediate impact fell almost entirely on the largest investor class in the UK, namely pension funds.	**Data sample:** UK, 9,673 ex-dividend day observations from 1,478 firms listed on the LSE during 30 days before and after July 2, 1997. **Methodology:** Event study, OLS regression. **Model and findings:** • Elton and Gruber (1970) model was used to examine ex-day price behaviour. • Estimated share price drop-off ratios before and after the Finance Act 1997 were compared to test the tax hypothesis. • Tests for the tax clientele hypothesis involved with comparing drop-off ratios to dividend yield. ►Before 1997, the results showed that the average drop-off ratios ranged from 0.84 to 1.16 depending on the sample and measurement method. Also, strong clientele effects were found since drop-off ratios were positively related to dividend yields. ►After 1997, the results showed significant changes in drop-off ratios, especially high yield firms. Drop-off ratios were found to be reduced on average by 13 to 18 percent depending on the firm size.	. The study results provided strong evidence supporting the tax clientele hypothesis and were *consistent* with the tax effect hypothesis that taxation significantly influences the valuation of dividend income.

Table 2.10 Studies of the Partial Adjustment Model in Developing Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Mookerjee (1992)	Testing the Lintner model of firm's dividend behaviour and modifications of the model on Indian sample.	**Data sample:** India, the aggregate corporate sector in India over the period 1950-1981. **Methodology:** OLS. **Model and findings:** • Lintner's partial adjustment model. • Modified versions of Lintner's model by adding external finance as an explanatory variable and removing the constant. Further, including lagged earnings and lagged external finance as other explanatory variables. • Significant explanatory variables with the signs as hypothesised by the model and an *Adjusted R^2* value of 61% were reported. Also, a significantly positive external finance coefficient was found.	The basic Lintner model tends to explain the dividend behaviour in India well and the model is able to explain 61% of the variations in dividend payments. However, inclusion of the external finance as an additional independent variable improves the explanatory power of the model. This evidence suggests that Indian firms may use external finance to augment dividend payout rates.
Adaoglu (2000)	Examining the dividend policy decisions of Turkish companies by using the Lintner model.	**Data sample:** Turkey, 76 industrial and commercial firms listed on the Istanbul Stock Exchange, 1985-1997. **Methodology:** Panel data; pooled OLS, fixed effects and random effects regressions. **Model and findings:** • Lintner's partial adjustment model. • Employed dividend per share as the dependent variable instead of aggregate dividends. • Significant and positive constant and earnings, whereas insignificant lagged dividends. • Speed of adjustment = 1.00, target payout ratio = 0.517 and Adjusted R^2 = 89.4%. • Random effects model is found to be the most appropriate estimation.	Significant differences between Turkish firms and the developed market firms' dividend policies since the ISE firms follow unstable dividends policy unlike their counterparts in developed markets. The main factor determines the cash dividend payments is the current earnings in a given year. Any variability in the earnings of the firm is directly reflected in the level of cash dividends.
Pandey (2001)	Studying the dividend behaviour of Malaysian firms by examining (1) the industry effect, (2) earnings change and (3) stability of dividends using the Lintner model.	**Data sample:** Malaysia, 248 industrial firms listed on the Kuala Lumpur Stock Exchange, 1993-2000. **Methodology:** Panel data; pooled OLS, fixed effects, random effects, and multinomial logit regressions. **Model and findings:** • Lintner's partial adjustment model. • Following Fama and Babiak (1968), dividend and earnings per share are used. • Significant variations in payout ratios of industries are found by Kruskal-Wallis analysis. • Profitable firms pay more dividends and firms experiencing losses tend to omit dividends. • Fixed effects model is found to be the most appropriate estimation.	Lintner model explains the dividend behaviour of Malaysian firms since they rely on both current earnings and past dividends. However, Malaysian firms have lower target payout ratios and higher adjustment factors, indicating low smoothing and less stable dividend payments. Also, different industries have different payouts and profitable firms have higher payouts.

Table 2.10 Studies of the Partial Adjustment Model in Developing Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Aivazian, Booth and Cleary (2003a)	Cross-country comparisons of dividend policy between the largest firms from eight emerging markets and a control sample of US firms.	**Data sample:** The largest firms from eight emerging markets (South Korea, Malaysia, Zimbabwe, India, Thailand, Turkey, Pakistan and Jordan) and 100 US firms over the period, 1980-1990. **Methodology:** Pooled OLS. **Model and findings:** • Lintner's partial adjustment model by following Fama and Babiak's (1968) method; dividend and earnings per share are used. Also, the model was run separately on all observations and only dividend-paying observations for each country. • The Lintner model works remarkably well for the US data with Adj. R^2s around 89-90%; however, the estimates are not as reliable in these emerging markets with much lower Adj. R^2 s ranging from 19.7% for Thailand to 72.5% for Zimbabwe.	The Lintner model still works well for US firms, whereas it does not work very well for emerging market firms. Also, current dividends are much less sensitive to past dividends in these countries. Further, it is more difficult to predict dividend changes for such emerging countries since the quality of cutting dividends are much similar to those increasing dividends. In short, the institutional structures of these developing countries make dividend policy a less practical mechanism.
Al-Najjar (2009)	Investigating the determinants of dividend policy in Jordan as well as examining whether Jordanian firms smooth their dividends by using the Lintner model.	**Data sample:** Jordan, 86 non-financial firms listed on the Amman Stock Exchange, 1994-2003. **Methodology:** Panel data; pooled and panel tobit and logit models, pooled OLS, random and fixed effects regressions. **Model and findings:** • Logit and tobit regressions showed that dividends increase with profitability, growth opportunities, and firm size' increases, and are negatively related to debt ratio, institutional ownership, business risk and assets tangibility. However, assets liquidity has no effect on dividends. • Lintner's model is used but using firm-level (dividend and earnings per share) data. • All variables and constant term are significant and positively related to dividends. • Pooled model is more favourable than panel models. • Target payout ratio and speed of adjustment coefficients are 0.478 and 0.429 respectively (according to the pooled model as it is more favourable).	Dividend policy in Jordan is governed by similar determinants as suggested by the developed markets such as leverage ratio, institutional ownership, profitability, business risk, assets structure, growth rate and firm size. The Lintner model is valid for explaining Jordanian firms' dividend behaviour. Indeed, Jordanian firms have their target payout ratios and they partially slowly adjust dividends to their target - but relatively faster than those in developed markets.
Chemmanur, He, Hu and Liu (2010)	Comparing dividend policies of firms in Hong Kong and the US in order to study dividend smoothing using the Lintner model.	**Data sample:** Hong Kong and US: Industrial and commercial firms listed on the Stock Exchange of Hong Kong and industry-matched US firms listed on the NYSE/AMEX/NASDAQ over the period 1984-2002. **Methodology:** Time series regression. **Model and findings:** • The Lintner model and its variants using both aggregate and firm levels data. • Regression results on aggregate data showed that the Lintner model works well in explaining current dividend payments in both Hong Kong and US markets. • The goodness of fits for both markets are high with Adj. R^2s in the high eighties. • On a firm level basis, the speed of adjustment parameter for US firms is 0.279 and for Hong Kong firms is 0.684.	Lintner model explains dividend behaviour of both Hong Kong and US firms since they rely on both current earnings and past dividends. However, the extent of dividend smoothing by firms in Hong Kong is significantly less than those in the US, which indicates that they adjust their dividends toward a long-term payout ratio much faster than in the US. Hence, compared to the US firms, Hong Kong corporations follow a more flexible dividend policy commensurate with current year earnings.

Table 2.10 Studies of the Partial Adjustment Model in Developing Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Al-Ajmi and Abo Hussain (2011)	Testing the stability of dividend policy in Saudi Arabia using Lintner's (1956) model.	**Data sample:** Saudi Arabia, an unbalanced panel dataset for a sample of 54 firms during the period 1990-2006, totalling 708 firm-year observations. **Methodology:** Fixed effects panel regression. **Model and findings:** • Lintner's (1956) model and several versions of the model by following Fama and Babiak's (1968) method (firm-level data). • Results revealed that, in all of the tested models, the coefficients on both lagged dividends and current earnings are positive and significant. • Basic Lintner model explains 67.8% of variability in dividend payments, evidenced by R^2 value. • The speed of adjustment of Saudi firms is 71% and the implied target payout ratio is 43%.	Consistent with the partial adjustment model purposed by Lintner (1956), that is, current year dividend payments of Saudi firms are functions of current year earnings and lagged dividend levels. Saudi firms have, on average, higher speed of adjustment estimates, which suggests that Saudi firms tend to adopt more flexible dividend policies and they act quickly to increase dividends as well as willing to cut dividends when earnings decline.
Al-Malkawi, Bhatti and Magableh (2014)	Examining dividend smoothing of Omani companies using Lintner's (1956) partial adjustment model.	**Data sample:** Oman, 104 firms listed on the Muscat Stock Market over the period 2001-2010, totalling 936 firm-year observations. **Methodology:** Panel data; pooled tobit model. **Model and findings:** • Lintner's (1956) partial adjustment model using firm-level data. • A modified Lintner model by adding dummy variables to capture the impact of 2008 Global Financial Crisis (GFC) on dividend stability. • The pooled tobit estimation is found to be more superior than random effects panel estimator as evidence by the likelihood Ratio test, which is insignificant (p-value = 1.00) and indicates the panel-level variance is unimportant. Hence, results are obtained using the pooled tobit models. • Results showed that the coefficients of earning per share and lagged dividends per share are both positive and highly significant (at the 1% level). However, although GFC dummies are, as expected, negative, they are not statistically significant. • The speed of adjustment estimate for Omani firms is 0.2572 and target payout ratio is 0.79.	Result provided empirical evidence supporting the validity of Lintner's original findings; Omani firms tend to adjust their dividend payments toward their target payout ratio gradually with, more interestingly, a relatively low speed of adjustment factor (0.2572) compared to other firms in developed and emerging economies. Furthermore, the evidence showed that the 2008 global financial crisis had no significant effect on dividend stability of Omani firms. Consequently, dividend signalling is an important concern since Omani firms attempt to smooth their dividend payment streams and follow stable dividend policies.

Table 2.11 Studies of the Agency Cost Theory in Developing Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
La Porta, Lopez-De-Silanes, Shleifer and Vishny (2000)	Examining the agency approach to dividends on a cross-section sample from 33 different countries around the world by using two alternative agency models of dividends; namely the *outcome model* and *substitute model*.	**Data sample:** 33 different countries around the world from 4,103 firms over the period 1989-1994. **Methodology:** Median comparison tests and country random effects regressions for the cross-section. **Model and findings:** • Dependent variables are dividend-to-cash flow, dividend-to-earnings and dividend-to-sales. • Independent variables are civil/common law country dummy, low/high investor protection dummy, growth sales, tax advantage on retain earnings, the interaction between growth sales and civil law origin, and the interaction between growth sales and low protection. • Common law countries, where investors have better protection, distribute higher dividends. • In common but not in civil law countries, high growth firms make lower payouts. • No tax effect found.	Results showed support to the agency view of dividends, particularly consistent with the outcome agency model of dividends, which suggests that dividends are outcome of effective legal protection of shareholders. Further, firms in countries with better investors' protection have higher payouts and in these countries fast growth firms pay lower dividends. Last, the study indicated no conclusive evidence on the effect of taxes on dividend policies.
Faccio, Lang and Young (2001)	Investigating how dividend behaviour is related to the structure of ownership and control of East Asian firms with a benchmark sample of West European firms.	**Data sample:** 5,897 firms from 5 West European and 9 East Asian countries over the period 1992-1996. **Methodology:** Mean comparison tests and cross-sectional OLS regressions. **Model and findings:** • Dependant variables are dividend/cash flows, dividend/earnings, dividend/sales and dividend/market capitalisations ratios. • Independent variables are group affiliation dummy, controlling shareholders ratio of ownership-to-control rights, the European dummy, growth sales, multiple owners dummy, total debt/net assets, credit-rationing dummy, civil law dummy, the legal reserve variable and natural log of the book value of total assets. • Families are the predominant controlling shareholders in both Asia and Europe. • Results showed that expropriation exists within business groups and there are differences in expropriation between Europe and Asia.	The predominant form of ownership in East Asia is control by a family, which often provides a top manager. In fact, this form is more pronounced in West Europe. Hence, the most salient agency problem is expropriation of outside shareholder by controlling families in both regions. Dividends exhibit evidence on this; group-affiliated firms in Europe pay higher dividends than in Asia, dampening insider expropriation. When multiple large owners exist, dividends are higher in Europe but lower in Asia, suggesting that they dampen expropriation in Europe but exacerbate it in Asia.
Manos (2002)	Investigating the agency theory of dividend policy in the context of an emerging economy, India, by using a modified version of Rozeff's (1982) cost minimisation model.	**Data sample:** India, 661 non-financial firms listed on the Bombay Stock Exchange in 2001. **Methodology:** Cross-sectional OLS, tobit model, Heckman's two step and maximum likelihood procedure. **Model and findings:** • Payout ratio = $\alpha + \beta_1$ growth + β_2 risk + β_3 liquidity + β_4 foreign ownership + β_5 institutional ownership + β_6 insider ownership + β_7 ownership dispersion + β_7 business group interaction term + β_8 group affiliation dummy + β_9 most liquidity dummy + β_{10} less liquidity dummy + β_{11} least liquidity dummy + $\dot{\varepsilon}$ • The transaction cost variables were negatively related, whereas the agency cost variables were generally positively related to the payout ratio. The positive relation for institutional and insider ownership was contrary with the expectations. • Group affiliation appeared to have a significant negative effect on the payout ratio.	Consistent with the cost minimisation model and agency cost theory rationale for dividend policy in the context of an emerging market, India. Further, it is revealed that group affiliation appears to have a significant negative effect on the payout ratios and also has an important influence on the transaction cost structure as well as agency problems experienced by Indian companies.

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Chen, Cheung, Stouraitis and Wong (2005)	Examining whether concentrated family ownership affects firm performance, firm value and dividend policy in Hong Kong.	**Data sample:** Hong Kong, 412 firms listed on the Stock Exchange of Hong Kong during 1995-1998. **Methodology:** Multivariate analyses by using pooled, industry fixed and firm fixed effects models. **Model and findings:** • Dependent variables: ROA, ROE, Tobin's Q, dividend payout ratio and dividend yield. • Independent variables: Family ownership, CEO duality, number of directors, independent directors, audit committee, total assets, sales growth and debt-to-assets. • Results do not show a positive relation between family ownership and performance but little relationship between family ownership and dividend policy for only small firms.	Only for small firms, there is a significant negative relation between payouts and family holdings up to 10% and a positive relation for family ownership between 10 and 35%, suggesting that families in small firms are subject to less scrutiny by investors and may be using dividends to extract resources. Alternatively, results are also consistent with the conjecture that outside investors anticipate potential expropriation by families and demand higher dividends from firms with potentially the largest agency conflict.
Kouki and Guizani (2009)	Studying the agency cost theory explanation of the dividend policy by analysing the influence of shareholder ownership identity on dividends in Tunisia.	**Data sample:** Tunisia, 29 firms listed on the Tunisian Stock Exchange over the period 1995-2001. **Methodology:** Panel data analysis by OLS. **Model and findings:** • Dividend per share = $\alpha + \beta_1$ free cash flow $+ \beta_2$ leverage $+ \beta_3$ Q ratio $+ \beta_4$ size $+ \beta_5$ institutional ownership $+ \beta_6$ state ownership $+ \beta_7$ dummies for ownership concentration $+ \dot{\varepsilon}$ • Free cash flow coefficient is positive and significant at the 1% level in all models, whereas financial leverage is negatively related to dividend per share but only significant in one model at only the 10% level. Q ratio is positive and significant at the 1% level in all models, whereby firm size is negatively related to dividends and significant at the 1% level. The coefficients of institutional and state ownership are negative and significant, whereas ownership concentration is positively and significantly related to dividends.	Ownership structure approach is highly relevant in explaining dividend policy in Tunisia. Institutional ownership and state ownership are both significant and negatively related to dividends. Further, existence of multiple large shareholders and free cash flow are positively related to dividends, whereas firm size has significantly negative effect on the level of dividends. Also, firms with better investment opportunities are likely to pay more dividends, while firms with high leverage tend to pay lower dividends.
Wei, Wu, Li and Chen (2011)	Testing the impact of family control, institutional environment and their interaction on the cash dividend policy of listed firms in China.	**Data sample:** China, 1,486 firms listed on the Chinese A-share market for the period 2004-2008. **Methodology:** Group t-tests, logit and tobit regressions. **Model and findings:** • Dependent variables: Cash dividend dummy, payout ratio and dividend yield. • Independent variables: Family control, institutional environment, firm size, financial leverage, profitability, Tobin's Q, cash, firm age, SOE regulations, year and industry dummies. • Family controlled firms have lower payouts and propensity to pay dividends than non-family firms. • Institutional environment has a significant effect on dividend policy of listed firms, which supports the outcome model of dividends proposed by La Porta *et al.* (2000).	Family firms have lower payouts and lower tendencies to pay dividends than non-family firms. A favourable regional institutional environment has a significant positive effect on the cash dividends and the impact of the regional institutional environment on cash dividends is stronger in family firms than in non-family firms. Also, surprisingly, results showed that families in China tend to intensify Agency Problem I rather than Agency Problem II.

Table 2.11 Studies of the Agency Cost Theory of Dividends in Developing Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Aguenaou, Farooq and Di (2013)	Investigating the effect of ownership structure on dividend policies for Moroccan firms.	**Data sample:** Morocco, firms listed on the Casablanca Stock Exchange during the period 2004-2010, totalling 200 firm-year observations. **Methodology:** Panel data analysis; fixed effects and random effects estimations. **Model and findings:** • Payout ratio = α + β_1 institutional investor dummy + β_2 industrial company dummy + β_3 government dummy + β_4 family dummy + β_5 foreign investor dummy + β_6 size + β_7 leverage + β_8 earnings per share + β_9 year dummies + β_{10} industry dummies + $\dot{\varepsilon}$ • Results showed that two forms of ownership identity, namely family ownership and industrial company ownership, are negatively and significantly influencing the dividend policy of the firms listed on the Casablanca Stock Exchange.	Family ownership negatively influences the level of distributed dividends; as for family ownership is a typical aspect of firms in the Moroccan market, the low dividend payout ratios are justified by high agency problems in family controlled firms. Because, family shareholders increase the cost for firms since their lack of diversification, the hiring of unskilled family members and the abuse of other shareholders' rights, which all may result in poor transparency and absence of accountability. In addition, industrial company ownership also involves with lower dividend payouts, which may imply that industrial company ownership leads to additional monitoring on managerial discretion.
Gonzalez, Guzman, Pombo and Trujillo (2014)	Examining how family involvement influences agency problems between majority and minority shareholders and whether the level and likelihood of dividend payments serve as mitigating mechanisms.	**Data sample:** Colombia, 458 Colombian firms over the period 1996-2006. **Methodology:** Panel random effects probit and classical tobit cross-section regressions. **Model and findings:** • Dependent variables are dividend payout ratio (dividends/total assets) and dividend dummy, which takes the value of 1 if the firm pays dividends, and zero otherwise. • Test variables are family CEO dummy, family ownership dummy, pyramidal family control and majority family board dummy. • Control variables are ROA, $ROA_{(t-1)}$, leverage, $leverage_{(t-1)}$, growth, size, age, group affiliation, group diversification, board size, non-family directors, board turnover, CEO board dummy, auditing firm and contestability index. • Also, year and industry dummies are included. • Results showed that family influence in relation to the level and likelihood of dividend payments differs considerably according to the type of family involvement.	Colombian firms have high ownership concentration, family business groups and low investor protection. Furthermore, the relationship between family influence and dividends varies based on the type of family interaction. Specifically, family involvement in management does not affect dividend policy, whereas family involvement in both ownership and control through pyramidal structures has negative impacts but family involvement in control through disproportionate board representation has positive effect on dividend policies of Colombian companies. Therefore, family influence on agency problems, and hence on dividend policy as a mitigating device, varies depending on family involvement.

Table 2.12 Studies of the Determinants of Dividends in Developing Markets

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Aivazian, Booth and Cleary (2003b)	Examining dividend policy behaviour in different institutional environments; cross-country comparisons from eight emerging markets and a control sample of US firms.	**Data sample:** The largest firms from eight emerging markets (South Korea, Malaysia, Zimbabwe, India, Thailand, Turkey, Pakistan and Jordan) and 99 US firms over the period, 1981-1990. **Methodology:** Pooled OLS. **Model and findings:** • Dependent variable is dividends-to-total assets, whereas independent variables are business risk, size, tangibility of assets, ROE, market-to-book ratio, debt ratio and country dummies. • Dividends are negatively related to debt and positively related to ROE and the market-to-book ratio. Country dummies indicated significant differences exist among countries.	Emerging markets showed dividend behaviour similar to US firms, which are explained by the profitability, debt and market-to-book ratio. Of course, their sensitivity to these variables vary across countries. Also, emerging market firms seemed to be more influenced by assets mix and country factors are as important in dividend policies as in capital structure decisions.
Kirkulak and Kurt (2010)	Examining the dividend payment decisions of publicly listed firms in Turkey	**Data sample:** Turkey, 2,326 firm-year observations of dividend and non-dividend payers and 732 firm-year observations of dividend reductions from the ISE listed firms during the period 1991-2006. **Methodology:** Logit regressions. **Model and findings:** • Dependent variables are the probability of paying dividends and the probability of reducing dividends, whereas independent variables are current net income, lagged net income, liability, growth, year dummies for 1997, 1998, 2001 and 2002. • Earnings are the most important determinant on both dividend and reduction decisions, similarly investment opportunities influences both. However, the debt level has no effect on dividend paying decisions but has a significant effect on dividend reductions. Also, financial crisis had a very clear impact on both.	Firms with large current earnings tend to pay dividends, whereas dividend reductions are associated with low current earnings. The debt level has no effect on dividend decisions but it significantly affects reductions since higher levels of debt lowered dividends. Further, firms with low investment opportunities are more likely to reduce dividends, whereas high investment opportunities increase the dividend payments. Finally, the results showed that the financial crises had a very clear impact on both dividend payment and reduction decisions.
Imran (2011)	Examining the factors that determine the dividend payout decisions in the case of Pakistan's engineering sector.	**Data sample:** Pakistan, 36 engineering firms listed on the Karachi Stock Exchange from 1996 to 2008. **Methodology:** Panel data; pooled OLS, fixed effects and random effects estimations. **Model and finding:** • Dividend per share $= \alpha + \beta_1$ lagged dividend per share $+ \beta_2$ earnings per share $+ \beta_3$ profitability $+ \beta_4$ cash flow $+ \beta_5$ sales growth $+ \beta_6$ firm size $+ \beta_7$ liquidity $+ \dot{\varepsilon}$ • Results indicated that dividend per share is a positive function of previous year's dividend per share, earning per share, profitability, sales growth and firm size, while it has a negative association with cash flow. However, liquidity of the firm has no effect on dividend policy decisions in the case of Pakistani engineering firms.	Firms with higher sales and profitability tend to pay more dividends. Also, larger firms are more willing to increase the dividends. Firms are reluctant to cut their dividends and perform every task to meet or increase the payout ratio from its previous level. The negative association between dividends and cash flow suggests that firms plough back their extra cash. The liquidity of the firm has found unrelated to dividend.

Table 2.12 Studies of the Determinants of Dividends in Developing Markets (continues)

Researcher(s)	Aim of the study	Methodology (data sample and model) and main findings of the study	Hypotheses consistent with results
Mehta (2012)	Investigating the most important factors which affect the dividend payout decisions of the firms in the United Arab Emirates (UAE).	**Data sample:** UAE, 44 non-financial firms listed on the Abu Dhabi Stock Exchange during 2005-2009. **Methodology:** Correlation and backwards multiple linear regression models. **Model and findings:** • Dependent variable is dividend payout ratio, whereas independent variables are profitability, risk, liquidity, leverage and firm size. • Firm size, risk and profitability explained 42% of the total variations in the dividend payout policy; however, profitability is not always significant. Also, liquidity and leverage have no effect on dividends.	Firm size and risk are the most important factors affecting dividend policy in the UAE; larger sized firms pay out more dividends and the higher the firm's price-to-earnings ratio, the lower its risk and the higher is its payout ratio. Further, the study findings indicate that profitability, liquidity and leverage are insignificant in influencing the dividend payout decisions in the UAE.
Kisman (2013)	Examining factors that influence the probability corporate decisions to pay or not to pay dividends in Indonesia.	**Data sample:** Indonesia, 34 firms listed on the Indonesian Stock Exchange over the period, 2005-2011. **Methodology:** Panel data, logit regression models. **Model and findings:** • Probability of paying dividends (0/1) = $\alpha + \beta_1$ profitability + β_2 agency cost (log of the number of common stockholders) + β_3 investment opportunity + β_4 solvency + β_5 size + β_6 liquidity + $\dot{\epsilon}$ • Investment opportunity and solvency are negatively and significantly related at the 1% level, whereas size is positively and significantly correlated at the 1% level with the probability of paying dividends. • Profitability, agency costs and liquidity are not significant at any conventional significance level, hence they are not influential on Indonesian firms' decisions to pay or not pay dividends.	Profitability, agency cost and liquidity have no effect on the probability in paying dividends, suggesting that Indonesian firms are small with low profitability and investment opportunities are high, so even if they are highly liquid, firms retain earnings for investments. Also, agency cost variable is insignificant because these firms are generally controlled by families. Further, investment opportunity, solvency and size seem to have an effect on the probability of paying dividends in Indonesia.

CHAPTER 3

FIRM-SPECIFIC DETERMINANTS OF DIVIDEND POLICY: EVIDENCE FROM TURKEY

3.1 Introduction

This chapter investigates the firm-specific (financial) determinants of dividend policy in the emerging Turkish market, and whether the publicly-listed firms in Turkey follow the same firm-specific determinants of dividend policy as proposed by dividend theories and as suggested by empirical studies in developed markets, since the fiscal year 2003, when Turkey began to implement serious economic and structural reforms for a better working of the market economy, outward-orientation and globalisation, in other words for market integration.

Accordingly, the main contribution of this chapter is that it is the first major research to our knowledge that examines the firm-specific determinants of dividend policy in Turkey, after the economic and structural reforms in 2003. Particularly, the chapter helps in understanding the dividend policy behaviour of an emerging economy (a civil law originated country), which employed the common laws in order to integrate with world markets. In addition, unlike previous studies (Aivazian *et al.*, 2003b; Kirkulak and Kurt, 2010), this chapter provides evidence regarding Turkey in the post 2003 period (as it witnesses serious reforms) from a large-scale dataset that covers a more recent long period of time by considering a more comprehensive empirical model, employing richer regression techniques and using alternative dividend policy measures.

Dividend policy literature contains various theories, hypotheses, and explanations for dividends. Although Miller and Modigliani's (1961) dividend irrelevance theory is logical and consistent, under the circumstances of perfect capital market assumptions, once this idealised world is left and we return to the real markets, where various imperfections exist, this theory becomes highly debatable. Indeed, researchers proposed a range of leading dividend theories involved with the relaxation of M&M's assumptions and dealt with dividends in the presence of the various market imperfections. For instance, the signalling theory (Lintner, 1956; Bhattacharya, 1979; John and Williams, 1985; Miller and Rock, 1985), agency cost theory (Jensen and Meckling, 1976; Rozeff, 1982; Easterbrook, 1984), transaction cost theory (Higgins, 1972; Fama 1974; Rozeff, 1982; Scholz, 1992), tax-related explanations (Brennan, 1970; Elton and Gruber, 1970; Litzenberger and Ramaswamy, 1979), bird-in-the-hand hypothesis (Graham and Dodd, 1951; Gordon and Shapiro, 1956; Gordon, 1959; 1963), pecking order theory (Myers, 1984; Myers and Majluf, 1984), residual dividend theory

(Saxena, 1999; Lease *et al.,* 2000), catering theory (Baker and Wurgler, 2004a; 2004b) and maturity hypothesis (Grullon *et al.*, 2002).

All these leading dividend policy theories are originally formulated, however, based on developed markets. In fact, earlier empirical research on dividend policy, in terms of developing theories and empirical tests, focused mainly on the US market, followed by the UK market. Therefore, less is known about dividend behaviour and the explanatory power of models for other countries, particularly developing (emerging) economies, where market imperfections are the norm rather than expectations and much stronger than in developed countries. Considering the growing importance of emerging markets in terms of global equity investments, these markets have recently started attracting considerable attention from international investors. Accordingly, emerging markets add more to the dividend puzzle, and researchers have started investigating the dividend behaviour of corporations in developing countries (Glen *et al.*, 1995; Adaoglu, 2000).

Even though the empirical studies in developing markets have contributed relatively little evidence compared to developed markets, researchers have nevertheless started examining the dividend policy behaviour in emerging economies, especially over the past two decades. The firm-specific determinants of dividend policy, in the context of developing markets, have been investigated by a number of studies. Aivazian *et al.* (2003b), who are well-known scholars of their research interest in emerging markets, investigated the dividend policy behaviour in eight emerging markets (South Korea, Malaysia, Zimbabwe, India, Thailand, Turkey, Pakistan and Jordan) and concluded that firms in emerging markets somehow follow the same firm-specific determinants (either the same or different signs) of dividend policy that are suggested by the developed markets. Studies from different developing countries such as Al-Najjar (2009), Kirkulak and Kurt (2010), Imran (2011), Mehta (2012) and Kisman (2013) reported evidence supporting this conclusion. However, as Aivazian *et al.* (2003b) stated that due to various differences between developed and developing markets, even among those developing economies, such as financial systems, ownership structures, laws and regulations, their sensitivity to these determinants vary across countries.

Turkey had a very late start in the liberalisation of its economy and the establishment of its stock market, the Istanbul Stock Exchange, whose history only dating back to 1986, in comparison to the developed stock exchanges with hundreds of years of historical development (Adaoglu, 1999; 2000; Aksu and Kosedag, 2006). A number of studies

revealed that Turkey is a civil law country (La Porta *et al.*, 1997), where corporate ownership structure is characterised by highly concentrated family ownership (Gursoy and Aydogan, 1999; Yurtoglu, 2003). It also has a history of poor structural and microeconomic policies, as well as a poor culture of corporate governance and transparency and disclosure practices (IIF, 2005; Aksu and Kosedag, 2006). With the rapid development since the establishment in 1986, the ISE became highly representative of a promising emerging market, with fast growth in terms of the number of listed firms, trading volume, market capitalisation and foreign investment (Adaoglu, 2000), as well as indicating high volatility in returns, especially during the period 1990-2000 (CMB, 2003). During this period, Turkish economy often experienced global effects from a number of geopolitical, financial and economic crises; for instance, by the Gulf War Crisis in 1991, 1997 Asia Crisis, 1998 Russia Crisis and 2000 Argentina Crisis. However, the major financial crisis that strongly affected the ISE was the systemic banking crisis that Turkish economy experienced in 2001 (BRSA, 2010), which resulted in substantial losses for shareholders, especially small Turkish investors who heavily invested in the ISE prior to economic crisis (Adaoglu, 2008).

Having experienced the series of booms and busts during its liberalisation period of its economy, between the late 1980s and the early 2000s, the November 2002 elections resulted in a one-party (in other words non-coalition) government, and the political uncertainty, to some degree, faded away. The new Turkish government 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). Further, 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; Rawdanowicz, 2010).

While examining the dividend policy behaviour in different emerging markets, researchers have not clearly stated or distinguished, as suggested by Bekaert and Harvey (2002), between the concepts of regulatory liberalisation or integration undertaken in those markets for their study sample periods. However, it can be argued that dividend policies of companies may significantly differ based on the process of financial

liberalisation or integration undertaken in the emerging market in which they operate. Accordingly, this doctoral thesis is motivated to carry the dividend debate into an emerging market but in a different way to prior research. It examines the dividend policy behaviour of a particular emerging market that implemented serious economic and structural reforms for the integration with world markets, and attempts to identify what behaviour the dividend policy of this emerging market shows thereafter. In this respect, Turkey and its stock market, the ISE, offer an ideal setting for the purpose of this thesis. It allows a study of the dividend behaviour of an emerging market which implemented major reforms, starting with the fiscal year 2003, in compliance with the IMF stand-by agreement, the EU directives and best-practice international standards for a better working of the economy, outward-orientation and globalisation.

The transparency and disclosure practices of the ISE firms were not impressive. Particularly, the ISE's financial reporting standards (the Turkish Code of Commerce dating back to 1957) were only based on the generally accepted principles of accounting and auditing and the concept of full and fair disclosure (Aksu and Kosedag, 2006). Although Turkey generally enjoyed an economic growth in 1990s, it was overall an economically unstable decade, with the experience of a number of financial crises and high inflation rates that surpassed 100% during the decade. Due to the inconsistent and unclear accounting practices and the absence of inflation accounting standards, the historical financial statements of the ISE firms lost their information value and misinformed investors (Ararat and Ugur, 2003; UNCTAD, 2008). However, the need for a global set of high-quality financial reporting standards has been especially important for developing countries and countries with economies in transition. These countries are eager for external capital, as their economies typically grow faster, so foreign and domestic investors can verify the underlying profitability of the firm and therefore the security of their investment with the help of comparable and consistent financial data (Aivazian *et al.*, 2003a; UNCTAD, 2008).

In this context, the CMB of Turkey attributed great importance to improve communications with investors, issuers and other institutions in 2003, 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 (CMB, 2003). Accordingly, one of the most important developments was that in line with the EU requirements, the CMB issued the Communiqué Serial: XI, No: 25 entitled "Accounting Standards in Capital Markets" in November 2003, adopting

International Financial Reporting Standards (IFRS) and enforcing publicly owned and traded firms to use new rules. In addition, the CMB obliged the implementation of inflation-adjusted accounting at the same time (UNCTAD, 2008). This has resulted in a more transparent and more efficient worldwide financial reporting standards, providing comparable and consistent financial data for foreign and domestic investors, and other institutions. Likewise, the adoption of the IFRS and inflation accounting has given researchers a way better opportunity to study firm-specific characteristics of firms in the Turkish market.

Empirical research, in developing markets, has contributed relatively little evidence compared to empirical evidence conducted in developed markets. A few empirical studies reviewed in Chapter 2 have provided some understanding about the determinants of dividend policy in a number of different emerging markets. It can be observed; however, very little evidence has emerged from a few studies about firm-specific determinants of dividend policy in the emerging Turkish market. These are subjected to the following criticisms. First, even though they reported evidence from eight different emerging markets, Aivazian *et al.* (2003b) stated that their Turkish data includes a limited number of only largest listed companies; therefore, the results regarding Turkish market may be biased due to limited sample selection procedures. Second, Aivazian *et al.* (2003b) covered the period 1980-1990, which maybe considered as relatively old sample period. Kirkulak and Kurt (2010) examined the listed Turkish firms during 1991-2006, which may also imply that the evidence regarding the dividend policy of Turkish market may be outdated, and hence one can suggest that there is a need for evidence from more recent data. Third, Kirkulak and Kurt (2010) considered only a few firm-specific factors (earnings, debt and growth) while examining the determinants of dividend policy in Turkey. Even though Aivazian *et al.* (2003b) employed more variables (profitability, size, debt, risk, tangibility and growth), there are other potentially important firm-specific determinants (such as liquidity, free cash flow and firm age) that may significantly influence the dividend decisions of Turkish firms.

Accordingly, the aim of this chapter is to empirically investigate what firm-specific (financial) determinants affect dividend policy decisions of the ISE firms, over a decade after Turkey implemented major reforms in the fiscal year 2003. More evidence will also be provided regarding this developing economy, by attempting to fill the gaps in the literature as pointed out in the above criticisms. This chapter specifically contributes

to the dividend literature in the following aspects. First, Turkey offers an ideal setting to study the dividend behaviour of an emerging market (a civil law originated country) which employed common laws in order to integrate with world markets. Hence, the chapter examines how the ISE-listed firms are influenced by the firm-specific determinants while setting their dividend policies and whether they follow the same firm-specific determinants of dividend policy as suggested by empirical studies from developed markets after the implementation of major reforms in 2003. Second, it uses a large-scale dataset that covers a more recent long period of time and considers a more comprehensive empirical model by estimating the effects of various financial determinants on dividend policy. Third, it employs richer research methodologies (the pooled and panel logit/probit and tobit regression analyses) and uses alternative dividend policy measures (the probability of paying dividends, dividend payout ratio and dividend yield). Finally, it attempts to answer the following research questions:

1.   What are the most important firm-specific determinants affecting the probability of paying dividends of Turkish firms?

2.   Do Turkish firms follow the same firm-specific determinants of dividend policy as suggested by the developed markets?

3.   Are the pooled logit models more favourable in estimating the probability of paying dividends of Turkish firms, or are the panel logit models more suitable than the pooled models?

4.   Are the firm-specific factors determining the probability of paying dividends and the intensity of paying dividends of Turkish firms different from each other or the same?

5.   Are the tobit regressions results, which are used to estimate the intensity of paying dividends of Turkish firms, consistent with the logit regressions results or significantly different?

6.   Are the pooled tobit models more favourable in estimating the intensity of paying dividends of Turkish firms, or the panel tobit models more suitable than the pooled models?

7.   Do the tobit estimations provide the same or different results when the different measure of dividend policy, which stands for the intensity of paying dividends of Turkish firms, is applied?

8.   Is there any significant industry-effect for Turkish firms when industry dummies are included in the models?

The remainder of this chapter is organised as follows. The following section 3.2 reviews the firm-specific determinants of dividend policy and develops the corresponding research hypotheses. The methodology and data are explained in section 3.3. Section 3.4 presents the empirical results, and section 3.5 summarises the conclusions of this chapter of the thesis.

3.2   Firm-Specific Determinants of Dividend Policy and Research Hypotheses

This section of the chapter reviews the firm-specific determinants of corporate dividend policy, reflecting on various theories and explanations, according to the related dividend literature, which might have also been important factors of dividend policy decisions in the emerging Turkish market. The section further illustrates the corresponding research hypotheses that are developed, based on the selected firm-specific determinants of dividend policy.

3.2.1   Profitability

The dividend policy literature suggests that firm's profitability is one of the most important determinants affecting dividend policy. Since dividends are usually distributed from annual profits, it is argued that profitable firms tend to pay higher amounts of dividends. Therefore, a positive relationship is anticipated between firm's profitability and dividend policy. Bhattacharya (1979), Miller and Rock (1985) and John and Williams (1985) interpreted large dividend payments as signals of future profitability; because, managers have superior information about their firms' expected future profitability than outsiders and if managers are confident about the future prospects of their firms, then they distribute larger cash dividends as good signals for the investors. Furthermore, although Lintner (1956) and Benartzi *et al.* (1997) stated that dividend payments are used to signal current profitability, rather than future

profitability, they reported a positive correlation between profitability and dividends. Consequently, the signalling theory of dividend policy supports the argument that profitable firms pay larger dividends to signal their good financial performance.

In fact, a number of studies conducted from different emerging markets (Aivazian *et al.*, 2003b; Al-Najjar, 2009; Kirkulak and Kurt, 2010 and Imran, 2011) reported evidence that there is a strong positive relationship between profitability and dividend payments. Similarly, this result is also supported by the residual dividend theory, suggesting that more profitable firms have more internally generated funds, and only after all positive NPV investments have been undertaken, they will distribute larger dividends than less profitable firms (Saxena, 1999; Lease et al., 2000). Moreover, Aivazian *et al.* (2003b) stated that high profitability tends to mean high dividend payments and concluded that this evidence also provides strong support for the residual dividend theory. In this respect, considering the context of emerging Turkish market, where asymmetric information is norm rather than expectations, and much stronger than developed markets, it is hypothesised that more profitable Turkish firms pay higher dividends in order to signal their good financial performance. Therefore:

Hypothesis 1: There is a positive relationship between profitability and the dividend payment decisions of Turkish firms.

3.2.2 Investment Opportunities

A firm's funds requirements for investment purposes appear in the literature to influence firms' dividend policy (Higgins, 1972; Fama, 1974). The transaction cost theory suggests that with high growth, there is more need for funds to finance investments; therefore, the more likely the firm is to preserve earnings for investments rather than paying dividends, because external finance is costly. Accordingly, Rozeff (1982) hypothesised that the relationship between anticipated investment opportunities and dividend payout ratio is negative since firms prefer to avoid transaction costs related to external financing. Evidence from various studies (Llyod *et al.*, 1985; Schooley and Barney, 1994; Moh'd *et al.*, 1995) supported this notion that firms distribute lower dividends when they are experiencing higher growth opportunities, because this growth seemingly involves higher investment expenditures. Further, the pecking order theory, proposed by Myers (1984) and Myers and Majluf (1984), argues that firms finance their investment activities according to a hierarchy: first with internal funds, second with debt financing and third with equity issuance. In this context, firms

with high growth opportunities tend to have high leverage (given that investment requires more than the internally generated funds) and these firms should pay out low dividends. Hence, the pecking order theory also predicts a negative relationship between dividend payments and investment opportunities.

The negative relationship between dividends and investment opportunities is partially supported by the overinvestment hypothesis[45] developed by Lang and Litzenberger (1989). According to the overinvestment hypothesis, a dividend payout increase/decrease by a value-maximising (Q>1) firm merely reflects optimal investment decision. However, a substantial increase in dividends by an overinvesting firm (Q<1) is a good indicator since it means smaller amount of cash spent on suboptimal investments. Contrarily, a mirror argument applies to substantial dividend decreases. In this respect, firms' investment opportunities are negatively correlated with dividend payments.

La Porta *et al.* (2000), however, stated that the relationship between dividend policy and investment opportunities may significantly differ in countries with poor shareholders protections. They proposed the *substitute model of dividends*, arguing that in countries with poor shareholders protections, firms have stronger incentives to establish a reputation of good treatment of minority shareholders since they come to the external capital markets for funds, at least occasionally. As a consequence, the need for dividends to establish a reputation is the greatest in such countries, which reduces what is left for expropriation. Accordingly, in this view, firms in weaker protection countries with better investment opportunity prospects also have stronger incentives to establish such reputations; in fact they have a much greater potential need for external finance. Therefore, other things being equal, firms with good investment opportunities should choose higher dividend payments than those with poor investment opportunities. Indeed, Aivazian *et al.* (2003b), Al-Najjar (2009), Kirkulak and Kurt (2010) and Imran (2011) reported a significant positive relationship between investment (growth) opportunities and dividend payments from different developing markets, whereas Kisman (2013) found a significant negative correlation between investment opportunities and dividend policy of Indonesian firms.

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[45] Lang and Litzenberger (1989) employ the Tobin's Q (market-to-book ratio) as a proxy for investment opportunity to distinguish between overinvestment (Q<1) and value-maximising (Q>1) firms. They argue that a firm with a Q ratio which exceeds 1 is a value-maximising firm, because the market value reflects the book value plus the positive NPV of the investment. Using the same rationale, a firm with a Q ratio is less than 1 indicates overinvestment, where the managements of those firms are involved in substantial free cash flows invested in negative NPV projects.

Combining the ideas from the transaction cost theory, pecking order theory, overinvestment hypothesis and substitute model of dividends that contradicts prior explanations and, due to the mixed evidence reported in different emerging markets by a number of studies, the following two competing hypotheses can be formulated:

Hypothesis 2a: *There is a negative relationship between investment opportunities and the dividend payment decisions of Turkish firms.*

Hypothesis 2b: *There is a positive relationship between investment opportunities and the dividend payment decisions of Turkish firms.*

3.2.3   Business Risk

"*The higher the risk is, the more likely the firm will be bankrupt and hence the less the chance for firms to pay dividends*" (Al-Najjar, 2009, p.193). Indeed, the transaction costs are directly related to firm's risk. If a firm has higher operating and financial leverage, other things being equal, the firm's dependence on external financing is increased due to the greater volatility in its earnings (Rozeff, 1982). Both these operating and financial leverages can be translated into a high total risk of the firm's stock returns. High fixed operating costs or business risks tend to affect the firm's dividend payout (Farinha, 2003). According to Holder *et al.* (1998), transaction costs of new issues in the form of under-writing fees are typically much larger for riskier firms. Further, Jensen *et al.* (1992), Manos (2002), Farinha (2003), Al-Najjar (2009) and Mehta (2012) reported a negative relation between business risk and dividend policy, which supports the notion that firms that have higher uncertainty about their earnings tend to distribute none or lower dividends.

Emerging markets are characterised by high volatility and high average returns as evidenced by research on stock returns in these markets. In this respect, the ISE is highly representative of an emerging market since it is a highly volatile market with high returns in some years and considerably big losses in a number of occasions since the date if its establishment, including the sample period, 2003-2012 (CMB, 2003; 2012 and Odabasi *et al.,* 2004). It is therefore hypothesised as below:

Hypothesis 3: There is a negative relationship between business risk and the dividend payment decisions of Turkish firms.

3.2.4 Debt Policy

A firm's debt policy is considered to influence its dividend policy in the related literature. Jensen and Meckling (1979), Jensen (1986) and Crutchley and Hansen (1989), among many others, argued that debt and dividends are alternative mechanisms to control agency costs associated with free cash flow problems, which can be controlled by either issuing debt or distributing large dividends. Since they are alternative devices to fulfil the same purpose, then debt and dividends are conversely related. Moreover, debt implies an increase in both dependency on external financing and in the total risk of the firm's stocks. Therefore, Manos (2002) suggested that debt leads to a dependency on external finance, because debt represents the fixed costs that firms have to repay, then increasing the need for re-financing. A higher level of debt is consequential to a higher level of fees, when external finance is raised. Accordingly, firms with high levels of debt tend to maintain their earnings in order to lower external financing costs, thus lowering its dividends.

Aivazian *et al.* (2003b) reported that higher debt ratios are associated with lower dividend payments in emerging markets, suggesting that financial constrains affect dividend policy. Similarly, Al-Najjar (2009) in Jordan and Kisman (2013) in Indonesia found a significantly negative relationship between firm debt levels and dividend policies. Furthermore, Kirkulak and Kurt (2010) presented evidence that debt level has no effect on the probability of paying dividends, but significantly influences the dividend reductions, since an increased level of debt increases the dividend reductions in Turkey. Therefore:

Hypothesis 4: *There is a negative relationship between debt policy and the dividend payment decisions of Turkish firms.*

3.2.5 Free Cash Flow

Jensen (1986) argues that cash dividend payments help control the agent-principal conflicts (Agency Problem I) by reducing large amount of excess cash, which he calls free cash flow, under managers' discretion, since managers may act in ways not in the shareholders' best interest. Instead of undertaking positive NPV investment projects with this cash, they might overinvest by accepting marginal investment projects with negative NPVs. However, substantial cash dividend payments would, all else being equal, lessen the amount of free cash flow that managers may misuse and also the scope of overinvestment; therefore, increase the market value of the firm. Conversely, a

dividend decrease would result in undertaking more negative NPV projects and decreasing the market value of the firm.

On the other hand, Shleifer and Vishny (1997), La Porta *et al*. (1999; 2000) and Faccio and Lang (2002) argue that families and other types of blockholders potentially decrease Agency Problem I through their better monitoring over managers or direct involvement in managements, then they may make less use of dividends. Nevertheless, this can exacerbate concerning issues involved the principal-principal conflicts (Agency Problem II). When large shareholders gain nearly full control and if they do not distribute profits to all shareholders, then they may pay out cash flows for their own use or invest in unprofitable projects that provide private benefits for themselves (Shleifer and Vishny, 1997). As emphasised by La Porta *et al.* (2000, p.2), "……*failure to disgorge cash leads to its diversion or waste, which is detrimental to outside shareholders' interest*" and they further suggested that dividends can reduce Agency Problem II as they promise a *pro-rata* payout to all shareholders and remote free cash from the *controlling shareholders*.

In both cases, free cash flows are correlated with the high possibility of agency problems, which implies, if it is the case, higher dividend payments in order to overcome these free cash flow problems. Therefore:

Hypothesis 5: There is a positive relationship between free cash flow and the dividend payment decisions of Turkish firms.

3.2.6   Liquidity

Darling (1957) suggested that a firm's liquidity is one of the most important management goals in maintaining financial manoeuvrability of the firm, which is also crucial in determining its dividend policy within the capital budgeting process. Manos (2002) argued that liquidity is an inverse proxy for transaction costs and therefore has a positive impact on the dividend payments. Similarly, Ho (2003) found that more liquid firms, in other words firms with higher cash availability, pay higher dividends than others with insufficient cash availability. In fact, all previously mentioned researchers reported a positive correlation between liquidity and dividend policy. In view of that, higher liquidity indicates positive signals to the market that the firm is able to pay its obligations easily and thus involves lower risk of default (Gupta and Parua, 2012). Although Al-Najjar (2009), Mehta (2012) and Kisman (2013) reported that liquidity of

a firm does not have any effects on its dividend policy, they had predicted that liquidity would have a positive effect on the dividend payments. Therefore:

Hypothesis 6: There is a positive relationship between firm liquidity and the dividend payment decisions of Turkish firms.

3.2.7 Tangibility of Assets

There is evidence provided (Aivazian *et al.*, 2003b; Al-Najjar, 2009) of the role of asset tangibility in setting dividend policies of firms in emerging markets. Aivazian *et al.* (2003, p.381) argued that asset tangibility has an inverse relationship with the dividend payments, especially in developing economies, and they attempted to explain this negative correlation by stating that "*A possible explanation for this is that when the assets are more tangible, fewer short-term assets are available for banks to lend against. This imposes financial constraints on firms operating in more primitive financial systems, where the main source of debt is short-term bank financing.*"

Similarly, Al-Najjar (2009, p.193) also reported a negative relationship between tangibility of assets and dividend policy in the emerging Jordan market and stated that "*…..the more the collateralized assets in the firm, the fewer the short-term assets to be used as collateral for short-term loans. Therefore, firms will rely on their retained earnings, which will reduce the chance to pay dividends.*" Hence:

Hypothesis 7: There is a negative relationship between asset tangibility and the dividend payment decisions of Turkish firms.

3.2.8 Firm Age

A relatively recent explanation of dividends has attempted to link firm age with dividend policy. Grullon *et al.* (2002) proposed an alternative explanation to Jensen's (1986) free cash flow hypothesis, known as *the maturity hypothesis,*[46] which suggests that higher dividend increases are a sign of change in a firm's life cycle, particularly in a firm's transition from growth phase to a more mature phase. Since a firm gets older in

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[46] According to this explanation, in a growth stage a firm typically has many positive NPV projects and it probably earns large economic profits with high level of capital expenditure. Such firms are likely to be left with low free cash flows and experience rapid growth in their earnings. As the firm continues to grow, competitors enter the industry and cannibalize the firm's market share, and eventually reduce the firm's economic profits. In this transition phase, the firm's investment opportunity begins shrinking, its growth becomes slow, capital expenditures decline, and the firm starts generating larger amounts of free cash flows. Ultimately, the firm enters into maturity phase in which the return on investments is close to the cost of capital and free cash flows are high. Consequently, these mature firms are now able to pay higher dividends (Grullon *et al.*, 2002).

terms of age, its investment opportunities decline. This leads to slower growth rates, and therefore, reduces the fund's requirements of capital expenditure. However, mature firms tend to have steady earnings with high excess to external capital markets and they are able to preserve a good level of funds, which allows them to pay higher dividends. Based on the above discussion, the following hypothesis is proposed:

Hypothesis 8: There is a positive relationship between firm age and the dividend payment decisions of Turkish firms.

3.2.9 Firm Size

A firm's size is another factor that anticipates describing firm's dividend policy in dividend literature. This is because firm size can be an important determinant for both agency cost and transaction cost arguments. Lloyd *et al.* (1985) argued that larger firms are likely to have more dispersed ownership structures and, in this context, face higher potential agency costs. Besides, larger firms are more likely to be mature and have easier access to capital markets to raise external finance at lower costs. Hence, the lower transaction costs and higher potential for agency problems, suggest a positive relationship between firm size and dividend payments as a control mechanism. Similarly, Fama and French (2001) observed that growth firms are mostly smaller and are likely to find dividend payments more costly, compared to larger firms. Because, the costs of external finance are likely to be higher for smaller firms, in comparison to larger, well-established firms with much easier access to capital markets. This supports the conclusions that firm size is positively related to dividend payout. This positive relationship is also reported by Gaver and Gaver (1993), Moh'd *et al.* (1995), Redding (1997) and Farinha (2002).

Likewise, Al-Najjar (2009), Imran (2011), Mehta (2012) and Kisman (2013) have all found that firm size is significantly and positively related to the dividend policies of the firms in different developing countries, suggesting that larger firms pay out more dividends, compared to smaller-sized firms in emerging markets. This is consistent with the prior literature. Therefore, the hypothesis regarding the firm size is as follows:

Hypothesis 9: There is a positive relationship between firm size and the dividend payment decisions of Turkish firms.

3.3 Methodology

The following sub-sections describe the methodology used in this chapter of the research. First, the sample data is explained, followed by the variables and the models illustrated, which are employed in order to test the research hypotheses.

3.3.1 Sample Data

The purpose of this chapter is to empirically investigate what firm-specific determinants affect dividend policy decisions of companies after the implementation of major economic and structural reforms, starting with the fiscal year 2003 in the emerging Turkish market. The data sample is therefore drawn from the Istanbul Stock Exchange (ISE) according to the following criteria:

1.   First, all companies listed on the ISE, during the period 2003-2012, are considered. A long panel dataset allows understanding of the determinants of dividend policy in a way that cannot be achieved using cross-sectional data.

2.   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. After these exclusions, a number of all non-financial and non-regulated corporations remain.

3.   Accounting and financial data for this research is obtained from DATASTREAM, whereas companies' incorporation dates are compiled from the annual reports published in the Public Disclosure Platform of the Istanbul Stock Exchange (KAP) (http://kap.gov.tr/en/companies/traded-companies/all-companies.aspx) 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.

The sample selection criteria result in a panel dataset of total 264 non-financial and non-utility companies listed on the ISE during the period 2003-2012, as summarised in Panel A in Table 3.1 below. 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 the

period 2003-2012 are all considered and included in the sample. As illustrated by Panel B in Table 3.1, the listed companies of the ISE 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 every year but rather it increases during the ten-year period from 2003 to 2012, hence this type of panel is called unbalanced panel data.[47]

Panel C in Table 3.1 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.

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[47] The panel data can be a *balanced panel* that it has all its observations, where the variables are observed for each entity and each time period. However, a panel that has some missing values for at least one time period for at least one entity is called an *unbalanced panel* (Stock and Watson, 2003). The methods used in this study can be used with both a balanced and an unbalanced panel data.

Table 3.1 Selection Criteria and Distributions of the Sample across Time and Industries

Panel A illustrates criteria for inclusion in the sample of the ISE listed companies. Panel B illustrates the distribution of the final sample across time during the period of 2003-2012, whereas Panel C illustrates the distribution of the final sample across industries for which relevant data is available from Datastream. ICB code provides Industry Classification Benchmark code for 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	Number of Firms	Years	Number of Firms	Industry	ICB Code	Sample (%)
All firms listed on the ISE 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	264	2009	218	Food & Beverage	3500	11.7
(Excluding financials		2010	226	Personal & Household Goods	3700	18.6
& utilities)		2011	249	Health Care	4500	1.5
		2012	259	Retail	5300	5.7
				Media	5500	2.6
				Travel & Leisure	5700	6.4
				Telecommunications	6500	0.8
				Technology	9500	4.9
				Total		100%
				Number of Firms		264

Table 3.2 on the next page, reports the descriptive statistics for the firm's characteristics for the sampled Turkish companies during the period 2003-2012. In order to prevent the inflation effect over the period, all aggregate variables are measured in real terms and normalised by the consumer price index (CPI) deflator, using 2003 as a base year. The CPI deflator data is taken from the Central Bank of the Republic of Turkey (CBRT) database.

Three measures of firm size are illustrated; sales, total capital and market value (on average for the entire time period, 812.1 million TL, 505.1 million TL and 656.7 million TL respectively), which are all showing an increased pattern with, of course, some fluctuations over the period. Furthermore, net income of the sample increased to 69.7 million TL in 2012 from 33.8 million TL in 2003, whereas cash dividends paid by the sampled firms increased to 27.2 million TL in 2012 from 3.9 million TL in 2003. However, both net income and cash dividends figures show some major fluctuations over the period, as can be observed from the table. When looking at the descriptive statistics of the debt level of the sample, it is observed that Turkish firms make about 25% of debt usage for their capital budgeting on average for the entire time period. The debt level is found to be fluctuated around 20% from 2003 to 2007 but it dramatically rose to 27.2% in 2008, perhaps reflecting the global financial crisis in 2008. It then reached to approximately 30% at the end of the period 2012.

3.3.2   Variables and Models

3.3.2.1 Variable Descriptions

This chapter of the thesis employs two variables to proxy for the dependent variable, namely the *probability* of paying dividends and the *intensity* of paying dividends. The probability of paying dividends is observed as the 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 (the payout level decisions), DPOUT, represents the actual dividend payout ratio made by a firm, which is measured as the dividend per share is divided by the earnings per share, in a given year during the period 2003-2012. The variable takes a positive value if such a firm paid dividends and it takes on a value of zero if the firm did not.

Table 3.2 Firm Characteristics for the Sampled Turkish Companies

Sample includes 264 firms (non-financial and non-utility) listed on the ISE during 2003-2012 for which relevant data is available from Datastream. Sales represent annual gross sales and other operating revenue. Total capital represents the total annual investment in the company that is the sum of common equity, preferred stocks, minority interest, long-term debt, non-equity reserves and deferred tax liability in untaxed reserves. Market value equals the share price multiplied by the number of ordinary shares in issue. Net income represents annual income after all operating and non-operating income and expenses, reserves, income taxes, minority interest and extraordinary items. Cash dividends equal the total annual common and preferred dividends paid in cash to shareholders of the firm. Debt level is measured annually as total debt divided by total assets of a firm. In order to remove the inflation effect, variables are measured in real terms and normalised by the consumer price index (CPI) deflator using 2003 as a base year. The CPI deflator data is taken from the Central Bank of the Republic of Turkey (CBRT) database.

Years	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Overall
Number of Firms	157	164	199	211	214	215	218	226	249	259	264
Sales											
Mean (million TL)	463.4	584.8	567.9	688.1	735.6	895.2	848.8	898.5	1,064.1	1,101.6	812.10
Median (million TL)	112.4	132.7	115.2	127.0	143.0	138.7	139.5	149.8	174.3	171.6	139.84
St. Deviation	1,237.8	1,458.5	1,606.5	1,945.7	2,063.7	2,635.2	2,199.3	2,398.7	3,227.1	3,473.6	2,424.6
Total Capital											
Mean (million TL)	293.7	350.0	334.1	377.0	426.5	519.7	567.6	619.4	672.6	707.1	505.13
Median (million TL)	71.0	101.8	81.1	89.4	108.0	112.0	121.8	136.5	138.2	137.5	106.47
St. Deviation	661.4	738.8	784.0	894.3	1,018.9	1,239.2	1,343.9	1,449.1	1,662.3	1,798.4	1,273.5
Market Value											
Mean (million TL)	434.5	397.2	475.6	493.3	676.3	398.4	727.6	948.5	781.8	991.5	656.68
Median (million TL)	68.5	88.9	105.4	106.8	125.3	57.5	120.9	174.4	136.3	134.9	100.44
St. Deviation	1,389.5	1,157.2	1,284.6	1,349.4	2,313.0	1,534.9	2,188.8	2,503.0	2,285.5	2,765.0	2,028.7
Net Income											
Mean (million TL)	33.84	34.38	30.74	41.99	54.46	38.12	45.88	61.19	46.45	69.70	46.98
Median (million TL)	5.31	5.56	3.25	5.31	7.89	0.56	3.52	4.70	4.54	5.17	4.56
St. Deviation	112.77	103.44	106.10	131.79	166.26	211.62	190.13	217.22	219.89	248.51	184.40
Cash Dividends											
Mean (million TL)	3.90	7.24	13.70	15.48	17.75	31.57	23.53	26.71	25.32	27.10	20.30
Median (million TL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
St. Deviation	17.84	31.09	56.53	55.23	64.44	188.91	129.23	129.01	148.52	132.11	114.11
Debt Level											
Mean	0.234	0.191	0.201	0.216	0.203	0.272	0.260	0.283	0.294	0.297	0.249
Median	0.144	0.119	0.135	0.150	0.121	0.181	0.183	0.183	0.190	0.188	0.159
St. Deviation	0.373	0.311	0.296	0.310	0.279	0.423	0.402	0.761	0.762	0.828	0.542

The following explanatory variables are used in the multivariate analyses of this part of the study. Return on assets, ROA, is adopted to account for the firm's profitability. Following Jensen *et al.* (1992), Fama and French (2001), Farinha (2003), Ferris *et al.* (2006) and Mehta (2013), it is defined as the ratio of net earnings to total assets measured annually in any given year over the period 2003-2012. Further, the proxy employed for the firm's investment opportunities is the firm's market-to-book ratio (M/B), which has often appeared in the literature and used by researchers to reflect investment opportunities of the firm (Lang and Litzenberger, 1989; Fama and French, 2001; Farinha, 2003; Ferris *et al.*, 2006; Aivazian *et al.,* 2003b; Al-Najjar, 2009). Stock returns volatility of the firm (RISK), which is calculated as a mean variance of a firm's weekly stock returns over a year for the period 2003-2012, is used to reflect the business risk of the sampled firms in line with Manos (2002) and Farinha (2003). The variable DEBT, a ratio of total debt to total assets of the firm annually calculated over the period 2003-2012, is included as per Jensen *et al.* (1992), Farinha (2003), Aivazian *et al.* (2003b) and Al-Najjar (2009), to proxy for firms' debt policy. Following arguments by Jensen (1986), Shleifer and Vishny (1997), La Porta *et al.* (1999; 2000) and Faccio and Lang (2002) regarding firms' free cash flows and agency problems associated with them, the variable FCF, which is measured as the ratio of the firm's free cash flow per share for a given year over the period 2003-2012, is implemented.

The variable LIQ, current ratio (Al-Najjar, 2009; Imran, 2011; Gupta and Parua, 2012; Mehta, 2012; Kisman, 2013), measures the firm's liquidity, whether such a firm can easily pay its obligations, and, if so faces a lower risk of default. It is defined as the ratio of the firm's current ratio, in other words the current assets divided by current liabilities, in a given year over the period 2003-2012. Moreover, the tangibility of a firm's assets (TANG) is defined as the fixed assets of a firm divided by its total assets, which is consistent with prior studies (Aivazian *et al.*, 2003b; Ho, 2003 and Al-Najjar, 2009). Firm age, AGE, is adopted in the same manner of studies including Setia-Atmaja *et al.* (2009), Schmid *et al.* (2010) and Wei *et al.* (2011) and is measured as the natural logarithm of the total number of years since the firm's incorporation date, until a given year over the period 2003-2012. Furthermore, firm size proxy, SIZE, is measured as the natural logarithm of the CPI adjusted market capitalisation of the firm in a given year, during the period 2003-2012 (Farinha, 2003; Ho, 2003 and Kisman, 2013).

In addition, 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, stages of the economic cycle, and macroeconomic dynamics, on dividend policy (Chen *et al.,* 2005; Setia-Atmaja *et al.,* 2009; Wei *et al.,* 2011). The importance of industrial classification to the dividend policy has been argued, because firms in different industries may work under different set of regulations and often have different levels of risk and growth potential (Baker *et al.,* 1985 and Moh'd *et al.,* 1995). Considering the sample is drawn from 14 different industries, *industry dummies* (INDUSTRY) are employed to detect whether there is any significant industry effect for Turkish firms. Table 3.3 demonstrates the summary descriptions of the research variables used in the empirical analyses.

Table 3.3 Variables and Definitions

The table shows the research variables, proxy for the dividend policy and determinants of dividend policy, their symbols and definitions used in the multivariate analyses of this chapter of the study.

Variables	Symbols	Definitions
Dependent Variables		
Probability of Paying Dividends	DPAY	A binary variable, which equals to 1 if firm *i* pays dividends at year *t* during the period 2003-2012, and 0 otherwise.
Dividend Payout Ratio	DPOUT	The ratio of dividend per share to earnings per share of firm *i* at year *t* during the period 2003-2012.
Independent Variables		
Return on Assets	ROA	The ratio of net earnings to total assets of firm *i* at year *t* over the period 2003-2012.
Market-to-book Value	M/B	The market-to-book value ratio of firm *i* at year *t* over the period 2003-2012.
Business Risk	RISK	Stock returns volatility, the mean variance of firm *i* at year *t* over the period 2003-2012.
Debt Policy	DEBT	The ratio of total debt to total assets of firm *i* at year *t* over the period 2003-2012.
Free Cash Flow	FCF	Free cash flow per share of firm *i* at year *t* over the period 2003-2012.
Liquidity	LIQ	The current ratio, measured as current assets dividend by current liabilities, of firm *i* at year *t* over the period 2003-2012.
Tangibility of Assets	TANG	The ratio of fixed assets to total assets of firms *i* at year *t* over the period 2003-2012.
Firm Age	AGE	The natural logarithm of the total number of years since the firm *i*'s incorporation date until year *t* over the period 2003-2012.
Firm Size	SIZE	The natural logarithm of the inflation (CPI) adjusted market capitalisation of firm *i* at year *t* over the year 2003-2012.
Time Effect	YEAR	Yearly dummies for the years from 2003 to 2012, which take a value of 1 for the specific year and 0 otherwise.
Industry Effect	INDUSTRY	Industry dummies using 14 different industry classifications of the firms, according to Datastream's Industry Classification Benchmark (ICB) codes.

3.3.2.2 Research Design and Models

The research is aimed to provide an empirical examination on the firm-specific determinants, affecting dividend policy decisions in the emerging Turkish market, by creating a large-scale panel dataset that covers a relatively recent long time period. Accordingly, the research sample contains a panel dataset of 264 non-financial and non-utility companies listed on the ISE over a ten-year period of 2003-2012.

The panel data can be *balanced panel* in that it has all its observations, where the variables are observed for each entity and each time period. However, a panel that has missing values for at least one time period, for at least one entity, is called an *unbalanced panel* (Stock and Watson, 2003). Due to missing observations, because of newly listed and delisted companies, the study sample is not the same for every year during the period 2003-2012, and therefore the study provides an unbalanced panel data set for the relevant period. It should be noted that employing a long panel dataset allows understanding of dividends policy in a way that cannot be achieved using cross-sectional or time-series data.[48]

This chapter uses pooled and panel logit and tobit regressions in its multivariate analyses to test the research hypotheses, constructed from prior literature, regarding firm-specific determinants of dividend policy in Turkey. The nature of the dependent variable defines the appropriate estimation method. Furthermore, *one-year lag values of independent variables* are used in all estimations of this chapter, in order to mitigate the problem of endogeneity. In simultaneous equation models, the endogeneity problem may occur in two ways. First is the reverse causality, which means that the dependent variable (Y) might impact the one or more independent variables (X_k's) instead of

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[48] Panel data may be also called as *pooled data*, pooling of time series and cross-sectional observations, or *longitudinal data,* a study over a time of variable or group of subjects (Hsiao, 1986 and Gujarati, 2003). The analysis of panel data is the focus of the one of the most dynamic and innovative bodies of literature in economies since panel data provide such a rich environment for the development of estimation methods and theoretical results (Greene, 2003).

Baltagi (2002) states the following advantages of using panel data over cross-section or time series data:

1. The techniques of panel data consider heterogeneity explicitly by taking individual-specific variables into account.

2. By combining both cross-sectional and time series observations, panel data offer more information, more variability and less collinearity among variables.

3. By studying the repeated cross-sectional of observations, panel data are more suitable to study the dynamics of change and it enables to study more complicated behavioural models.

4. Panel data sets are better able to discover and estimate effects that cannot simply be detected in pure cross-sections or pure time-series data.

5. Panel data can help to minimise the bias that might occur if firms are aggregated into broad aggregates.

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independent variables have impacts on the dependent variable. The other reason is that the correlation of independent variables with the error term, Corr $(X_k, \varepsilon_i) \neq 0$ (Gujarati, 2003; Wooldridge, 2010). However, using the lag values of independent variables helps prevent both these problems, since the current dependent variable does not impact the lag values of independent variables, and the lag values of independent variables may naturally highly correlated with the current independent variables, but not with the current error term (Ozdemir, 2014). Accordingly, one-year lagged values of independent variables are used in all estimations to prevent the endogeneity problems consistent with the econometric point of view (Hermalin and Weisbach, 1991; Abdullah, 2007; Yoshikawa and Rasheed, 2010; Ozdemir, 2014).

When the dependent variable is the probability of paying dividends, which is a binary variable that equals to 1 if a firm pays dividends and zero otherwise, logit estimations[49] are appropriate (Greene, 2003). Accordingly, the following logit models, where the dependent variable (DPAY) is the binary variable and the independent variables have the same previous definitions, are developed:

Model 1: $Logit\ (DPAY)_{i,t} = \alpha + \beta_1 ROA_{i,t\text{-}1} + \beta_2 M/B_{i,t\text{-}1} + \beta_3 RISK_{i,t\text{-}1} + \beta_4 DEBT_{i,t\text{-}1} + \beta_5 FCF_{i,t\text{-}1} + \beta_6 LIQ_{i,t\text{-}1} + \beta_7 TANG_{i,t\text{-}1} + \beta_8 AGE_{i,t\text{-}1} + \beta_9 SIZE_{i,t\text{-}1} + \sum_{t=1}^{T} \beta_t YEAR_{i,t} + \varepsilon_{i,t\text{-}1}$

Next, INDUSTRY variable, which represents *industry dummies*, is included in the regression model in order to control for the impact of different industries, as follows:

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[49] If the dependent variable is binary variable, which takes value of 0 or 1, the logit estimation can be employed. The logit model uses the logistic distribution and assumes that the response probability, which can be presented as follows:

$$P_i = E(Y=1/X_i) = \frac{Exp(X_i^T \beta)}{1 + Exp(X_i^T \beta)} = \frac{1}{1 + Exp(-X_i^T \beta)}$$

Where $X_i^T \beta$ is a matrix of unknown parameters and the equation above demonstrates the logistic distribution function. $X_i^T \beta$ varies from $-\infty$ to $+\infty$, P_i takes the values of 0 or 1. Furthermore, P_i is nonlinear related to $X_i^T \beta$. If P_i is the probability of a firm to pay dividends, then $(1 - P_i)$ is the probability of not paying dividends and expressed as:

$$P_i = \frac{1}{1 + Exp(X_i^T \beta)}. \text{ Thus, } \frac{P_i}{1 - P_i} = \frac{1 + Exp(X_i^T \beta)}{1 + Exp(-X_i^T \beta)} = Exp(X_i^T \beta)$$

We know that $P_i/(1\text{-}P_i)$ is the odds ratio in favour of paying dividends, in other words the ratio of the probability of a firm to pay dividends to the probability of it to not pay dividends. When taking the natural log if this ratio $L_i = ln\ (P_i/1\text{-}P_i) = X_i^T \beta$, where L_i is called the logit, and therefore this model is called the logit model. In order to estimate the model, the following equation is used (Gujarati, 2003):

$$L_i = ln\left(\frac{P_i}{1 - P_i}\right) = X_i^T \beta + \varepsilon_i$$

Where, the dependent variable is dummy variable that takes 1 or zero, X_i^T is a matrix of independent variables and ε_i is the error term.

Model 2: *Logit* $(DPAY)_{i,t} = \alpha + \beta_1 ROA_{i,t-1} + \beta_2 M/B_{i,t-1} + \beta_3 RISK_{i,t-1} + \beta_4 DEBT_{i,t-1} + \beta_5 FCF_{i,t-1} + \beta_6 LIQ_{i,t-1} + \beta_7 TANG_{i,t-1} + \beta_8 AGE_{i,t-1} + \beta_9 SIZE_{i,t-1} + \sum_{t=1}^{T} \beta_t YEAR_{i,t} + \sum_{j=1}^{n} \beta_j INDUSTRY_{j,i,t} + \varepsilon_{i,t-1}$

Furthermore, this chapter also uses a continuous dependent variable, dividend payout ratio that is denoted as DPOUT, to indentify the most important determinants while Turkish firms set their actual level of payout ratios, and hence to provide more robust empirical results. When the dependent variable is the intensity of paying dividends, which is left censored at zero, and the distribution of the sample is a mixture of discrete and continuous variables, a tobit estimation[50] is appropriate (Greene, 2003). Accordingly, the corresponding tobit models are constructed as below:

Model 1: *Tobit* $(DPOUT)_{i,t} = \alpha + \beta_1 ROA_{i,t-1} + \beta_2 M/B_{i,t-1} + \beta_3 RISK_{i,t-1} + \beta_4 DEBT_{i,t-1} + \beta_5 FCF_{i,t-1} + \beta_6 LIQ_{i,t-1} + \beta_7 TANG_{i,t-1} + \beta_8 AGE_{i,t-1} + \beta_9 SIZE_{i,t-1} + \sum_{t=1}^{T} \beta_t YEAR_{i,t} + \varepsilon_{i,t-1}$

When the INDUSTRY variable is added into the model:

Model 2: *Tobit* $(DPOUT)_{i,t} = \alpha + \beta_1 ROA_{i,t-1} + \beta_2 M/B_{i,t-1} + \beta_3 RISK_{i,t-1} + \beta_4 DEBT_{i,t-1} + \beta_5 FCF_{i,t-1} + \beta_6 LIQ_{i,t-1} + \beta_7 TANG_{i,t-1} + \beta_8 AGE_{i,t-1} + \beta_9 SIZE_{i,t-1} + \sum_{t=1}^{T} \beta_t YEAR_{i,t} + \sum_{j=1}^{n} \beta_j INDUSTRY_{j,i,t} + \varepsilon_{i,t-1}$

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[50] A tobit model can be applicable where a dependent variable is censored within certain ranges (Greene, 2003; Wooldridge, 2010). In the case of dividend modelling in this study, the dependant variable (dividend payout ratio) is bounded at zero; there is no implicit continuum of the dependent variable below 0 if none dividends distributed. Otherwise, it is always non-zero, in other words taking positive values. Therefore, the study employs the tobit model as follows:

$$yi \begin{cases} 0 & \text{if } yi^* \leq 0 \\ \beta xi + ui, \ ui \sim N(0, \sigma^2) & \text{if } yi^* > 0 \end{cases}$$

In the model, the data are censored at zero, $T = 0$ and the likelihood function for the censored normal distribution of dividend per share is:

$$L = \prod_{i}^{N} \left[\frac{1}{\sigma} \phi \left(\frac{y - \mu}{\sigma} \right) \right]^{d_i} \left[1 - \Phi \left(\frac{\mu - \tau}{\sigma} \right) \right]^{1-d_i}$$

Setting $T = 0$ and parameterizing μ as $Xi\beta$ provides the likelihood function for the tobit model. Hence:

$$L = \prod_{i}^{N} \left[\frac{1}{\sigma} \phi \left(\frac{y_i - X_i\beta}{\sigma} \right) \right]^{d_i} \left[1 - \Phi \left(\frac{X_i\beta}{\sigma} \right) \right]^{1-d_i}$$

The tobit model has the log-likelihood function, which is made up of two parts. The first part estimates the classical regression for the uncensored observations, whereas the second part estimates the relevant probabilty that an observation is censored (Greene, 2003; Wooldridge, 2010) as presentes below:

$$\ln L = \sum_{i=1}^{N} \left\{ d_i \left(-\ln\sigma + \ln\phi \left(\frac{y_i - X_i\beta}{\sigma} \right) \right) + (1 - d_i)\ln \left(1 - \Phi \left(\frac{X_i\beta}{\sigma} \right) \right) \right\}$$

When the dividend payout ratio of the firm is used a dependent variable, which is left censored at zero, then the tobit model is more favourable than the ordinary least squares appraoch related to our data characteristics.

3.3.2.3 Descriptive Statistics of the Variables

Table 3.4 below presents the descriptive statistics (mean, median, standard deviation, maximum and minimum values, skewness and kurtosis) for the research variables used in the multivariate analyses of this chapter of the study. The panel dataset (unbalanced) includes 264 Turkish firms (non-financial and non-utility) listed on the Istanbul Stock Exchange (ISE) with 2,112 firm-year observations[51] over the period 2003-2012.

Table 3.4 Descriptive Statistics of the Research Variables

The table reports the descriptive statistics for the research variables used in the multivariate analyses of this part of the study. The unbalanced panel dataset includes 264 firms (non-financial & non-utility) listed on the ISE with 2,112 firm-year observations over the period 2003-2012.

Variables	Mean	Median	S.D.	Min	Max	Skewness	Kurtosis
DPAY	0.339	0.000	0.473	0.000	1.000	0.682	1.465
DPOUT	0.243	0.000	0.911	0.000	21.05	14.34	287.9
ROA	0.021	0.030	0.185	-5.120	1.059	-11.41	295.9
M/B	1.508	1.162	1.322	0.284	18.66	5.304	43.01
RISK	0.457	0.420	0.196	0.017	2.868	2.746	22.96
DEBT	0.249	0.158	0.542	0.000	10.76	12.77	221.2
FCF	0.078	0.042	1.340	-19.18	13.58	-0.683	45.15
LIQ	3.014	1.561	9.099	0.005	263.6	16.49	378.0
TANG	0.490	0.497	0.215	0.001	0.991	-0.068	2.390
AGE	3.445	3.555	0.499	1.098	4.477	-1.002	4.296
SIZE	4.863	4.704	1.712	0.513	10.16	0.427	2.792

At first glance, the mean of DPAY is 0.339, indicating that in almost 34 % of the total 2,112 firm-year observations; Turkish firms paid dividends, whereas in the rest of the 66% of the total observations, they did not. On average, DPOUT reveals that the sampled Turkish firms had the dividend payout ratio of 24.3% over the entire period. Furthermore, the statistics (DEBT and ROA) report that on average firms make about 25% debt financing in their capital structure and had only approximately 2% of the returns on their total assets invested over the period. LIQ variable demonstrates a high mean current ratio of 3:1, which suggests that Turkish firms are on average capable of paying their obligations. Moreover, the descriptive statistics of the other variables can be observed from the table.

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[51] Each research variable 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.

3.3.2.4 Correlation Matrix and VIF Values of the Independent Variables

Table 3.5 demonstrates the correlation matrix and the Variance Inflation Factors (VIF) of the independent variables included in the multivariate analyses.

Table 3.5 Correlation Matrix & VIF Values of Independent Variables

	ROA	M/B	RISK	DEBT	FCF	LIQ	TANG	AGE	SIZE	VIF	1/VIF
ROA	1.000									1.56	0.641
M/B	-0.144	1.000								1.51	0.662
RISK	-0.132	0.171	1.000							1.14	0.877
DEBT	**-0.498**	**0.458**	0.073	1.000						1.77	0.565
FCF	0.276	- 0.042	-0.027	-0.104	1.000					1.09	0.917
LIQ	0.111	0.052	-0.012	-0.093	0.056	1.000				1.03	0.970
TANG	-0.145	-0.000	0.024	0.082	-0.111	-0.058	1.000			1.06	0.943
AGE	-0.005	-0.091	-0.071	0.035	0.044	-0.049	0.088	1.000		1.06	0.943
SIZE	0.301	0.152	-0.247	-0.157	0.103	0.011	0.094	0.146	1.000	1.03	0.970

Although a few variables are moderately correlated, there does not appear to be high correlation between any two of the variables. Furthermore, to determine more directly if multicollinearity exists between independent variables, the VIF statistics are used. As a rule of thumb, the values of VIF larger than 10 are generally regarded as suggesting multicollinearity. Tolerance, calculated as 1/VIF, is also used to check the degree of multicollinearity; if a tolerance value is lower than 0.1, corresponding to a VIF value of 10, it implies multicollinearity. As reported in the table, none of the VIF values exceed 10, nor the tolerance values smaller than 0.1, the results therefore suggest that there is no multicollinearity.

3.4   Empirical Results

The effects of firm-specific factors on dividend policy in Turkey are analysed in two steps: (1) decisions to pay or not to pay and (2) how much dividends to pay. The nature of the dependent variable defines the appropriate estimation method. When the dependent variable is the probability of paying dividends, which is a binary variable that equals to 1 if a firm pays dividends and zero otherwise, logit estimations are used. When the dependent variable is the intensity of paying dividends, which is left censored

at zero, and the distribution of the sample is a mixture of discrete and continuous variables, tobit estimations are employed.

In order to provide further interpretations of the estimation coefficients, the *marginal effects* of the independent variables in logit and tobit models are also calculated. The marginal effects show the marginal impact of each independent variable on the dependent variable at the mean values of other independent variables.[52] The marginal effects are provided in the same tables next to the coefficient estimations columns for each regression models, illustrating the marginal effects of the independent variables on the probability of paying dividends (in logit models), as well as showing their marginal influences on setting the actual level of payout ratios (in the tobit models). The results of the logit and tobit estimates are summarised in Table 3.6 and Table 3.7 respectively.

Also, in order to control for heteroscadasticity, the pooled models are tested using White's corrected hetereoscadasticity robust regressions. Hence, the models in this chapter do not suffer from heteroscadasticity. This section reports and discusses the results of the empirical analyses.

3.4.1   Results of the Logit Estimations

Table 3.6 on the next page reports the results of logit estimations[53] on the probability of Turkish firms to pay dividends based on 1,846 firm-year observations from 264 ISE-listed firms over the period 2003-2012. The dependent variable is a binary variable taking 1 if the firm pays dividends and 0 otherwise. Whereas Model 1 includes the set of all independent variables that are employed according to research hypotheses as previously explained, and Model 2 expands the regression model by adding industry dummies (INDUSTRY) to control for different industry classifications effect of the sample.

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[52] Marginal Effects at the Means (MEMs) are computed by setting the values of independent variables (X) at their means, and then seeing the effect of a one-unit change in one of the independent variables (Xk) on the dependent variable, P(Y=1). For categorical variables, the effects of discrete changes are computed; the marginal effects for categorical variables show how P(Y=1) is predicted to change as Xk changes from 0 to 1, holding all other independent variables at their means. This can be quite useful, informative, and easy to understand. For continuous independent variables, the marginal effect measures the instantaneous rate of change. If the instantaneous rate of change is similar to the change in P(Y=1) as Xk increases by one unit while holding all other X variables at their means, this too can be quite useful and informative (Long, 1997; Long and Freese, 2006).

[53] It is worth noting that this chapter of the study also employs probit estimations on the probability of paying dividends. The corresponding pooled and panel (random effects) probit models provide very similar findings with the logit estimations. The results are reported in Table 3.10 in Appendix II.

Table 3.6 Results of the Logit Estimations on Probability of Paying Dividends

Model Variables	PANEL A: Pooled Logit				PANEL B: Random Effects Logit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
ROA	9.7822*** (8.11)	1.7237*** (8.52)	10.335*** (8.51)	1.7231*** (9.27)	11.442*** (7.66)	1.1173*** (8.29)	11.486*** (7.76)	1.1043*** (8.32)
M/B	-0.1316* (-1.72)	-0.0231* (-1.74)	-0.1722** (-2.00)	-0.0287** (-2.04)	-0.3532*** (-2.92)	-0.0344*** (-2.97)	-0.3572*** (-2.94)	-0.0343*** (-2.99)
RISK	-2.1788*** (-3.28)	-0.3839*** (-3.38)	-1.7869*** (-2.65)	-0.2979*** (-2.71)	-0.9195 (-1.34)	-0.0897 (-1.35)	-0.7864 (-1.16)	-0.0756 (-1.16)
DEBT	-2.6984*** (-8.07)	-0.4755*** (-8.69)	-2.5176*** (-6.74)	-0.4197*** (-7.29)	-4.1406*** (-5.00)	-0.4043*** (-5.04)	-3.9045*** (-4.82)	-0.3753*** (-4.91)
FCF	0.0745 (1.38)	0.0131 (1.38)	0.0695 (1.37)	0.0116 (1.36)	0.0773 (0.99)	0.0075 (0.99)	0.0813 (1.05)	0.0078 (1.05)
LIQ	0.0070 (1.52)	0.0012 (1.52)	0.0140** (2.44)	0.0023** (2.47)	0.0044 (0.35)	0.0004 (0.35)	0.0058 (0.46)	0.0005 (0.46)
TANG	-0.2556 (-0.80)	-0.0432 (-0.80)	-0.1407 (-0.43)	-0.0234 (-0.43)	-0.7583 (-0.98)	-0.0740 (-0.98)	-0.4694 (-0.59)	-0.0451 (-0.59)
AGE	0.4827*** (3.46)	0.0850*** (3.47)	0.4536*** (3.26)	0.0756*** (3.26)	0.8141** (2.20)	0.0795** (2.23)	0.7665* (1.93)	0.0736* (1.95)
SIZE	0.6480*** (13.62)	0.1141*** (12.80)	0.6869*** (12.86)	0.1145*** (12.47)	1.1582*** (8.65)	0.1131*** (12.20)	1.1052*** (7.84)	0.1062*** (9.70)
Constant	-4.4080*** (-6.40)		-3.9670*** (-5.83)		-8.6138*** (-5.33)		-7.2745*** (-4.78)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846
Wald X^2	409.70***		418.14***		196.46***		198.06***	
Pseudo R^2	36.32%		37.92%		-		-	
Rho Value					0.6343		0.6148	
Likelihood Ratio Test					311.84***		268.41***	

The table reports the logit 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. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

In order to identify the most important financial determinants that influence the probability of paying dividends in the emerging Turkish market, pooled and panel (random effects) logit regressions estimations are applied. It is argued that a random effects logit (panel) model, which uses both within and between (group) possible variations, is more favourable than a pooled logit model (ignoring the firms effects) in its estimating power, since it allows the derivation of more efficient estimators (Gujarati, 2003). Therefore, both types of models are employed to find out whether they provide similar or significantly different results, and more importantly, to identify which one is more favourable in order to investigate the dividend puzzle in the context of developing Turkish economy. Accordingly, Panel A in Table 3.6 in the previous page displays the results of pooled logit estimation coefficients and marginal effects, whereas Panel B in the same table shows the results of random effects (panel) logit estimation coefficients and marginal effects of the independent variables on the probability of paying dividends for Model 1 and Model 2. The following conclusions can be drawn from the table.

1.   When Model 1 and Model 2 are estimated by the pooled logit regressions, they are overall statistically significant at the 1% level as evidence by the Wald X^2 tests. Also, the Pseudo R^2 values for the models (36.32% and 37.92% respectively) suggest a good indication as to the prediction power of the models. Similarly, the random effects logit (panel) regressions estimate that the models (1 and 2) are also, overall, statistically significant at the 1% level as reported by the Wald X^2 tests. Further, the Likelihood-ratio tests are statistically significant at the 1% for both Model 1 and 2, indicating that the proportion of the total variance, contributed by the panel-level variance component, *rho*, values[54] are significantly different from zero (0.6343 and 0.6148 respectively). Therefore, this suggests that panel models are more favourable than pooled models. Hence, the following results are reported based on the random effects logit models (Panel B).

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[54] A likelihood-ratio test formally compares the panel estimator with the pooled estimator for probit, logit and tobit models. As a rule of thumb, when *rho*, also known as the intraclass correlation coefficient, which is the proportion contribution to the total variance of the panel-level components, is zero, then the panel-level variance component is not important; therefore, the panel estimator is not different from the pooled estimator.

$H_0 : \Theta = 0$
$H_1 : \Theta \neq 0$

Where, the null hypothesis is that *rho* is zero, in other words no significant panel effect. This means the null hypothesis states that the pooled probit/logit/tobit is more appropriate rather than the random effects probit/logit/tobit model, if it holds true. However, if the null hypothesis is rejected, that means that there is a significant panel effect and the random effects model is appropriate (Frain, 2008; Cameron and Trivedi, 2010).

2.   The probability of a Turkish firm paying dividends is significantly and positively affected by the ROA variable (profitability). The coefficients of the variable are statistically significant and positive at the 1% level in both Model 1 and Model 2 (when the industry effect is controlled). Moreover, the results of the marginal effects of ROA show that it has the largest impact on the probability of paying dividends among all the significant variables. The marginal effects of this variable are found to be positively significant at the 1% level in the models (+1.1173 and +1.1043 when the industry dummies are included), illustrating that one unit of increase in ROA will increase the probability of a Turkish firm to pay dividends by about 100% for an average firm. Therefore, this result is consistent with the signalling theory of dividend policy, arguing that profitable firms are more likely to pay dividends to signal their good financial performance (Lintner, 1956; Bhattacharya, 1979; Miller and Rock, 1985; John and Williams, 1985; Benartzi *et al.*, 1997). Similarly, Aivazian *et al.* (2003b) from eight different emerging markets, Al-Najjar (2009) from Jordan, Kirkulak and Kurt (2010) from Turkey and Imran (2011) from Pakistan reported evidence that there is a strong positive relationship between profitability and dividend payments. Moreover, Aivazian *et al.* (2003b) stated that high profitability tends to mean high dividend payments, and they concluded that this evidence also provides strong support for the residual dividend theory. Since more profitable firms have more internally generated funds, only after all positive NPV investments have been undertaken, they are more likely to distribute cash dividends than less profitable firms (Saxena, 1999; Lease *et al.*, 2000).

3.   The probability of a Turkish firm paying dividends is significantly and negatively affected by the M/B variable (investment opportunities). The coefficients of the variable are statistically significant and negative at the 1% level in both Model 1 and Model 2 (when the industry effect is controlled). Moreover, the marginal effects of this variable are found to be significantly negative at the 1% level in the models (-0.0344 and -0.0343 when the industry dummies are included), implying that one unit of increase in M/B will decrease the probability of a Turkish firm to pay dividends by about 3.4% for an average firm. Accordingly, this finding is consistent with the prior literature from developed markets, arguing that the higher the investment opportunities, the more need for funds to finance investments, therefore the more likely the firm is to preserve earnings for investments rather than paying dividends, by the transaction costs theory (Rozeff, 1982; Llyod *et al.* 1985; Schooley and Barney, 1994; Moh'd *et al.*, 1995), pecking order theory (Myers and Majluf, 1984) and overinvestment hypothesis

(Lang and Litzenberger, 1989). Likewise, Kisman (2013) found a significant negative correlation between investment opportunity and dividend policy in the emerging Indonesian market.

4.   The probability of a Turkish firm paying dividends is statistically and negatively affected by the DEBT variable (debt policy). The coefficients of the variable are statistically significant and negative at the 1% level in both Model 1 and Model 2 (when the industry effect is controlled). Furthermore, the results of the marginal effects of DEBT display that it has the second largest impact on the probability of paying dividends among all the significant variables. The marginal effects of this variable are found to be negatively significant at the 1% level in the models (-0.4043 and -0.3753 when the industry dummies are included), revealing that one unit of increase in DEBT will decrease the probability of a Turkish firms to pay dividends by around 40% and 37.5% if the industry effect is controlled for an average firm. Hence, this evidence is consistent with the notion that debt and dividends are alternative mechanisms to control agency costs associated with the free cash flow problems, and since they are alternative devices to fulfil the same purpose, debt and dividends are conversely related (Jensen and Meckling, 1979; Jensen, 1986; Crutchley and Hansen, 1989). Further, the evidence is also consistent with studies including Aivazian *et al.* (2003b), who reported that higher debt ratios consequence none or lower dividend payments in emerging markets, Al-Najjar (2009) in Jordan and Kisman (2013) in Indonesia, who found a significantly negative relationship between firm debt levels and dividend policies. Similarly, Kirkulak and Kurt (2010) presented evidence that debt level significantly influences the dividend reductions since an increased level of debt increases the dividend reductions in Turkey.

5.   The probability of a Turkish firm paying dividends is significantly and positively affected by the AGE variable (firm age). The coefficients of the variable are statistically significant and positive at the 5% level in Model 1 but only at the 10% level in Model 2, when the industry effect is controlled. Further, the marginal effects of AGE are also found to be positively significant at the 5% level in Model 1, but only significant at the 10% level in Model 2 (+0.0795 and +0.0736 respectively), suggesting that one unit of increase in AGE will increase the probability of a Turkish firm to pay dividends by about 7-8% for an average firm. Accordingly, this result is consistent with the *maturity hypothesis* proposed by Grullon *et al.* (2002), arguing that since a firm gets older in terms of age, its investment opportunities decline, which leads to slower growth

rates and therefore reducing the fund's requirements of capital expenditure. Hence, mature firms tend to have steady earnings with high excess to external capital markets and they are able to preserve a good level of funds, which allow them to pay higher dividends.

6.   The probability of a Turkish firm paying dividends is statistically and positively affected by the SIZE variable (firm size). The coefficients of the variable are highly significant and positive at the 1% level in both Model 1 and Model 2 (when the industry effect is controlled). Moreover, the marginal effects of SIZE are also found to be positively significant at the 1% level in the models (+0.1131 and +0.1062 when the industry dummies are added), indicating that one unit of increase in SIZE will increase the probability of a Turkish firm to pay dividends by approximately 11% for an average firm. This result is supported by the agency costs and transactions costs theory of dividends (Lloyd *et al.*, 1985; Gaver and Gaver, 1993; Moh'd *et al.*, 1995; Redding, 1997; Fama and French, 2001; Farinha, 2002), suggesting a positive relationship between firm size and dividend policy as a control mechanism. Similarly, the evidence is also consistent with studies, including Al-Najjar (2009), Imran (2011), Mehta (2012) and Kisman (2013), which reported that firm size significantly and positively related to the dividend policies of the firms in different developing countries.

7.   The random effects (panel) logit estimations report no significant relations between the RISK (business risk), FCF (free cash flow), LIQ (assets liquidity) and TANG (assets tangibility) variables, and the probability of a Turkish firm to pay dividends. The empirical results indicate that there is a negative correlation between business risk and dividend policy, in line with studies including Jensen *et al.* (1992), Manos (2002), Farinha (2003), Al-Najjar (2009) and Mehta (2012). However, this negative correlation is found to be insignificant. Moreover, the analyses show no significant impact of firms' free cash flow on dividend payment decisions, which is inconsistent with the arguments related to the agency cost theory (Jensen, 1986; Shleifer and Vishny, 1997; La Porta *et al.*, 1999; 2000). Consistent with Al-Najjar (2009), Mehta (2012) and Kisman (2013) who reported that assets liquidity does not have any effects on dividend policy in different emerging markets, the evidence reveals no significant relationship between liquidity and dividend policy in Turkish market. Finally, although the results show a negative association between assets tangibility and dependent variable, as suggested by Aivazian *et al.* (2003b) and Al-Najjar (2009), this negative association is found to be insignificant.

8.   In order to test for industry-specific effect, 14 different industries classification dummies are added in the multivariate tests. The empirical results report that the inclusion of industry dummies does not change the significance levels of the coefficients of significant variables and results in slightly different marginal effects of the variables (only in one case, the coefficient of AGE is found to be positively significant at the 5% level but when the industry effect is controlled, it is observed to be positively significant at the 10% level) Therefore, there is no considerable impact of the industry-specific effect detected.

3.4.2   Results of the Tobit Estimations

This part of the study also uses a continuous dependent variable, dividend payout ratio that is denoted as DPOUT, to indentify the most important firm-specific determinants, while Turkish firms set their actual level of payout ratios, and hence to provide more robust empirical results. When the dependent variable is the intensity of paying dividends, which is left censored at zero, and the distribution of the sample is a mixture of discrete and continuous variables, a tobit estimation is appropriate (Greene, 2003). The tobit model has the log-likelihood function, which is made up of two parts. The first part estimates the classical regression for uncensored observations, whereas the second part estimates the relevant probability that an observation is censored. Therefore, when the dividend payout ratio is used as a dependent variable, which is left censored at zero and includes discrete and continuous variables, then the tobit model is more favourable and informative than the probit/logit and the ordinary least squares approach (Greene, 2003; Wooldridge, 2010).

Accordingly, Panel A in Table 3.7 on the next page reports the results of pooled tobit estimation coefficients and marginal effects. Panel B, in the same table, illustrates the results of the random effects (panel) tobit estimation coefficients and marginal effects of the independent variables on the dividend payout levels for Model 1 and Model 2, in order to identify the most important financial determinants, while Turkish firms set their actual level of payout ratios based on 1,800 firm-year observations from 264 firms listed on the ISE over the period 2003-2012. From the tobit estimation results displayed in Table 3.7, the following conclusions are made.

Table 3.7 Results of the Tobit Estimations on Dividend Payout Ratio

Model Variables	PANEL A: Pooled Tobit				PANEL B: Random Effects Tobit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Dividend Payout Ratio		Dividend Payout Ratio		Dividend Payout Ratio		Dividend Payout Ratio	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
ROA	5.8711*** (5.99)	1.2586*** (6.13)	6.5323*** (6.34)	1.3668*** (6.56)	5.9435*** (7.46)	0.7435*** (7.74)	6.1409*** (7.65)	0.7719*** (7.86)
M/B	-0.1261** (-2.27)	-0.0270** (-2.29)	-0.1142** (-2.29)	-0.0239** (-2.31)	-0.1919*** (-2.80)	-0.0240*** (-2.82)	-0.1920*** (-2.84)	-0.0241*** (-2.87)
RISK	-1.6801*** (-2.82)	-0.3601*** (-2.85)	-1.5357*** (-2.73)	-0.3213*** (-2.75)	-1.1392 (-1.35)	-0.1425 (-1.35)	-1.0497 (-1.17)	-0.1319 (-1.17)
DEBT	-1.7269*** (-5.88)	-0.3702*** (-6.03)	-1.4729*** (-5.07)	-0.3082*** (-5.18)	-1.6751*** (-3.48)	-0.2095*** (-3.50)	-1.4614*** (-3.11)	-0.1837*** (-3.12)
FCF	0.0185 (0.65)	0.0039 (0.65)	0.0183 (0.67)	0.0038 (0.67)	0.0013 (0.04)	0.0002 (0.04)	0.0016 (0.04)	0.0002 (0.04)
LIQ	0.0022 (1.08)	0.0004 (1.08)	0.0012 (0.45)	0.0002 (0.45)	0.0023 (0.01)	0.0004 (0.01)	0.0013 (0.02)	0.0001 (0.02)
TANG	-0.3886 (-1.39)	-0.0833 (-1.39)	-0.1298 (-0.46)	-0.0271 (-0.46)	-0.8068 (-1.56)	-0.1009 (-1.57)	-0.6026 (-1.28)	-0.0757 (-1.28)
AGE	0.4648*** (3.71)	0.0996*** (3.75)	0.2613** (2.12)	0.0546** (2.13)	0.4491** (2.24)	0.0561** (2.24)	0.2765** (2.29)	0.0347** (2.31)
SIZE	0.4026*** (5.43)	0.0863*** (5.52)	0.4194*** (5.54)	0.0877*** (5.65)	0.5384*** (7.61)	0.0673*** (8.68)	0.5371*** (7.04)	0.0675*** (7.72)
Constant	-3.6945*** (-4.51)		-2.9303*** (-4.17)		-4.6148*** (-5.57)		-3.7642*** (-4.45)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
F Test	5.77***		5.38***					
Wald X^2					198.49***		213.21***	
Pseudo R^2	14.23%		15.59%					
Rho Value					0.3670		0.3411	
Likelihood Ratio Test					154.75***		121.47***	

The table reports the tobit estimations and t/z-statistics in the parentheses. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. Independent variables are one-year lagged. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

1. When Model 1 and 2 are estimated by the pooled tobit regressions, they are overall statistically significant at the 1% level, as evidence by the F test values. Also, the random effects tobit (panel) regressions estimate that Model 1 and 2 are also overall statistically significant at the 1% level, as reported by the Wald X^2 tests. However, the Likelihood-ratio tests are statistically significant at the 1% for both models, indicating that the proportion of the total variance contributed by the panel-level variance component, *rho*, values are significantly different from zero (0.3670 and 0.3411 respectively); therefore, the panel models are more favourable than pooled models. Hence, the following results are reported based on the random effects tobit models (Panel B) and also compared with the prior results, to see whether they produce similar or different findings.

2. The results indicate that the dividend payout ratio of a Turkish firm is significantly and positively affected by the ROA variable (profitability), which is consistent with the logit estimations. The coefficients and marginal effects of the variable are statistically significant and positive at the 1% level in both Model 1 and 2. Moreover, the results of the marginal effects of ROA show that it has the largest impact (positive) among all the significant variables, illustrating that one unit of increase in ROA will increase the amount of payout ratio by about 74-77% for an average firm. Therefore, this evidence suggests that we can accept *Hypothesis 1 that there is a positive relationship between profitability and the dividend payment decisions of Turkish firms.*

3. The results show that the dividend payout ratio of a Turkish firm is significantly and negatively affected by the M/B variable (investment opportunities), which is consistent with the logit estimations. The coefficients and marginal effects of the variable are statistically significant and negative at the 1% level in both Model 1 and 2. Further, the marginal effects of M/B reveal that one unit of increase in M/B will decrease the amount of dividend payout ratio by about 2.4% for an average firm. Hence, the findings provide evidence that we can accept *Hypothesis 2a that there is a negative relationship between investment opportunities and the dividend payment decisions of Turkish firms.*

4. The results indicate that the dividend payout ratio of a Turkish firm is significantly and negatively affected by the DEBT variable (debt level), which is consistent with the logit estimations. The coefficients and marginal effects of this

variable are highly significant and negative at the 1% level in both Model 1 and 2. Moreover, the results of the marginal effects of DEBT show that it has the second largest impact (negative) among all the significant variables, suggesting that one unit of increase in DEBT will reduce the amount of dividend payout ratio by about 18-21% for an average firm. Accordingly, the empirical evidence supports *Hypothesis 4 that there is a negative relationship between debt policy and the dividend payment decisions of Turkish firms.*

5   The results show that the dividend payout ratio of a Turkish firm is significantly and positively affected by the AGE variable (firm age), which is consistent with the logit estimations. The coefficients and marginal effects of this variable are statistically significant and positive at the 5% level in both Model 1 and 2. Further, the results of the marginal effects of AGE reveal that one unit of increase in AGE will increase the amount of dividend payout ratio by about 3.5-5.5% for an average firm. Therefore, this evidence suggests that we can accept *Hypothesis 8 that there is a positive relationship between firm age and the dividend payment decisions of Turkish firms.*

6   The results indicate that the dividend payout ratio of a Turkish firm is significantly and positively affected by the SIZE variable (firm size), which is consistent with the logit estimations. The coefficients and marginal effects of this variable are highly significant and positive at the 1% level in both Model 1 and 2. Moreover, the results of the marginal effects of SIZE show that one unit of increase in SIZE will increase the amount of dividend payout ratio by almost 7% for an average firm. Hence, the findings support *Hypothesis 9 that there is a positive relationship between firm size and the dividend payment decisions of Turkish firms.*

7   The random effects (panel) tobit estimations report no statistically significant coefficients and marginal effects of the RISK (business risk), FCF (free cash flow), LIQ (assets liquidity) and TANG (assets tangibility) variables, which is consistent with the logit estimations. Accordingly, the empirical results suggest no evidence of relationships between business risk, free cash flow, assets liquidity and assets tangibility and dividend payout ratios of Turkish firms and therefore they are not considered as important firm-specific determinants when Turkish firms set their dividend policies. Hence, *Hypothesis 3, 5, 6* and *7* are not supported.

8   In line with the prior results, the panel tobit estimations find no considerable industry impact when the industry dummies are included in the equation.

9   Consequently, the results of the panel tobit estimations are consistent with the panel logit estimations. Particularly, there is strong and consistent evidence that ROA (profitability), AGE (firm age) and SIZE (firm size) have significantly positive effects, whereas M/B (investment opportunities) and DEBT (debt policy) have significantly negative impact on the dividend policy decisions of Turkish firms.

3.4.3   Further Analyses

In this sub-section, additional tests are conducted in order to confirm the primary findings. This is done by employing an alternative dividend policy measure, namely *dividend yield.*[55] Since dividend yield (DYIELD) is a continuous variable, which is left censored at zero and the distribution of the sample is a mixture of discrete and continuous variables, a tobit estimation is appropriate. Therefore, dividend yield is substituted for dividend payout ratio[56] as the dependent variable, to further examine the most important firm-specific determinants affecting the dividend policy decisions of Turkish firms regarding how much dividends to pay, and to check the robustness of the primary findings from tobit estimations. Accordingly, Panel A in Table 3.8 on the next page reports the results of pooled tobit estimation coefficients and marginal effects, whereas Panel B in the same table shows the results of random effects (panel) tobit estimation coefficients and marginal effects of the independent variables on the levels of dividend yield of Turkish firms for Model 1 and 2.

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[55] Dividend yield variable (denoted as DYIELD) is measured as the ratio of dividend per share to price per share of firm i at year t during the period, 2003-2012. The descriptive statistics of DYIELD are illustrated below. As can be seen that the mean ratio of the dividend yield is 0.0185, indicating that the sampled Turkish firms had the dividend yield of just below 2% over the entire period.

Variable	Observations	Mean	Median	Std Dev.	Min	Max	Skewness	Kurtosis
DYIELD	2,112	0.0185	0.000	0.0403	0.000	0.6630	4.5661	44.418

[56] Although the most commonly used dividend measure is dividend payout ratio in the literature; there are certain instances that the measurement of dividend payout ratios can be problematic. First, if a firm's net earnings are negative, although the firm pays some amount of dividends - even large amounts, the payout ratio will be negative, which implies incorrectly that the firm's payout ratio is minus and such observations should be excluded from samples since the payout ratios cannot be minus. Second, if a firm has a "small non-negative net earnings" in a given year and even though the firm only maintains its stable dividend level, the payout ratio will be extremely high in terms of percentages (Rozeff, 1982). However, using the dividend yield as a dependent variable avoids problems that arise as a result of negative payout ratios occurred for firms whose net income is negative or extremely high percentages of payout ratios observed for firms whose net income is close to zero (Schooley and Barney, 1994).

Furthermore, dividend yield variable has associated with the problem that its behaviour is to great extent not controllable by managers since it is a market measure, whereas dividend payout ratio can be more directly influenced by managerial choice (Farinha, 1999). After all, it is worth noting that using the dividend yield, which is a market measure (dividends per share to share price per share) rather than the dividend payout ratio, which is an accounting measure (dividends per share to earning per share), will provide more evidence from a different perspective regarding dividend puzzle.

Table 3.8 Results of the Tobit Estimations on Dividend Yield

Model Variables	PANEL A: Pooled Tobit				PANEL B: Random Effects Tobit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Dividend Yield		Dividend Yield		Dividend Yield		Dividend Yield	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
ROA	0.3280*** (7.81)	1.3871*** (10.45)	0.3435*** (8.12)	1.4373*** (10.31)	0.3034*** (12.77)	1.1603*** (13.07)	0.3047*** (12.71)	1.1510*** (12.91)
M/B	-0.0094*** (-3.56)	-0.0398*** (-3.81)	-0.0096*** (-3.65)	-0.0403*** (-4.02)	-0.0088*** (-4.12)	-0.0339*** (-4.12)	-0.0088*** (-4.06)	-0.0335*** (-4.05)
RISK	-0.0463** (-2.40)	-0.1958** (-2.36)	-0.0418** (-2.21)	-0.1752** (-2.17)	-0.0188 (-1.50)	-0.0721 (-1.50)	-0.0164 (-1.31)	-0.0620 (-1.31)
DEBT	-0.0915*** (-7.57)	-0.3869*** (-9.16)	-0.0825*** (-6.23)	-0.3455*** (-7.59)	-0.0819*** (-5.46)	-0.3131*** (-5.47)	-0.0778*** (-5.18)	-0.2938*** (-5.17)
FCF	0.0003 (0.23)	0.0013 (0.23)	0.0001 (0.14)	0.0001 (0.15)	0.0001 (0.14)	0.0006 (0.14)	0.0001 (0.16)	0.0006 (0.16)
LIQ	0.0002 (0.30)	0.0001 (0.30)	0.0001 (1.05)	0.0005 (1.03)	0.0001 (1.00)	0.0006 (1.01)	0.0001 (0.99)	0.0006 (0.99)
TANG	-0.0177* (-1.79)	-0.0752* (-1.89)	-0.0132 (-1.15)	-0.0552 (-1.20)	-0.0376 (-1.48)	-0.1439 (-1.49)	-0.0368 (-1.33)	-0.1391 (-1.34)
AGE	0.0232*** (5.23)	0.0981*** (6.14)	0.0186*** (3.66)	0.0780*** (4.24)	0.0240*** (3.23)	0.0919*** (3.26)	0.0220*** (2.68)	0.0833*** (2.70)
SIZE	0.0159*** (10..37)	0.0676*** (13.78)	0.0160*** (9.25)	0.0671*** (12.52)	0.0189*** (7.75)	0.0724*** (8.72)	0.0177*** (6.58)	0.0670*** (7.02)
Constant	-0.1510*** (-6.16)		-0.1246*** (-4.89)		-0.1819*** (-6.18)		-0.1569*** (-5.03)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846
F Test	15.10***		11.98***					
Wald X^2					372.96***		377.75***	
Pseudo R^2	14.52%		15.11%					
Rho Value					0.5338		0.5253	
Likelihood Ratio Test					342.00***		315.86***	

The table reports the tobit estimations and t/z-statistics in the parentheses. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. Independent variables are one-year lagged. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

At first glance, the results in Table 3.8 display that both pooled tobit and panel tobit models are overall statistically significant at the 1% level. However, the Likelihood-ratio tests are statistically significant at the 1% for both Model 1 and 2, indicating that the proportion of the total variance, contributed by the panel-level variance component, *rho*, values, are significantly different from zero (0.5338 and 0.5253 respectively); therefore, as in case of the prior results, this suggests that panel tobit models are more favourable than pooled tobit models. Hence, the results are drawn from the random effects tobit models (Panel B).

The empirical results show that the random effects tobit estimations, when the dividend yield is used as the dependent variable, provide very similar findings consistent with the previous results regarding the dividend payout ratio. Although the marginal effects are found to be different, the amounts of the dividend yield of Turkish firms are significantly affected by the same variables with the same significance levels and the same directional impacts as in the case of their dividend payout ratio levels. Particularly, the amount of dividend yield is significantly and positively affected by ROA, AGE and SIZE, whereas it is significantly and negatively influenced by M/B and DEBT. Moreover, the results show no significant relation between RISK, FCF, LIQ and TANG and the amounts of dividend yield of Turkish firms. Also, inclusion of INDUSTRY (industry dummies) into the equation shows no considerable industy effect.

Consequently, when the panel tobit regression estimates are used to examine the firm-specific determinants of Turkish firms' dividend policy decisions of how much dividends to pay, by employing an alternative dependent variable, namely dividend yield, the results show a very similar evidence confirming the robustness of the primary findings from the panel tobit regressions performed on the dividend payout ratios of the Turkish firms.

The summary of the empirical results for the research hypotheses is illustrated in Table 3.9 below.

Table 3.9 Summary of Estimations Results for the Research Hypotheses

Variables	Predicted Sign	Realised Sign	Findings	Justification of the Hypotheses
ROA	(+)	(+)	Profitability has a significantly positive effect on the dividend policy decisions of Turkish firms. The evidence is consistent with Aivazian *et al.* (2003b), Al-Najjar (2009), Kirkulak and Kurt (2010) and Imran (2011), providing support for *the signalling theory of dividends* and *the residual dividend theory.*	*Hypothesis 1 is supported.*
M/B	(+) or (-)	(-)	Investment opportunities have a significantly negative effect on the dividend policy decisions of Turkish firms, contrary to studies (Aivazian *et al.*, 2003b; Al-Najjar, 2009; Kirkulak and Kurt, 2010; Imran, 2011) reported a positive relation. This is consistent with Kisman (2013), suggesting evidence for *the transaction cost theory, the pecking order theory* and *the overinvestment hypothesis.*	*Hypothesis 2a is supported.*
RISK	(-)	(-)	There is a negative correlation between business risk and dividend policy but this negative correlation is statistically insignificant. Therefore, the evidence suggests that business risk is not one of the most important determinants of the dividend policy decisions of Turkish firms.	Hypothesis 3 is not supported.
DEBT	(-)	(-)	Debt policy has a significantly negative effect on the dividends policy decisions of Turkish firms. The evidence is consistent with Aivazian *et al.* (2003b), Al-Najjar (2009) and Kisman (2013), providing support for *the agency cost theory of dividends.*	*Hypothesis 4 is supported*.
FCF	(+)	(+)	There is a positive correlation between free cash flow and dividend policy but this positive correlation is statistically insignificant. Hence, the evidence suggests that free cash flow is not one of the most important determinants of the dividend policy decisions of Turkish firms.	Hypothesis 5 is not supported.
LIQ	(+)	(+)	There is a positive correlation between firm liquidity and dividend policy but this positive correlation is statistically insignificant. Therefore, the evidence suggests that firm liquidity is not one of the most important determinants of the dividend policy decisions of Turkish firms.	Hypothesis 6 is not supported.
TANG	(-)	(-)	There is a negative correlation between assets tangibility and dividend policy but this negative correlation is statistically insignificant. Hence, the evidence suggests that assets tangibility is not one of the most important determinants of the dividend policy decisions of Turkish firms.	Hypothesis 7 is not supported.
AGE	(+)	(+)	Firm age has a significantly positive effect on the dividend policy decisions of Turkish firms, which is consistent with *the maturity hypothesis* proposed by Grullon *et al.* (2002).	*Hypothesis 8 is supported.*
SIZE	(+)	(+)	Firm size has a significantly positive effect on the dividend policy decisions of Turkish firms. The evidence is consistent with Al-Najjar (2009), Imran (2011), Mehta (2012) and Kisman (2013), providing support for *the agency cost theory* and *the transaction costs theory of dividends.*	*Hypothesis 9 is supported.*

3.5 Conclusions

This chapter of the thesis investigates the firm-specific (financial) determinants of dividend policy decisions after the implementation of major economic and structural reforms starting with the fiscal year 2003 in the Turkish market, where an ideal setting is provided to study the dividend behaviour of an emerging economy (a civil law originated country), which employed the common laws in order to integrate with world markets. Therefore, the study focuses on a recent large panel dataset of 264 corporations (non-financial and non-utility) listed on the ISE, over a ten-year period 2003-2012, including 1,846 firm-year observations in logit models and 1,800 firm-year observations in tobit models. Particularly, empirical examinations establish how the ISE-listed firms are affected by the firm-specific determinants while setting their dividend policies, and whether they follow the same firm-specific determinants of dividend policy as suggested by empirical studies from developed markets during the research period. In addition, it considers a more comprehensive empirical model by estimating the effects of various firm-specific determinants on dividend policy, employs richer regression techniques (the pooled and panel logit/probit and tobit estimations) and uses alternative dividend policy measures (the probability of paying dividends, dividend payout ratio and dividend yield) in order to provide more valid, consistent and robust results.

The dividend policy of Turkish firms is analysed in two steps: (1) decisions to pay or not pay and (2) how much dividends to pay. The results indicate that profitability, debt policy, firm size, investment opportunities and firm age are the determinants primarily affecting the dividend policy decisions of Turkish firms.

The positive association between firm profitability and dividend policy is consistent with the signalling hypothesis, arguing that profitable firms pay larger dividends to signal their good financial performance. This positive relation also may be due to the residual dividend theory, proposing that more profitable firms have more internally generated funds and, only after all positive net NPV investments have been undertaken, hence they will distribute larger dividends than less profitable firms. Furthermore, the negative relationship between debt ratio and dividend policy supports the view that debt and dividends may be alternative mechanisms to control the problems associated with agency problems and, since they are alternative devices to fulfil the same purpose, debt and dividends are conversely related. It may also be that debt implies an increase in both dependency on external financing, and in the total risk of the firm's stocks, because debt

represents the fixed costs that firms have to repay, increasing the need for re-financing. Accordingly, higher level of debt consequences a higher level of fees when external finance is raised. Hence, firms with high levels of debt tend to maintain their earnings in order to lower external financing costs, thus lowering its dividends.

The study findings further indicate the positive relationship between firm size and dividend policy, suggesting that larger firms are more likely to have more dispersed ownership structures and, in this context, face higher potential agency costs. Also, larger firms are more likely to be mature and have easier access to capital markets to raise external finance at lower costs. Hence, the lower transaction costs and higher potential for agency problems, suggest a positive relationship between firm size and dividend payments as a control mechanism. Moreover, the level of investment opportunities is another firm-specific determinant that negatively influences dividend policies of the firms. This negative influence implies that firms with better investment opportunities choose lower dividend payments, which is consistent with the transaction cost, pecking order and agency cost theories; the higher the growth, the more is the need for funds to finance investments. Therefore, the more likely the firm is to preserve earnings rather than paying dividends because external finance is costly.

The results show that more mature firms, in terms of age, distribute higher dividends, consistent with the maturity hypothesis, suggesting that since a firm gets older its investment opportunities decline, which leads to slower growth rates and therefore reducing the fund's requirements of capital expenditure. Thus, mature firms tend to have steady earnings with high excess to external capital markets, and they can be able to preserve a good level of funds, which allow them to pay higher dividends. Furthermore, the study presents no evidence of a significant relationship between dividend policy and business risk, free cash flow, assets liquidity and assets tangibility, and therefore they are not considered as the important firm-specific determinants while the ISE firms set their dividend policies. Finally, the analyses indicate no considerable industry effect on the dividend policies of Turkish firms.

Aivazian *et al.* (2003b) report that the dividend policies of firms in emerging markets are affected by the same firm-specific determinants as their counterparts in the US; however, emerging market firms may be more sensitive to some of these determinants and may react differently, indicating the greater financial constrains in different countries under which they operate. Consequently, the study results are consistent with

the findings of Aivazian *et al.'*s (2003b) research and suggest that Turkish firms follow the same firm-specific determinants of dividend policy as proposed by dividend theories, and as suggested by empirical studies conducted in developed markets, after Turkey implemented major reforms in the fiscal year 2003. Particularly, the primary firm-specific determinants of dividend policy are profitability, debt level, firm size, investment opportunities and firm age in the context of emerging Turkish market.

APPENDIX II

RESULTS OF THE PROBIT ESTIMATIONS

Although probit and logit estimations provide qualitatively similar results, the main difference between them is that the probit model[57] uses the normal distribution, whereas the logit model uses the logistic distribution (Gujarati, 2003). In this context, the corresponding probit models, where the dependent variable is the binary variable and the independent variables have the same previous definitions, are developed to examine the most important firm-specific determinants affecting the probability of paying dividends in the Turkish market, and to check whether they confirm similar results as reported by the logit estimations. Accordingly, Panel A in Table 3.10 on the following page displays the results of pooled probit estimation coefficients and marginal effects, whereas Panel B in the same table shows the results of random effects (panel) probit estimation coefficients and marginal effects of the independent variables on the probability of paying dividends for Model 1 and 2.

The results illustrate that both pooled and panel probit models are overall statistically significant at the 1% level. However, the Likelihood-ratio tests are statistically significant at the 1% level for both Model 1 and 2, indicating that the proportion of the total variance, contributed by the panel-level variance component, *rho*, values, are significantly different from zero (0.6443 and 0.6255 respectively). Hence, as in the case of logit estimations, this suggests that panel probit models are more favourable than pooled probit models.

The results of the random effects probit models (Panel B) report almost the same results (the same levels of significance of the coefficients and very similar marginal effects) as reported by the random effects logit estimations. Particularly, the probability of a Turkish firm paying dividends is significantly and positively affected by ROA, AGE and SIZE, whereas it is significantly and negatively influenced by M/B and DEBT. Further, the results show no significant relation between RISK, FCF, LIQ and TANG and the probability of paying dividends. Finally, there is no considerable industry impact found when the industry dummies are included in the equation. Consequently, the results of the probit models are consistent, compared to the results of logit models, confirming very similar findings regarding the decisions of Turkish firms on whether to pay cash dividends or not.

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[57] The probit model uses the normal distribution and the probability function in this estimation model can be presented as follows:

Prob (Y=1 | x) = φ (X',β)
Prob (Y=0 | x) = 1 − F(X',β)

Where, φ is the cumulative distribution function of the normal distribution. β presents the impact of the change on X on the probability (Greene, 2003).

Table 3.10 Results of the Probit Estimations on Probability of Paying Dividends

Model Variables	PANEL A: Pooled Probit				PANEL B: Random Effects Probit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
ROA	5.1449***	1.6111***	5.4502***	1.6602***	6.4087***	1.1191***	6.4341***	1.1042***
	(7.57)	(7.89)	(7.87)	(8.43)	(7.94)	(8.61)	(8.05)	(8.63)
M/B	-0.0703**	-0.0220**	-0.0878**	-0.0267**	-0.1988***	-0.0347***	-0.2011***	-0.0345***
	(-2.04)	(-2.07)	(-2.51)	(-2.53)	(-3.01)	(-3.05)	(-3.02)	(-3.06)
RISK	-1.0971***	-0.3435***	-0.9250**	-0.2817**	-0.5091	-0.0889	-0.4402	-0.0755
	(-2.83)	(-2.87)	(-2.54)	(-2.56)	(-1.43)	(-1.44)	(-1.24)	(-1.24)
DEBT	-1.5486***	-0.4849***	-1.4002***	-0.4265***	-2.3097***	-0.4033***	-2.1830***	-0.3746***
	(-7.93)	(-8.39)	(-6.97)	(-7.42)	(-5.04)	(-5.07)	(-4.85)	(-4.92)
FCF	0.0467	0.0146	0.0441	0.0134	0.0371	0.0064	0.0393	0.0067
	(1.53)	(1.52)	(1.50)	(1.49)	(0.85)	(0.85)	(0.91)	(0.91)
LIQ	0.0043	0.0013	0.0073**	0.0022**	0.0026	0.0004	0.0033	0.0005
	(1.51)	(1.51)	(2.18)	(2.20)	(0.36)	(0.36)	(0.46)	(0.46)
TANG	-0.1380	-0.0432	-0.1098	-0.0334	-0.3810	-0.0665	-0.2240	-0.0384
	(-0.79)	(-0.79)	(-0.58)	(-0.58)	(-0.89)	(-0.88)	(-0.50)	(-0.50)
AGE	0.2874***	0.0900***	0.2677***	0.0815***	0.4595**	0.0802**	0.4337*	0.0744*
	(3.65)	(3.66)	(3.31)	(3.30)	(2.22)	(2.25)	(1.93)	(1.95)
SIZE	0.3888***	0.1217***	0.4032***	0.1228***	0.6474***	0.1130***	0.6191***	0.1062***
	(14.44)	(13.81)	(13.49)	(13.21)	(8.83)	(12.22)	(7.99)	(9.78)
Constant	-2.7600***		-2.4586***		-4.8706***		-4.1053***	
	(-7.02)		(-6.46)		(-5.95)		(-4.85)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846
Wald X^2	503.23***		515.45***		218.91***		220.22***	
Pseudo R^2	36.09%		37.56%					
Rho Value					0.6443		0.6255	
Likelihood Ratio Test					318.28***		277.89***	

The table reports the probit 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. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

CHAPTER 4

DIVIDEND POLICY AND SIGNALLING THEORY: EVIDENCE FROM TURKEY

4.1 Introduction

The aim of this chapter is to investigate whether the ISE-listed firms adopt deliberate cash dividend policies to signal information to investors, and whether they follow stable cash dividend payments as in developed markets by using Lintner's (1956) partial adjustment model, and several extensions of this model, since the fiscal year 2003 when Turkey began to implement serious economic and structural reforms for a better working of the market economy, outward-orientation and globalisation, in other words for market integration.

Accordingly, the chapter contributes to the literature in several ways. First of all, it is the first major research to our knowledge that examines the information content of cash dividend payments and dividend smoothing over time in Turkey (during its market integration process in the post 2003 period), using Lintner's (1956) partial adjustment model. Second, unlike previous studies (Adaoglu, 2000; Aivazian *et al.*, 2003a), this chapter provides a large-scale dataset that covers a more recent long period of time. Third, it further pursues several extensions of the Lintner model by adding additional explanatory variables (lagged earnings, external finance and year dummies to capture the effect of 2008 global financial crisis).

Dividend policy has attracted a great deal of attention from financial economists in corporate finance literature. Questions such as why firms pay dividends, why investors care, and to what extent dividend policy may affect firm's market value have been subject to a long-standing argument (Baker and Powell, 1999). Miller and Modigliani (1961) assert that, under the circumstance of a perfect capital market with rational investors and perfect certainty, a managed dividend policy does not affect the firm value and therefore it is irrelevant. Under such circumstances, the valuation of the firm depends on the productivity of the firm's assets, not the type of dividend payout. However, real world capital markets are subject to various market imperfections, such as information asymmetries, differential taxes, transaction costs and agency problems. These imperfections have led to the development of many competing theories of dividend policy in order to explain why companies pay, or not pay dividends (Lease *et al.*, 2000).

Lintner (1956) was the first researcher to investigate the information content of dividends, and he found that US firms follow extremely deliberate dividend payout policies, contrary to M&M's (1961) prediction. In his pioneering study in 1956, Lintner

showed that US firms tend to smooth dividends relative to earnings; they only increase dividend payments when they believe that earnings can sustain higher dividend levels permanently. They were also reluctant to cut dividends unless adverse circumstances are likely to persist, since dividend cuts are bad signals to the market. Lintner (1956) concluded that US firms have target payout ratios and make partial adjustments toward their target ratios to smooth dividend payment streams in the short-run and therefore they pursue stable dividend policies.

Various studies from developed countries have been strongly supportive of Lintner's (1956) findings and reported consistency of results across many studies and different periods of time, including Darling (1957), Brittain (1964; 1966), Fama and Babiak (1968), McDonald *et al.* (1975), Chateau (1979), Dewenter and Warther (1998), Baker *et al.* (1985), Baker *et al.* (2002), Brav *et al.* (2005) and Chemmanur *et al.* (2010). Further, Baker *et al.* (1985, p. 83) stated that "……*the results show that the major determinants of dividend payments today appear strikingly similar to Lintner's behavioural model developed during the mid-1950's.*" Similarly, Benartzi *et al.* (1997) and Baker and Powell (1999) concluded that Lintner's model of dividends has been the best description of the dividend setting process available even after all these years.

Several empirical studies have examined the information content of dividends as proposed by Lintner (1956) in emerging stock markets and have reported mixed evidence in these developing markets. Aivaizan *et al.* (2003a) compared the dividend policy behaviour of firms operating in eight different emerging economies with the dividend policies of US firms, and they reported that the Lintner basic model still works for US firms but it does not work very well for emerging firms, since current dividends are much less sensitive to past dividends in these markets. However, Mookerje (1992) in India, Pandey (2001) in Malaysia, Al-Najjar (2009) in Jordan, Chemmanur *et al.* (2010) in Hong Kong, Al-Ajmi and Abo Hussain (2011) in Saudi Arabia and Al-Malkawi (2014) in Oman found evidence supporting the Lintner model in explaining dividend behaviour in these emerging markets, but they generally have higher adjustment factors, hence lower smoothing and less stable dividend policies compared to developed countries. Contrarily, Adaoglu (2000) found inconsistent results with the Lintner argument in the Turkish market and reported that Turkish firms follow unstable dividends policies.

The main motivation of this thesis is to carry the dividend debate into an emerging market but, in a different way from prior research, it examines the dividend policy behaviour of a particular emerging market that implemented serious economic and structural reforms for the integration with world markets, and attempts to identify what behaviour of the dividend policy of this emerging market shows afterwards. In this respect, Turkey and its stock market (the ISE) offer ideal setting for the purpose of this thesis by allowing to study the dividend behaviour of an emerging market which implemented major reforms starting with the fiscal year 2003 in compliance with the IMF stand-by agreement, the EU directives and best-practice international standards for a better working of the economy, outward-orientation and globalisation.

Financial markets in Turkey were strictly regulated until a financial liberalisation programme was implemented in 1980. After the adoption of related regulations enacted and launched in the subsequent years, the Istanbul Stock Exchange was officially established in December 1985 and commenced its operations on January 3, 1986 (CMB, 2003). A number of studies revealed that Turkey has a bank-based financial system (Aivazian *et al.,* 2003a; 2003b) where private sector banks dominate the market and are mainly part of a bigger family-owned commercial corporations (Erturk, 2003). Indeed, Turkish firms generally have the concentrated and pyramidal ownership structures dominated by families who generally own business groups, including banks, businesses and subsidiaries in the same group. As a result of this infrastructure, families have control over many banks that belong to their business groups, and the banks' lending decisions. This has led to business groups obtaining much of their finance from their own banks, in other words allowing non-arm's length party transactions (Yurtoglu, 2003; IIF, 2005; Aksu and Kosedag, 2006).

In this context, Aivazian *et al.* (2003a; 2003b) argue that dividend policy may be a more useful pre-commitment and signalling device in markets that are greatly dependent on arm's length transactions. However, the financial systems in emerging markets like Turkey are generally characterised by closely held bank-financed companies in where the direct interactions between shareholders and corporate creditors, who have access to private information, reduce the need for dividends as a signal and therefore make dividend stability less important. Similarly, Dewenter and Warther (1998) suggest that stable dividend policy may not be important for firms that rely on bank debt due to the close ties between managers and lenders.

Dividend policy decisions are not always solely dependent on managers' judgement, since factors such as regulations, financial crisis and trends in macro-economy might also have implications for firms' dividend policies (Kirkulak and Kurt, 2010). The evidence from cross-country studies (La Porta *et al.,* 2000; Aivazian *et al.,* 2003a) has revealed that there are regulatory differences related to the dividend policy making process forced by governments throughout the world. The civil law countries, typically emerging economies, generally have weaker laws in terms of protecting minority shareholders' rights, relative to the rich common law countries (La Porta *et al.,* 1999; 2000) and hence these emerging markets are likely to enforce constrains on dividend policy in order to protect both minority shareholders and creditors (Glen *et al.,* 1995).

Public corporations listed on the ISE are subject to the regulatory policies put into effect by the CMB of Turkey. Indeed, the dividend policy in the ISE was heavily regulated when it first started to operate in 1986. For the fiscal years 1985-1994, the first mandatory dividend policy was implemented by the enactment of Capital Markets Law in 1982 and, according to the first regulation on dividend payments, 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, such as the payments to employers or maintaining it as retained earnings, were not legally possible (Adaoglu, 1999; 2000). The main purpose of this mandatory dividend payment regulation was to protect minority shareholders rights by providing them satisfactory levels of dividends since the liquidity in the stock capital markets was almost non-existent. There was no stock exchange before 1986 and the only source of income for minority shareholders was the dividend income (Aytac, 1998).

The limited research (Adaoglu, 2000; Aivazian *et al.,* 2003a) conducted in the emerging Turkish market showed that the Lintner model did not work well in explaining dividend behaviour in Turkey; the ISE-listed firms followed unstable cash dividend payments and the level of current earnings of firms in a given year were the main determinant affecting the firms' cash dividend payments. However, Adaoglu (2000) and Aivazian *et al.* (2003a) examined the dividend behaviour of Turkish firms for the period while the dividend payments of the ISE listed firms were heavily regulated due to the first mandatory dividend policy (they were obliged to pay at least 50% of their distributable income as cash dividends) imposed by the CMB, which did not provide much flexibility to the managers of these firms in choosing their own dividend policies. Therefore, one

can expect that cash dividend payments were solely dependent on the firms' current year earnings, as forced by regulations, and any variability in earnings of the firms was directly reflected in the level of cash dividends. In this period, Turkey also had issues with insider lending, in other words non-arm's length transactions, within business groups owned by families, which reduced the need for dividend signalling and stability for the ISE firms, as suggested by Aivazian *et al.* (2003a; 2003b) and Dewenter and Warther (1998).

Following the November 2002 elections which resulted in one-party government (whereby political uncertainty, to some degree, diminished), the new Turkish government 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 in March 2003 (CMB, 2003; Adaoglu, 2008; Birol, 2011). Turkey's progress in achieving full membership of the EU in this period also provided a strong motivation in establishing new reforms, rules and regulations 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). Accordingly, there are reasons that may suggest the ISE-listed firms may adopt dividend smoothing and follow stable dividend policies as in developed markets after the implementation of major reforms in 2003.

Along with many other regulations and reforms, the CMB of Turkey made many amendments to improve the transparency and quality of the banking sector and adopted "The Banking Sector Restructuring Program" in May 2001 for restructuring the public banks, rehabilitating the private banking system, and strengthening surveillance and supervision frame to increase efficiency in the sector (BRSA, 2010). Moreover, with the introduction of "Regulation on Establishment and Operations of Banks" in July 2001, the risk group definition and calculation of loan limits for a single business group (including banks, businesses and subsidiaries in the same group), considering direct and connected lending, were established to prevent insider lending (non-arm's length transactions) as a source of financing. Therefore, the ISE firms turned to the equity market with a greater incentive for more transparent financing (IIF, 2005).

Another reason that might suggest the ISE firms may smooth their dividends relates to the much more flexible mandatory dividend policy regulations imposed by the CMB after the implementation of major reforms in 2003. The CMB replaced the second

mandatory dividend policy that forced the ISE firms to pay at least 20% of their distributable income as the "first dividend". However, in a more flexible way from the first mandatory dividend payment policy between 1985 and 1994, the listed firms did not have to pay the "first dividend" solely in cash but 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. Nevertheless, 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 (Adaoglu, 2008; Kirkulak and Kurt, 2010).

Empirical research in developing markets contributed relatively little evidence compared to the empirical evidence conducted in developed markets. A few empirical studies reviewed in Chapter 2 have provided some evidence as to whether managers are concerned about dividend smoothing over time in a number of different emerging markets, as proposed by Lintner (1956). However, it can be observed that there is only narrow evidence from the Turkish market, which is subjected to following issues. First, applying Lintner's (1956) model, Adaoglu (2000) examined the dividend policy of Turkish firms for the period 1985-1997 and Aivazian *et al.* (2003a) covered the period 1983-1990. It is certain that the results from these two studies are relatively old and perhaps outdated. Hence, one can suggest that there is need for evidence from recent data. Second, unlike the results of Adaoglu (2000) and Aivazian *et al.* (2003a), the ISE firms may adopt deliberate cash dividend policies to signal information to investors during the period, when the mandatory dividend policy is considerably relaxed and the insider lending (non-arm's length transactions) is prevented as a source of financing, following the implementation of major reforms in 2003. Third, Adaoglu's (2000) data sample included only the ISE listed firms with at least 5 years of *nonzero* cash dividends. Therefore one can argue that the study may be biased due to the sample selection errors, since only analysing regular or frequent dividend-paying companies

may lead to different results and these results may not represent dividend policy behaviour of the market as a whole. Likewise, although Aivazian *et al.* (2003a) reported evidence from eight different markets, they stated that their Turkish data included a limited number of only largest listed firms. Hence, the results regarding the Turkish market may be biased due to limited sample selection procedures.

Accordingly, the aim of this chapter is to empirically investigate the information content of cash dividends as proposed by Lintner (1956) over a decade after the implementation of major economic and structural reforms, starting with the fiscal year 2003, in the Turkish market, and to also provide more evidence on this developing country, by attempting to fill the gaps in the literature, as pointed out in the above criticisms. In particular, the chapter contributes to the dividend literature in the following aspects. First, Turkey offers an ideal setting to study the dividend behaviour of an emerging market (a civil law originated country) which employed the common laws in order to integrate with world markets. Therefore, the chapter examines how the ISE-listed firms set their cash dividend payments and whether they follow stable dividend policies, as in developed markets, after the implementation of major reforms in 2003. Second, it uses a large-scale dataset that covers a more recent long period of time. Third, it employs richer research methodologies (the pooled OLS, random effects, fixed effects and system GMM analyses). Finally, it attempts to answer the following research questions:

1.   Does Lintner's (1956) partial adjustment model work to explain dividend policy behaviour in the emerging Turkish market? Do results show support to the dividend signalling hypothesis?

2.   What are the implications of the Lintner's coefficients (the speed of adjustment and target payout ratio) in the Turkish market? Do the ISE-listed firms smooth their dividend payments and follow stable dividend policies?

3.   Is the pooled OLS more suitable to investigate the Lintner's model in the Turkish market or are the panel models (random effects and fixed effects) more favourable than pooled OLS?

4.   Does the system GMM estimation provide consistent results with the preliminary findings from the pooled OLS or the panel models, or does it provide significantly different results?

5.   When adding other variables such as lagged earnings, external finance and year dummies (to capture the effect of the 2008 global financial crisis) into the basic Lintner model, does the model work better in explaining dividend behaviour in Turkey?

The remainder of this chapter is organised as follows. The following section 4.2 reviews the previous studies and develops the research hypotheses. The methodology and data are explained in section 4.3. Section 4.4 presents the empirical results, whereas section 4.5 summarises the conclusions of this chapter of the study.

4.2 Previous Studies and Research Hypotheses

In a pioneering study of dividend policy behaviour, Lintner (1956) developed a mathematical model, after an extensive field research of US companies, to test for the stability of cash dividend payments, where he suggests that each firm has a target dividend level in a given year, which is a function of earnings in that year and its target payout rate, as illustrated below:

$$D_{it}^* = r_i E_{it} \qquad\qquad (4.1)$$

Where D_{it}^* is the target dividend payment for firm i in year t, r_i is the target payout ratio for firm i and E_{it} is the net earnings in year t for firm i. Lintner (1956) further argues that the firm will only adjust dividends partially toward the target dividend level in any given year. Hence, the actual difference in dividend payments from year t-1 to year t can be given by:

$$D_{it} - D_{i(t-1)} = \alpha_i + c_i (D_{it}^* - D_{i(t-1)}) + u_{it} \qquad\qquad (4.2)$$

Where α_i is the intercept term, c_i is the speed of adjustment coefficient for firm i, u_{it} is the error term, D_{it} is the actual dividend payment for firm i in year t and $D_{i(t-1)}$ is the previous year's (t-1) dividend payment for firm i. By substituting $r_i E_{it}$ for the target dividend payment (D_{it}^*) in the model and rearranging Equation 4.2, the following empirically testable equation can be equivalently obtained:

$$D_{it} = \alpha_i + \beta_1 E_{it} + \beta_2 D_{i(t-1)} + u_{it} \qquad\qquad (4.3)$$

Where $\beta_1 = c_i r_i$ and $\beta_2 = (1-c_i)$. According to Lintner (1956), the constant term (α_i) is expected to have a positive sign to reflect management's reluctance to reduce dividends,

and the speed of adjustment coefficient (c_i) shows the stability in dividend payment changes and calculates the speed of adjustment toward the target payout ratio (r_i) in response to earnings changes. Hence, the value c_i reflects the dividend smoothing behaviour of the firm i to changes in the level of earnings; a higher value of c_i implies less dividend smoothing, in other words unstable dividend policy, and vice-versa. Consequently, Lintner (1956) suggests that firms set their dividends in line with their current earnings and their previous year dividends, and they make partial adjustments to a target payout ratio and do not correspond immediately with the changes in earnings.

Empirical support of Lintner's (1956) model of dividends was provided by early studies. Darling (1957), Brittain (1964; 1966) and Fama and Babiak (1968) re-evaluated and extended the Lintner model by adding other variables, or undertaking more comprehensive approaches, and they all confirmed the original findings of Lintner that US companies follow stable dividend policies. Similarly, several empirical studies examined corporate dividend policy behaviour in different developed markets and showed support to Lintner's (1956) argument. McDonald *et al.* (1975) examined the dividend, investment and financing decisions of French firms, and reported that dividends of French firms are well explained by profit and lagged dividends in the dividend model of Lintner (1956), whereas investment and financing variables were insignificant in the dividend equation. Chateau (1979) tested the partial adjustment model on large Canadian manufacturing firms. The study findings revealed that Canadian corporations follow stable dividend policies. Especially, they are relatively more conservative compared to American firms when it comes to short-term dividend strategies even though they have a higher average payout ratio. Further, Dewenter and Warther (1998) compared dividend polices of US and Japanese firms, and found that the speed-of-adjustment estimates from Lintner (1956) model confirm that US dividends are smoother than Japanese dividends and Japanese firms reduce dividends in response to poor performance more quickly than US firms.

Survey researchers have taken another path to study the actual behaviour of corporations in setting their dividend policies. Instead of using secondary data, they have asked corporate managers about their perceptions of dividends. Despite survey responses possibly suffering from non-response and incorrect response bias, they supplement methods of inferring management motives by providing direct evidence about managerial attitudes (Baker *et al.*, 2002). Numerous researchers surveyed chief

financial officers of US firms regarding their dividend policy decisions, including Baker *et al*. (1985), Baker and Farrelly (1988), Pruitt and Gitman (1991), Baker and Powell (1999), Baker *et al.* (2002) and Brav *et al.* (2005). In general, evidence from survey research suggested that the major determinants of dividend policy decisions are still strikingly similar to Lintner's (1956) findings and managers tend to avoid spectacular changes in dividend rates that may soon need to be reversed, have a target payout ratio and periodically adjust their dividends toward the target. Benartzi *et al.* (1997, p.1032) concluded that *".....Lintner's model of dividends remains the best description of the dividend setting process available."*

A number of studies investigated dividend policy behaviour in different developing countries by using Lintner's (1956) model. For instance, Mookerjee (1992) applied the Lintner model to firms in the private sector in a developing country, India. The results showed that the basic Lintner model performs well in explaining dividend payout behaviour during the period 1950-1981 in India. However, the explanatory power of the model was significantly increased by the inclusion of external finance as an additional explanatory variable in the dividend model. In Turkey, Adaoglu (2000) found that the main factor that determined the cash dividend payments was the current earnings. Also, Lintner's speed of adjustment factor was found to be 1.00, which was at the maximum level, meaning that the ISE firms did not smooth the dividends during the period 1985-1997. Until 1995, the ISE firms were regulated to pay 50% of their distributable income as cash dividends. Because of this regulation of compulsory distribution of profits, the firms followed earnings-oriented dividend policies and any variability in the earnings of the firm was directly reflected in the level of cash dividends. Even though 1995 regulatory change provided greater flexibility to the ISE firms in choosing their own dividend policies, they continued to follow unstable dividend policies during the period 1995-1997.

Pandey's (2001) empirical study showed support for the Lintner model in the emerging Malaysian market, revealing that Malaysian firms relied both on past dividends and current earnings in setting the current period's dividend payments during the period 1993-2000. Nevertheless, they had lower payout ratios and higher adjustment factors, pointing out that the Malaysian firms have low smoothing and less stable dividend policies. Furthermore, in their famous study regarding dividend policy behaviour in emerging markets, Aivazian *et al.* (2003a) compared the dividend behaviour of firms operating in developing countries with the dividend policies of US firms. Their sample

consisted of the largest firms from eight emerging markets (South Korea, Malaysia, Zimbabwe, India, Thailand, Turkey, Pakistan and Jordan) and 100 US firms over the period 1980-1990. The study results showed that current dividends in developing countries were much less sensitive to lagged dividends than the US control sample of companies and the Lintner model indeed still worked well for the US firms, whereas it did not work very well for the emerging market companies. Aivazian *et al.* (2003a) concluded that the institutional structures of developing countries compose corporate dividend policy a less feasible mechanism for signalling or for reducing agency costs than for US firms operating in capital markets with arm's length transactions.

In another study, Al-Najjar (2009) used the Lintner model to investigate dividend smoothing and stability of Jordanian firms during the period 1994-2003. The study findings reported that the Lintner model successfully explains Jordanian markets' dividend behaviour and further suggested that the Jordanian firms have target payout ratios. They slowly adjust dividends to their target but relatively faster than those in US (developed) market. Chemmanur *et al.* (2010) compared corporate dividend policies in Hong Kong and the US from 1984 to 2002. Their analysis of the Lintner model revealed that dividend payout in Hong Kong is more closely related to current year earnings and therefore the extent of dividend smoothing by firms in Hong Kong is considerably less than those in the US.

Al-Ajmi and Abo Hussain (2011) studied the stability of dividend policy in the emerging Saudi Arabian market for the period 1990-2006. The empirical results showed that lagged dividends and current earnings have the expected signs and are statistically significant as proposed by Lintner (1956). Further, Saudi firms have more flexible dividend policies since they act quickly to increase dividend payments and are willing to cut or skip dividends when earnings decline. More recently, Al-Malkawi *et al.* (2014) examined dividend smoothing of Omani companies using Lintner's (1956) partial adjustment model and the extended version covering the period 2001-2010. Their results provided empirical evidence supporting the validity of Lintner's original findings; Omani companies seem to adjust their dividends toward the target payout ratio gradually, more interestingly with a relatively low speed of adjustment, as compared to other firms in developed and emerging economies. In addition, the empirical evidence also suggested that the 2008 global financial crisis had no significant impact on dividend stability of Omani corporations.

Financial markets in Turkey were strictly regulated until a financial liberalisation programme was implemented in 1980. After the adoption of related regulations enacted and launched in the subsequent years, the Istanbul Stock Exchange was officially established in December 1985 and commenced its operations on January 3, 1986 (CMB, 2003). A number of studies revealed that Turkey is a civil law country (La Porta *et al.*, 1997) where corporate ownership structure is characterised by highly concentrated family ownership (Gursoy and Aydogan, 1999 and Yurtoglu, 2003), and has a bank-based financial system (Aivazian *et al.,* 2003a; 2003b) where private sector banks dominate the market and are mainly part of bigger family-owned business groups; including banks, businesses and subsidiaries in the same group (Erturk, 2003). As a result of this infrastructure, families have control over many banks that belong to their business groups and the banks' lending decisions, which led to business groups obtaining much of their finance from their own banks, in other words allowing non-arm's length party transactions (Yurtoglu, 2003; IIF, 2005; Aksu and Kosedag, 2006).

Dividend policy in the ISE was heavily regulated when it first started to operate in 1986. For the fiscal years 1985-1994, the first mandatory dividend policy was implemented by the enactment of Capital Markets Law in 1982 and, according to the first regulation on dividend payments, 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 such as the payments to employers or maintaining it as retained earnings, were not legally possible (Adaoglu, 1999; 2000). The main purpose of this mandatory dividend payment regulation was to protect minority shareholders rights by providing them satisfactory levels of dividends, since the liquidity in the stock capital markets was almost non-existent, as there was no stock exchange before 1986 and the only source of income for minority shareholders was the dividend income (Aytac, 1998).

Lintner's (1956) famous classic study revealed that managers are concerned about dividend signalling over time and indeed various studies to date in developed as well as emerging markets have shown consistent results. Contrarily, the limited research (Adaoglu, 2000; Aivazian *et al.*, 2003a) conducted in Turkey reported that the Lintner model did not work well explaining dividend behaviour in Turkey; the ISE-listed firms followed unstable cash dividend payments and the level of current earnings of firms in a given year was the main determinant affecting the firms' cash dividend payments.

However, Adaoglu (2000) and Aivazian *et al.* (2003a) examined the dividend behaviour of Turkish firms for the period while the dividend payments of the ISE listed firms were heavily regulated due to the first mandatory dividend policy (they were obliged to pay at least 50% of their distributable income as cash dividends) imposed by the CMB, which did not provide much flexibility to the managers of these firms to choose their own dividend policies. Therefore, one can expect that cash dividend payments were solely dependent on the firms' current year earnings, as forced by regulations, and any variability in earnings of the firms was directly reflected in the level of cash dividends. In this period, Turkey also had issues with insider lending, in other words non-arm's length transactions, within business groups owned by families, which reduced the need for dividend signalling and stability for the ISE firms, as suggested by Aivazian *et al.* (2003a; 2003b) and Dewenter and Warther (1998).

Following the November 2002 elections which resulted in one-party, the new Turkish government 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 in March 2003 (CMB, 2003; Adaoglu, 2008; Birol, 2011). Further, 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 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). Accordingly, there are reasons that may suggest the ISE-listed firms may adopt dividend smoothing and follow stable dividend policies as in developed markets after the implementation of major reforms in 2003.

Along with many other regulations and reforms, the CMB of Turkey made many amendments to improve the transparency and quality of the banking sector and adopted "The Banking Sector Restructuring Program" in May 2001 for restructuring the public banks, rehabilitation of private banking system, strengthening of surveillance and supervision frame to increase efficiency in the sector (BRSA, 2010). Moreover, with the introduction of "Regulation on Establishment and Operations of Banks" in July 2001, the risk group definition and calculation of loan limits for a single business group (including banks, businesses and subsidiaries in the same group), considering direct and connected lending, were established to prevent insider lending (non-arm's length

transactions) as a source of financing. Therefore, the ISE firms have turned to the equity market with a greater incentive for more transparent financing (IIF, 2005).

Another reason that might suggest the ISE firms may smooth their dividends relates to the much more flexible mandatory dividend policy regulations imposed by the CMB after the implementation of major reforms in 2003. The CMB replaced the second mandatory dividend policy that forced the ISE firms to pay at least 20% of their distributable income as the "first dividend". However, in a more flexible way from the first mandatory dividend payment policy between 1985 and 1994, the listed firms did not have to pay the "first dividend" all in cash. They had the option to distribute it in cash dividends or stock dividends or both, which was subject to the board of directors' decision but the total payment could not 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 remained at this level for the fiscal year 2005. Then, the minimum percentage of mandatory dividend payment level was reduced to 20% again, in the fiscal year 2006, and stayed at this level for the fiscal years 2007 and 2008. Nevertheless, 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 in making their own dividend policy decisions, allowing investors to interpret dividend policies of firms efficiently in reflecting their judgements in the share prices (Adaoglu, 2008; Kirkulak and Kurt, 2010).

In this context, the ISE firms may adopt deliberate cash dividend policies to signal information to investors during the period, when the mandatory dividend policy is considerably relaxed and the insider lending (non-arm's length transactions) is prevented as a source of financing, following the implementation of major reforms in 2003. Additionally, the evidence conducted by a number of researchers (Mookerje, 1992; Pandey, 2001; Al-Najjar, 2009; Chemmanur et al., 2010; Al-Ajmi and Abo Hussain, 2011; Al-Malkawi et al., 2014) showed support of the Lintner model in explaining dividend behaviour in different emerging markets but generally reported higher adjustment factors, hence lower smoothing and less stable dividend policies compared to developed countries. Yet, it is hypothesised that the ISE firms also have dividend behaviour consistent with the Lintner model and they have their target payout

ratio and adjust their dividends by dividend smoothing at a degree that may be different to the developed markets. Therefore:

Hypothesis 1: Cash dividend payments are the functions of the level of net earnings and the pattern of dividends paid in the previous year in the Turkish market.

Although various studies to date have been strongly supportive of Lintner's (1956) findings, reporting consistency in results across different periods of time, his model has also been criticised for not considering other factors that may possibly affect dividend policy. Some researchers (Darling, 1957; Brittain, 1964; 1966; Fama and Babiak, 1968 and Mookerjee, 1992) have attempted to modify and extend Lintner's partial adjustment model in order to indentify the best-fit dividend behaviour model. Accordingly, this chapter of the study further pursues several extensions of Lintner's (1956) partial adjustment model by including additional regressors as explanatory variables that are observed in the literature, and considered to be possibly influencing dividend policies of the firms in the emerging Turkish market, especially during the study sample period, 2003-2012. Therefore, the following aspects are discussed and the corresponding hypotheses are developed.

Since emerging markets are generally characterised by higher volatility and are more risky, compared to the developed markets (Odabasi *et al.,* 2004), corporations in these markets might have more cyclical and impermanent earnings, which would result in fluctuated dividend changes if those corporations do not carefully evaluate the changes in the levels of earnings and adjust their dividend policies consequently (Adaoglu, 2000). Therefore, lagged earnings patterns are important to indicate a record of positive or negative earnings and the persistent earnings problems (Kirkulak and Kurt, 2010). Indeed, Fama and Babiak (1968) emphasised the importance of the lagged earnings in determining cash dividend payments of a firm and re-evaluated the Lintner model by adding the lagged earnings as an explanatory variable. Fama and Babiak (1968, p.1160) further concluded that *".....The two-variable Lintner model, including a constant term, D_{t-1} and E_t, performs well relative to other models; in general, however, deleting the constant and adding the lagged profits variable E_{t-1} leads to a slight improvement in predictive power of the model."* Accordingly, the following hypothesis is developed to test the effect of adding the lagged earnings variable into the basic Lintner model in the Turkish market.

Hypothesis 2: Cash dividend payments are the functions of the level of net earnings and lagged net earnings, and the pattern of dividends paid in the previous year in the Turkish market.

Mookerjee (1992) attempted to examine whether the basic Lintner model explains dividend payout behaviour in the emerging Indian market, and more interestingly, drew attention to the importance of the viability of external finance in the context of developing countries, where the financial and institutional environments, within which firms operate, are different than those from developed countries. Moreover, the empirical findings showed that the Lintner model performed well in explaining dividend behaviour in India over the period 1950-1981, but the inclusion of the external finance into the model as an explanatory variable significantly improved the predictive power of the model, which revealed that firms in India used external finance to augment cash dividend payments. Mookerjee (1992) suggested that this finding was a reflection of the availability of bank loans provided to Indian firms, which were legally allowed to use external finance to augment dividend payments, at subsidised rates. Hence, the viability of external finance might also be an important determinant of dividend payments.

Dividend policy may be a more useful pre-commitment and signalling device in markets that are greatly dependent on arm's length transactions (Aivazian *et al.*, 2003a; 2003b). As previously mentioned, Turkey had issues with insider lending (non-arm's length transactions) within business groups owned by families who have control over many banks, whereby they belong to their business groups, and the banks' lending decisions, which may lead to business groups obtaining much of their finance from their own banks, reducing the need for dividend signalling and stability for the ISE firms. However, the CMB of Turkey made many amendments to improve the transparency and quality of the banking sector and adopted related regulations to prevent insider lending (non-arm's length transactions) as a source of financing in 2001. Therefore, the ISE firms have turned to the equity market with a greater incentive for more transparent financing. This may imply that external financing may have significant effects on cash dividend payments of the ISE firms, since external financing that they now obtain from arm's length parties can be more costly – in fact, a significantly negative effect of debt on dividend policy decisions of the ISE-listed firms is reported in the previous empirical chapter. Accordingly, the following hypothesis is formulated to test the effect of adding

the external finance (current and lagged level of external financing) variable into the basic Lintner model in the Turkish market.

Hypothesis 3: Cash dividend payments are the functions of the level of net earnings, the pattern of dividends paid in the previous year and the level of current and lagged external finance in the Turkish market.

Turkish economy has often experienced global effects from a number of geopolitical, financial and economic crises, including the Gulf War Crisis in 1991, the Asia Crisis in 1997, the Russian Crisis in 1998 and the Argentinean Crisis in 2000. It also suffered from the big financial shock due to the depreciation of Turkish Lira in 1994, experienced heavy turmoil from the failure of the Turkish disinflation program in 1999 and had gone through a rigorous banking crisis that resulted in substantial loses for shareholders, and many corporations declared bankruptcy in 2001 (Adaoglu, 2008; BRSA, 2010; Kirkulak and Kurt, 2010). However, each crisis did not have obvious impacts for the dividend policies of the ISE-listed firms. For instance, the economic crisis in 1994, due to the depreciation of the Turkish Lira, did not affect dividend payment decisions very much, whereas the severe banking crisis in 2001 had an extensive negative effect on dividend payments of the ISE firms (Adaoglu, 2008; Kirkulak and Kurt, 2010). In this respect, Kirkulak and Kurt (2010) examined dividend policy of the ISE firms from 1991 through 2006, the period that experienced several financial crises. They used yearly dummies for the years from 1997 to 2002 to capture possible effects of the financial crises on dividend payment decisions in the Turkish market. The results showed that the crises in 1997 and 1998 did not have any significant effects on dividend policies but the banking crisis in 2001 and its extensive impact in 2002 had significantly negative effects forcing the ISE firms to reduce or not to pay dividends.

Following the series of geopolitical, financial and economic crises between the early 1990's and the early 2000s, Turkish economy bounced back and enjoyed a strong uninterrupted growth until 2007 (Adaoglu, 2008; CMB, 2012). This improvement was perhaps reflecting a more efficient process since the new Turkish government signed a standby agreement with the IMF, as well as attempting to integrate its economy with the EU and began to implement major economic programs and serious structural reforms in the fiscal year 2003. However, the September 2008 global crisis also markedly hit Turkey and abruptly interrupted the recent expansion of its

economy (Rawdanowicz, 2010; Yorukoglu and Atasoy, 2010; Birol, 2011). Accordingly, it is worth investigating whether the September 2008 global crisis affected the dividend payment decisions of the ISE-listed firms, since this study covers the period 2003-2012. Therefore, the following hypothesis is developed to test the effect of adding the yearly dummies, which reflect the 2008 global crisis and its effects in the subsequent years, into the basic Lintner model.

Hypothesis 4: Cash dividend payments are the functions of the level of net earnings and the pattern of dividends paid in the previous year and are negatively affected by the 2008 global crisis in the Turkish market.

4.3 Methodology

The following sub-sections describe the methodology used in this chapter of the study. First, the sample data is explained, followed by the variables and models are presented, which are employed in order to test the research hypotheses.

4.3.1 Sample Data

The purpose of this chapter is to investigate the information content of cash dividend payments after the implementation of major economic and structural reforms starting with the fiscal year 2003, in the emerging Turkish market, by applying the Linter's (1956) model, examining how the Turkish firms set their cash dividends, and whether they prefer stable divided policies as in developed markets. Therefore, the data sample is drawn from the Istanbul Stock Exchange (ISE) according to the subsequent criteria:

1.   First, all companies listed on the ISE during the period 2003-2012 are considered, unlike some studies (Dewenter and Warther, 1998; Adaoglu, 2000; Baker *et al.,* 2002; 2006; 2008) that restrict their sample to dividend paying companies.[58] A long panel data set allows testing the degree of dividend smoothing and dividend stability in a way that cannot be achieved using cross-sectional data.

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[58] For instance, Dewenter and Warther's (1998) and Adaoglu's (2000) studies included only the firms with at least 5 years of *nonzero* cash dividend, which may be biased due to the sample selection errors since only analysing regular or frequent dividend-paying companies may lead to different results and these results may not represent dividend policy behaviour of the market as a whole. Because, some companies might not distribute cash dividends as often as regular dividend-payers or they may make dividends payments regardless of dividend smoothing and dividend stability considerations, whereas others might tend to avoid such payments in the context of emerging markets but *zero* cash dividend payment may still be a dividend policy itself. Therefore, this study includes all companies in order to prevent the sample selection bias and to obtain results that present dividend policy behaviour of the Turkish market as a whole during the period 2003-2012.

2.   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 policies. After these exclusions, a number of all non-financial and non-regulated corporations remain.

3.   Third, accounting and financial data for this research is obtained from DATASTREAM and 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.

The sample selection criteria result a panel data set of total 264 non-financial and non-utility firms listed on the ISE from 14 different industries during the period 2003-2012. 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 that listed in the different times during the period 2003-2012, are all considered and included in the sample. Therefore, due to the presence of delisted and newly listed companies, the sample is not the same for every year; rather it increases during the ten-year period from 2003 to 2012, which is known as unbalanced panel data. Furthermore, the selection criteria and distribution of the sample across time and industries in Table 3.1, and the descriptive statistics for the firm's characteristics of the sampled Turkish companies in Table 3.2 are presented in Chapter 3.

Moreover, Table 4.1 on the next page reports the descriptive statistics for the firm's dividend policy characteristics from the sampled 264 ISE-listed companies with 2,112 firm-year observations, over the period 2003-2012. Panel A in the table presents the mandatory dividend payout ratio that was imposed by the CMB, the number of the sampled firms on the ISE, the percentage of the dividend-paying firms, the average dividend payout and dividend yield ratios of the firms, across time.

After the implementation of major reforms in 2003, the CMB also re-introduced the mandatory dividend policy starting in the same year. With the replacement of the second mandatory dividend policy, the ISE-listed firms were obliged to pay at least 20% of their distributable income as dividends. For the fiscal year 2004, the CMB increased the minimum percentage of mandatory dividend payments for the ISE-listed

firms to 30% from 20%, which remained at this level for the fiscal year 2005. The minimum percentage of mandatory dividend payment level was then reduced to 20% again in the fiscal year 2006 and remained at this level for the fiscal years 2007 and 2008. Nevertheless, from the fiscal year 2009 and onwards (2010, 2011 and 2012), the CMB decided to not determine a minimum dividend payout ratio and to abolished mandatory minimum dividend payment distribution requirement.[59]

Table 4.1 Dividend Policy Characteristics for the Sampled Turkish Companies

Sample includes 264 firms (non-financial and non-utility) listed on the ISE with 2,112 firm-year observations during the period 2003-2012. Panel A illustrates the mandatory dividend payout policy imposed by the CMB, the number of the sampled firms, percentage of the dividend-paying firms, average payout ratio and average dividend yield ratio for the sampled Turkish firms across years during the period 2003-2012. Panel B illustrates annual earnings and corresponding cash dividend changes of the sample over the relevant time period.

Panel A: Mandatory Payout Ratio, Average Payout Ratio and Dividend Yield of the Sample

Fiscal Year	Mandatory Dividend Payout Ratio	Number of Firms	Percentage of the Dividend Paying Firms	Average Dividend Payout Ratio of the Firms	Average Dividend Yield Ratio of the Firms
2003	20%	157	20%	15%	1.60%
2004	30%	164	24%	11%	1.63%
2005	30%	199	36%	20%	1.88%
2006	20%	211	40%	18%	1.74%
2007	20%	214	40%	38%	2.51%
2008	20%	215	38%	45%	2.92%
2009	0%	218	33%	24%	1.84%
2010	0%	226	34%	21%	1.55%
2011	0%	249	34%	18%	1.26%
2012	0%	259	34%	28%	1.64%
Overall	**12%**	**264**	**34%**	**24%**	**1.85%**

Panel B: Earnings and Cash Dividend Changes for the Sample

Earnings Changes		Percentage of Cases in which the ISE Firms					
	Percentage of Cases	Increased Dividends	Decreased Dividends	Initiated Dividends	Omitted Dividends	Continued Omissions	Total
Earnings > 0							
Increases	39%	21%	13%	10%	6%	50%	**100%**
Decreases	31%	21%	20%	7%	28%	24%	**100%**
Earnings < 0	30%	2%	2%	3%	15%	78%	**100%**
Total	**100%**	15%	12%	7%	15%	51%	**100%**

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[59] The second mandatory dividend policy replaced by the CMB in 2003 was much more flexible compared to the first mandatory dividends policy imposed between 1985 and 1994, since the first mandatory dividend policy required the firms to pay at least 50% of their profit as cash dividends. The second mandatory dividend policy gave the firms the opportunity to distribute dividends as cash dividends, stock dividends or a mixture of both, which was subject to the board of directors' decision. The total payment, however, could not be less than 20% of the distributable income for the fiscal year 2003. Also, they were given a right to distribute stock dividends with the requirement that the amount of stock dividends added to the paid-in capital.

As can be observed from Panel A in Table 4.1, the number of firms in the sample consistently increased from 157 in 2003 to 259 in 2012. Among those ISE-listed firms, 20% of them paid cash dividends in 2003 and the percentage of dividend payers increased, reaching its peak at 40% in 2006 and 2007. However, the dividend-paying firms slightly dropped to 38% in 2008, followed by a further decline, and stayed at the level of 33-34% in the subsequent years. Similarly, the average dividend payout ratio and dividend yield ratio of the sampled Turkish firms showed similar patterns that increased and reached their peak in 2008, experiencing a decrease in the following years. This may be the negative consequences of the 2008 global financial crisis, which occurred during this period.

Panel B in Table 4.1 demonstrates the analysis performed to monitor the cash dividend policy responses of Turkish firms to earnings changes for 2,112 firm-year observations over the period 2003-2012. The annual changes in earnings are categorised as earnings increases and decreases when there is profit (earnings > 0), and the third category stands for when annual earnings are negative (earnings < 0). The annual changes in dividends are categorised as dividend increases, decreases, dividend initiations, dividend omissions and continued omissions, then corresponding dividend responses to earnings changes are calculated.

When the earnings increased, the Turkish firms increased their cash dividend payments in 21% of all cases, and they started paying cash dividends in 10% of them, whereas the firms decreased their cash dividends in 13% of all observations and they stopped distributing cash dividends in 6% of them. Even though earnings increased, non-dividend paying Turkish firms continued not to pay cash dividends in 50% of all observations. In the case of earnings decreases, the Turkish firms omitted paying cash dividends in 28% of all observations and continued not to distribute dividends in 24% of them, whereas the firms decreased their cash dividend payments in 20% of all cases. Although earnings declined, the Turkish firms still increased their cash dividends in 21% of all cases and some of them initiated dividend payments in 7% of all observations. When earnings are negative, there is a comparatively different distribution of dividend changes responses by the Turkish firms. Not surprisingly, the firms decreased (2%), omitted (15%) or kept omitting cash dividends (78%) in total of 95% of all observations.

4.3.2 Variables and Models

4.3.2.1 Variable Descriptions

This study employs the *current cash dividend payments* for firm *i* at time *t* as the dependent variable, which is denoted as $\text{Div}_{i,t}$ and is measured as the total cash common and preferred dividends paid to shareholders of the firm during the period 2003-2012.

The following two explanatory variables are used in the basic Lintner model, namely the *current net earnings* for firm *i* at time *t* and the *lagged cash dividend payments* for firm *i* that distributed in the year *t*-1. The *current net earnings* ($\text{Earnings}_{i,t}$) is the net income after all operating and non-operating income and expense, reserves, income taxes, minority interest and extraordinary items of the firm during the period 2003-2012. The second variable is symbolised as $\text{Div}_{i,(t-1)}$ and it is the previous year's cash dividend payments of the firm in the relevant time interval.

While testing several extensions of Lintner's (1956) model, the following additional explanatory variables are further included. The *lagged net earnings* is denoted as $\text{Earnings}_{i,(t-1)}$ and is the previous year's net earnings of the firm *i* (at time *t*-1) over the period 2003-2012. Further, the *current external finance* is defined as the total debt, which is the sum of long and short term debt, of the firm *i* at time *t* and symbolised as $\text{Debt}_{i,t}$, whereas the *lagged external finance* ($\text{Debt}_{i,(t-1)}$) is the previous year's total debt of the firm *i* (at time *t*-1) during the period 2003-2012. In order to capture the effect of the 2008 global financial crisis and its impact on the cash dividend payments of the ISE firms in the following years covered by the sample period, *yearly dummies* for the years 2008 to 2012, which they take a value of 1 for the year in question and 0 otherwise, are included on the right hand side of the Lintner (1956) model.

Finally, the importance of industrial classification to the dividend policy has been argued (Baker *et al.*, 1985 and Moh'd *et al.*, 1995), since firms in different industries work under different set of regulations and often have different levels of risk and growth potential. Accordingly, INDUSTRY, which represents *industry dummies* using Datastream's ICB (Industry Classification Benchmark) Codes, is included as a control variable in regression models.

Table 4.2 on the following page demonstrates the summary descriptions of the research variables used in the empirical analyses.

Table 4.2 Variables and Definitions

The table illustrates the research variables, their symbols and definitions used for the partial adjustment models in the empirical analyses of this chapter of the study.

Variables	Symbols	Definitions
Dependent Variable		
Current Cash Dividend Payments	$\text{Div}_{i,t}$	The total cash dividends paid to shareholders of firm i at year t during the period 2003-2012.
Independent Variables		
Current Net Earnings	$\text{Earnings}_{i,t}$	The net earnings after all operating and non-operating income and expense, reserves, taxes, minority interests and extraordinary items of the firm i at year t during the period 2003-2012.
Lagged Net Earnings	$\text{Earnings}_{i,(t-1)}$	The previous year's (at year t-1) net earnings of the firm i during the period 2003-2012.
Lagged Cash Dividend Payments	$\text{Div}_{i,(t-1)}$	The previous year's (at year t-1) total cash dividends paid to shareholders of the firm i during the period 2003-2012.
Current External Finance	$\text{Debt}_{i,t}$	The total debt, which is the sum of long and short term debt, for firm i at year t during the period 2003-2012.
Lagged External Finance	$\text{Debt}_{t,(t-1)}$	The previous year's (at year t-1) total debt for firm i during the period 2003-2012.
Year Effects	Year2008 Year2009 Year2010 Year2011 Year2012	Yearly dummies for the years from 2008 to 2012, which they take a value of 1 for the year in question and 0 otherwise, to capture the effect of the 2008 global financial crisis and its impact in the following years covered by the sample period.
Industry Effect	INDUSTRY	Industry dummies using 14 different industry classifications of the firms, according to Datastream's Industry Classification Benchmark (ICB) codes.

4.3.2.2 Research Design and Models

The research is aimed to provide an empirical examination on the signalling theory explanation, applying Lintner's (1956) partial adjustment model in order to identify whether the publicly-listed companies adopt stable dividend policies using dividend smoothing as proposed by Lintner (1956) in the emerging Turkish market, after the implementation of major reforms in 2003. Accordingly, a large-scale panel dataset that covers a relatively recent long time period is created, which allows for testing the degree of dividend smoothing and dividend stability in this study; the research sample contains a panel dataset of 264 non-financial and non-utility firms listed on the ISE over a ten-year period 2003-2012.

This chapter of the study uses pooled OLS[60] and two types of panel data models, namely fixed effects[61] and random effects[62] estimations in order to test the research hypotheses and to obtain comparable and more valid results. Due to missing observations, because of newly listed and delisted companies, the sample is not the same for every year over

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[60] The basic model using pooled ordinary least squares (OLS) is as follows:

$$Y_{it} = \alpha + \beta X'_{it} + u_{it}$$

It has double subscripts, where i denotes for cross-sectional entities in the sample ($i = 1,…,N$) and t stands for time period ($t = 1,….,T$). Y_{it} is the dependant variable and X'_{it} is a K-dimensional vector of the explanatory variables. Further, α is the intercept, β is the slope of the coefficients of the explanatory variables and u_{it} is the error term. This pooled OLS approach takes that the intercept, α, and the slope coefficients in β are identical for all entities and time periods. Similarly, the error term, u_{it}, is based on the assumption of independent and identically distributed over entities and time and (Verbeek, 2008).

[61] Fixed effects approach (also known as the Least-Squares Dummy Variable model) takes that the slope of coefficients are constant but the intercept varies between entities to control for omitted variables in panel data while omitted variables vary across entities but do not change over time (Stock and Watson, 2003). In this case, the model is as follows:

$$Y_{it} = \alpha_i + \beta X'_{it} + u_{it}$$

Where, α_i has subscript i ($i = 1,…,N$) to illustrate that the intercept for each entity may be different and they are fixed unknown constants that are measured along with β, where error term is typically assumed to be independent and identically distributed over entities and time. In short, all intercept term α is omitted since it is subsumed by the individual intercept α_i. The fixed effects capture all (un)observable time-invariant differences across entities (Verbeek, 2008). As dummy variables are used to estimate fixed effects, in the literature this model is also called as *the least-squares dummy variable (LSDV)* model (Gujarati, 2003). Moreover, Gujarati (2003) states that fixed effects model allows to differ among individuals in detection of the fact that each individual, or cross-sectional, entity might have some special characteristics of its own. Hence, fixed effects model is suitable in situations where the individual-specific intercept might be correlated with one or more regressors. However, a disadvantage of the model is that it consumes a lot of degrees of the freedom when the sample, N, is very large, in which case N dummies have to be introduced in the regression. Also, fixed effects model may not be able to estimate the impact of time-invariant explanatory variables (such as sex, colour or ethnicity) since they do not change over time.

[62] In the random effects model (also referred as Error Components Model), the intercept α_i is treated as a random variable rather than fixed constant. The α_i is assumed to be independent of errors u_{it} and also mutually independent. Then, the intercept for each firm can be expressed as: $\alpha_i = \alpha + u_i$, where α is the random variable with a mean value of intercept and u_{it} is a random error. Thus, the random effects model can be written as follows:

$$Y_{it} = \alpha + \beta X'_{it} + u_i + \mu_{it}$$

Or it can be expressed as:

$$Y_{it} = \alpha + \beta X'_{it} + w_{it}$$

Where, $w_{it} = u_i + \mu_{it}$, which is called the composite error term that consists of two components, u_i is the cross-section or individual-specific error component and μ_{it} is the combined time series and cross-section error component. The term *error components model (ECM)* derives its name because the composite error term w_{it} contains of two error components. The random effects model assumes that the intercept of an individual entity is a random drawing from a much larger population with a constant mean value. The individual intercept is therefore expressed as a deviation from this constant mean value. The main advantage of the random effects over fixed effects is that it is efficient in terms of degrees of freedom since N cross-sectional intercepts do not have to be estimated (only the mean value of the intercept and its variance need to be estimated). The random effects model is suitable in situations where the random intercept of each cross-sectional entity is uncorrelated with the regressors (Maddala, 2001; Gujarati, 2003).

the period 2003-2012, and hence the study provides an unbalanced panel dataset for the relevant period. However, the methods used in this study can be used with both a balanced and unbalanced panel data.

Lintner (1956) used aggregate data to explain dividend decisions of individual firms. Accordingly, the basic Lintner model of aggregate corporate dividend behaviour is applied by controlling for industry effect on the Turkish panel dataset, which is specified as below:

Model 1: $\quad \text{Div}_{i,t} = \alpha_i + \beta_1 \text{Earnings}_{i,t} + \beta_2 \text{Div}_{i,(t-1)} + \sum_{j=1}^{n} \beta_j \text{INDUSTRY}_{j,i,t} + u_{i,t}$

Furthermore, this chapter also pursues several extensions of Lintner's (1956) partial adjustment model by including additional regressors as explanatory variables on the right hand side of the equation. First, the effect of adding the lagged earnings variable into the basic Lintner model is tested by using the following corresponding model:

Model 2: $\quad \text{Div}_{i,t} = \alpha_i + \beta_1 \text{Earnings}_{i,t} + \beta_2 \text{Earnings}_{i,(t-1)} + \beta_3 \text{Div}_{i,(t-1)} + \sum_{j=1}^{n} \beta_j \text{INDUSTRY}_{j,i,t} + u_{i,t}$

Second, the current and lagged total debt variables are included into the Lintner model to test the effect of the external finance. Therefore, the related model is as follows:

Model 3: $\quad \text{Div}_{i,t} = \alpha_i + \beta_1 \text{Earnings}_{i,t} + \beta_2 \text{Div}_{i,(t-1)} + \beta_3 \text{Debt}_{i,t} + \beta_4 \text{Debt}_{i,(t-1)} + \sum_{j=1}^{n} \beta_j \text{INDUSTRY}_{j,i,t} + u_{i,t}$

Moreover, the effect of adding yearly dummies for the years from 2008 to 2012 (reflecting the 2008 global crisis and its impact in the subsequent years) into the basic Lintner model is tested by the corresponding model below:

Model 4: $\quad \text{Div}_{i,t} = \alpha_i + \beta_1 \text{Earnings}_{i,t} + \beta_2 \text{Div}_{i,(t-1)} + \beta_3 \text{Year2008} + \beta_4 \text{Year2009} + \beta_5 \text{Year2010} + \beta_6 \text{Year2011} + \beta_7 \text{Year2012} + \sum_{j=1}^{n} \beta_j \text{INDUSTRY}_{j,i,t} + u_{i,t}$

4.3.2.3 Descriptive Statistics of the Variables

Table 4.3 below displays the descriptive statistics (mean, median, standard deviation, maximum and minimum values, skewness and kurtosis) for the research variables used in the empirical analyses. The panel dataset (unbalanced) includes 264 Turkish firms (non-financial and non-utility) listed on the ISE with 2,112 firm year observations during the period, 2003-2012. Further, in order to remove the inflation effect over the

period, all research variables are measured in real terms and normalised by the consumer price index (CPI) deflator using 2003 as a base year. The CPI deflator data is taken from the Central Bank of the Republic of Turkey (CBRT) database.

However, it should be noted that the inflation adjusted descriptive statistics for the lagged versions of research variables are based on 1,846 firm-year observations. In addition, all figures of the research variables summarised in the table are in millions of Turkish Lira (TL).

Table 4.3 Inflation Adjusted Descriptive Statistics of the Research Variables

The table reports the descriptive statistics for the research variables. The unbalanced panel dataset includes 264 firms (non-financial & non-utility) listed on the ISE with 2,112 firm-year observations over the period 2003-2012. It is worth noting that the descriptive statistics for the lagged versions of the variables are based on 1,846 firm-year observations.

Variables	Mean	Median	S.D.	Min	Max	Skewness	Kurtosis
$Div_{i,t}$	20.30	0.000	114.1	0.000	2484	12.97	215.4
$Div_{i,(t-1)}$	19.42	0.000	111.6	0.000	2484	13.55	236.9
$Earnings_{i,t}$	46.98	4.556	184.4	-1123	2422	6.541	63.09
$Earnings_{i,(t-1)}$	43.98	4.446	173.7	-1123	2257	6.383	62.69
$Debt_{i,t}$	196.9	24.99	602.7	0.000	7987	5.838	48.05
$Debt_{i,(t-1)}$	181.6	24.37	554.2	0.000	7581	5.739	46.31

4.3.2.4 Correlation Matrix and VIF Values of the Independent Variables

Table 4.4 below presents the correlation matrix and the Variance Inflation Factors (VIF) of the independent variables.

Table 4.4 Correlation Matrix & VIF Values of Independent Variables

	$Div_{i,(t-1)}$	$Earnings_{i,t}$	$Earnings_{i,(t-1)}$	$Debt_{i,t}$	$Debt_{i,(t-1)}$	VIF	1/VIF
$Div_{i,(t-1)}$	1.000					2.38	0.420
$Earnings_{i,t}$	0.715	1.000				3.87	0.258
$Earnings_{i,(t-1)}$	0.734	0.830	1.000			3.85	0.259
$Debt_{i,t}$	-0.479	-0.567	-0.551	1.000		7.82	0.127
$Debt_{i,(t-1)}$	-0.448	-0.573	-0.516	0.939	1.000	7.73	0.129

There seems to be a high correlation between the current and lagged values of the variables. However, to identify more directly if multicollinearity exists between independent variables, the VIF statistics are used. As a rule of thumb, the VIF values

larger than 10 generally suggest multicollinearity. Tolerance, calculated as 1/VIF, is also used 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 observed from the table, none of the VIF values exceed 10, nor are the tolerance values smaller than 0.1, the results therefore suggest that there is no serious multicollineariy.

4.4 Empirical Results

The estimation results for the research models using the pooled OLS, random effects, fixed effects and robustness check (the system GMM) regressions are summarised in Table 4.5, Table 4.7, Table 4.8 and Table 4.9. The regression estimates are collected from a large panel dataset of 264 Turkish firms listed on the ISE over the period 2003-2012. It is noted that the number of the firm-year observations is 1,846 in the different model specifications.

In order to control for heteroscadasticity, the pooled OLS and fixed effects models are tested using White's corrected hetereoscadasticity robust regressions. Hence, the models in this chapter do not suffer from hetereoscadasticity. This section reports and discusses the results of the empirical analyses.

4.4.1 The Lintner (1956) Model Analyses

Table 4.5 below reports the results of pooled OLS, panel models (random effects and fixed effects) and robustness check (the system GMM) estimations applying the Lintner (1956) model (Model 1). The following conclusions can be drawn from the table.

1.   The overall pooled OLS model is significant at the 1% level as evidenced by F-statistic. Similarly, panel models (the random effects model at the 1% level as evidenced by the Wald X^2 and the fixed effects model at the 5% level as evidence by the F-statistic) are overall significant.

Table 4.5 Results of the Lintner (1956) Model applied on the Turkish Firms

Dependent Variable: Cash Dividends$_{(t)}$

Independent Variables:	Pooled OLS	Panel Models		Robustness Check
		Random Effects	Fixed Effects	The System GMM
Earnings$_{(t)}$	0.146***	0.164***	0.089***	0.133***
	(4.01)	(4.05)	(2.71)	(3.52)
Cash Dividends$_{(t-1)}$	0.658***	0.646***	0.212	0.690***
	(6.41)	(6.27)	(1.39)	(9.10)
Constant	3.816	1.394	12.79***	3.102
	(1.24)	(0.44)	(3.25)	(1.17)
Industry dummies	Yes	Yes	-	Yes
The target payout ratio (r)	0.427	0.463	0.113	0.429
The speed of adjustment (c)	0.342	0.354	0.788	0.310
Number of Observations	1,846	1,846	1.846	1,846
F-Statistic	34.27***	-	3.73**	219.36***
Wald X^2	-	493.19***	-	-
R-Squared	81.4%	81.2%	80.2%	-
Lagrange Multiplier Test		1.80		
F-Test		1.09		
Hausman Test[†]		-		
Arellano-Bond test for AR(1)				Pr > z = 0.033
Arellano-Bond test for AR(2)				Pr > z = 0.307
Hansen overidentifying test				Pr > chi2 = 0.216
Number of instruments				59

Notes: Table reports coefficients and t/z-statistics in the parenthesis. The pooled OLS and fixed effects models are tested using White's corrected heteroscedasticity robust regressions. Robustness Check analysis is estimated using Blundell and Bond's (1998) the system GMM. The two-step, robust (standard error correction), small (corrections that result in t instead of z test statistic for the coefficients and F instead of *Wald X^2* test for overall fit) and orthogonal (maximising sample size in panels with gaps) commands are used to make the estimations even more robust. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. [†]Since the pooled OLS model is found to be more favourable, Hausman specification test, which compares the fixed and random effects models, is not needed.

2.   The Lagrange Multiplier test statistic is 1.80 (p = 0.179) and not statistically significant, which means that the pooled OLS model is more appropriate than the random effects model.[63] Further, the F-test value is found to be 1.09 (p = 0.364) and not statistically significant. Therefore, we cannot reject the null hypothesis that no fixed effects (group and time) are needed; hence, the pooled OLS is favoured over the fixed

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[63] Breusch and Pagan (1980) have developed a Lagrange multiplier test for the random effects model based on the OLS residuals, which helps to determine between random effects and pooled OLS regressions.

$H_0: \sigma_{it}^2 = 0$
$H_1: \sigma_{it}^2 \neq 0$

Where, the null hypothesis is that variances across entities are zero, in other words no significant difference across entities, hence no panel effect. This means that the null hypothesis states that the pooled OLS is appropriate rather than the random effects, if it holds. Nevertheless, if the null hypothesis is rejected, that means that there is panel effect and the random effects model is appropriate (Greene, 2003).

effects model as well.[64] Since both null hypothesis of Lagrange Multiplier test and F-test are not rejected, the pooled OLS is consequently the most appropriate model and therefore the following results regarding the Lintner (1956) model are reported, based on the pooled OLS estimations. This is consistent with Al-Najjar (2009), who found the pooled OLS model is more favourable than panel models. Aivazian *et al.* (2003a) too obtained their estimations by the pooled OLS regressions. However, Adaoglu (2000) reported that the random effects model is more suitable to examine dividend behaviour of Turkish firms during the period 1985-1997 by applying the Lintner model. In addition, it is worth noting that, the Hausman[65] specification test compares fixed and random effects models in order to decide which one is more favourable. Nevertheless, as the pooled OLS model is found to be more appropriate than the panel models in this study, the Hausman specification test is not needed.

3.   The R-squared value of 81.4 is very high and suggests that the model is able to explain about 81% of the variation in cash dividend payments in the ISE-listed firms. This is consistent with Lintner's (1956) original study that reported the R-squared value of 85% in the US, Adaoglu's (2000) research that found the adjusted R-squared value of 89% in Turkey, Al-Najjar's (2009) empirical work that showed the R-squared value of 80% in Jordan, and Chemmanur *et al.* (2010) who reported the adjusted R-squared values of 84% in the US and 86% in Hong Kong in their study.

4.   Lintner (1956) found that the regression constant was significant and positive in his original model. He interpreted this finding as the indication that US managers are reluctant to avoid dividend cuts even when earnings decrease, unless adverse circumstances are likely to persist. The regression constant for the ISE-listed firms is found also to be positive (3.8 million TL) but not significant, suggesting that there is a

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[64] The F-test compares a fixed effect model with a pooled OLS model. In a regression model of that $Y_{it} = \alpha + \mu_i + X_{it}'\beta + \varepsilon_{it}$, the null hypothesis is that all dummy parameters except for one for the dropped are all zero;

$H_0 = \mu_1 = \dots = \mu_{n-1} = 0$

The alternative hypothesis is that at least one dummy parameter is not zero. If the null hypothesis rejected (at least one group/time specific intercept is not zero), it may be concluded that there is a significant fixed effect; therefore, the fixed effects model is better than the pooled OLS (Park, 2011).

[65] Hausman (1978) proposed a test based on the difference between the random effects and fixed effects estimates by testing the correlation between the explanatory variables (X) and the individual random errors (u_i). Since the fixed effects model is consistent when u_i and X_{it} are correlated but the random effects model is inconsistent, a statistically significant difference is interpreted as evidence against the random effects assumptions. Hausman test checks for strict exogeneity, if no correlation is detected then the random effects should be employed. Further, the test implements the null hypothesis that the random effects estimator is more efficient than the fixed effects estimator (Wooldridge, 2010).

tendency for the Turkish firms to not decrease their cash dividends, but they are not as reluctant as the US companies.

5.   The empirical results show that current earnings and lagged cash dividend payments are positively significant factors in determining current cash dividend payments of the listed Turkish firms, since the regressions coefficients of earnings and lagged cash dividends are found to be positive and significant at the 1% significance level. This indicates that the Lintner's (1956) partial adjustment model works well for explaining cash dividend policy behaviour of the ISE firms during the period 2003-2012, after Turkey implemented major economic and structural reforms in 2003 as well as adopting more flexible mandatory dividend policy regulations and attempting to prevent insider lending (non-arm's length transactions). This is inconsistent with earlier research (Adaoglu, 2000; Aivazian, 2003a), which showed no support to the validity of the Lintner model in the Turkish market; possibly due to the relatively much poorer structural and microeconomic policies, poorer culture of corporate governance, transparency and disclosure practices, with weaker minority investors protections and the presence of rigid mandatory dividend policy imposed to the ISE firms during the earlier periods. Therefore, we can accept *Hypothesis 1 that cash dividend payments are the functions of the level of net earnings and the pattern of dividends paid in the previous year in the Turkish market.*

4.4.2   Robustness Check for the Lintner (1956) Model

One of the major advantages of panel data is the ability to model individual dynamics. A dynamic model can be estimated on an individual level by including one or more lagged values of the dependent variable among its explanatory variables (Baltagi, 2002). Indeed, Lintner's (1956) partial adjustment model suggests that the current behaviour of cash dividend payments depends upon the past behaviour of cash dividends along with the current level of earnings.

Although Gujarati (2003) argues that the partial adjustment model can be consistently estimated by the OLS,[66] adding a lagged dependent variable in the right-hand side of the

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[66] The *partial adjustment model (PAM)* or also called the *stock adjustment model*, provided by Marc Nerlove, is examined with regard to the lagged dependent variable and stochastic term. The model considers that there is equilibrium*, optimal, desired* or *long-term* amount of capital stock needed to provide a given output under the given state of interest. For simplicity let this desired level of capital (Y^*) be a linear function of output X as follows (Gujarati, 2003):

$Y_t{}^* = \alpha + \beta_1 X_t + u_t$

equation may complicate the estimation and, if the lagged dependent variable is correlated with the error term, then the OLS estimation results become inconsistent and biased (Greene, 2003).[67] Accordingly, a more advanced method, namely the "System Generalised Method of Moments (GMM)" is also employed to estimate the Lintner (1956) model on the Turkish sample, to provide more robust results, and to find out whether the pooled OLS model findings are consistent compared to the system GMM specification results.

Since the desired level of capital (Y_t^*) is not directly observable, Nerlove develops the following proposition, as the partial adjustment hypothesis:

$$Y_t - Y_{t-1} = \delta (Y_t^* - Y_{t-1})$$

Where, δ is known as the *coefficient of adjustment*, or *speed of adjustment*, and varies between zero and a unit $(0 < \delta \leq 1)$. Further, $Y_t - Y_{t-1}$ is the actual change and $(Y_t^* - Y_{t-1})$ is the desired change. As the change in capital stock between two periods is nothing but investment, then it can be written as:

$$I_t = \delta (Y_t^* - Y_{t-1})$$

Where, I_t is the investment at time t. Hence, the equation suggests that the actual change in investment in any given time is some fraction speed of adjustment, δ, of the desired change for that time period. If $\delta = 1$, it means that the actual stock of capital is equal to the desired stock in where the actual stock adjusts to the desired stock immediately in the same time period. On the other hand, if $\delta = 0$, it means that nothing changes since the actual stock in period t is the same as in the previous time period. Further, the adjustment mechanism can also be expressed as follows:

$$Y_t = \delta Y_t^* + (1-\delta)Y_{t-1}$$

Indicating that the actual capital stock at period t is a weighted average of the desired capital stock and at that period and the lagged capital stock, and δ and $(1-\delta)$ are being the weights. Now substitution of the adjustment mechanism into the linear model gives:

$$Y_t = \delta\alpha + \delta\beta_1 X_t + (1-\delta)Y_{t-1} + \delta u_t$$

This final form of the model is called the partial adjustment model. In this equation, once the speed of adjustment coefficient, δ, is estimated (from the coefficient of the lagged dependent variable, which would be $\beta_2 = 1-\delta$), the long-run function can be easily derived by basically dividing $\delta\alpha$ and $\delta\beta_1$ by δ and omitting the lagged dependent variable (Gujarati, 2003).

In short, if an explanatory variable in a regression model is correlated with the stochastic disturbance term, the OLS estimators are biased and inconsistent, even the sample size is increased indefinitely, the estimators do not approximate their true population values (in the case of distributed-lag model, where the current and lagged values of explanatory variables in the regression). However, the partial adjustment model is different and it can be consistently estimated by OLS despite the presence of the lagged dependant variable. Because, in the partial adjustment model, disturbance term is δu_t, where $0 < \delta \leq 1$ and although the lagged dependent variable, Y_{t-1}, depends on u_{t-1} and all the previous disturbance terms, it is not related to current error term, u_t . Hence, as long as u_t is serially independent, Y_{t-1} will also be independent or at least uncorrelated with u_t, then satisfying an important assumption of OLS that is non-correlation between explanatory variables and stochastic disturbance term (Gujarati, 2003).

[67] Similarly, substantial complications may also arise in estimation of such a model in both fixed effects and random effects setting when a lagged dependent variable appears as an explanatory variable and is correlated with the error term(s). If the individual effects are treated as fixed, then the number of individual specific parameters increases with the number of cross-sectional units, N, but over only a short period of time in where the fixed effects formulation is no longer consistent in that case. Further, when the individual specific effects are treated as random and the lagged dependent variable is correlated with the compound disturbance in the model, the problem is more obvious since the same individual specific effects enter the equation for every observation (Hsiao, 1986; Greene, 2003).

Arellano and Bond (1991) suggest a GMM estimator based on a first-differenced equation in order to deal with the dynamic panel model, where the differences are instrumented by lagged levels of the regressors, providing heteroscadasticity-consistent and asymptotically correct standard errors for statistical inferences. Nevertheless, the first-differenced GMM method has some econometric weaknesses. For instance, Blundell and Bond (1998) show that when the explanatory variables are persistent over time, the lagged levels of these variables are weak instruments for the regression model expressed in first-differences. Second, the coefficients of time invariant explanatory variables, such as industry dummies, cannot be estimated, since the first-differencing transformation eliminates these variables from the equation (Ngobo *et al.*, 2012).

Moreover, Blundell and Bond (1998) develop another estimator – the System GMM – derived from a system of two simultaneous equations; one in levels with lagged first differences as instruments, and the other in first differences with lagged levels as instruments (Presbitero, 2006). The system GMM estimation technique can significantly improve efficiency as well as preventing the weak instruments problem in the first-differenced GMM estimator, allowing for time-invariant variables that would be eliminated in a difference GMM (Blundell and Bond, 1998; Roodman, 2006; 2009). Therefore, the Lintner (1956) partial adjustment model based on 1,846 firm-year observations from 264 firms listed on the ISE over the period 2003-2012 is also re-estimated by using the system GMM estimator in order to deal with the dynamic panel model where a lagged dependent variable is included in the right hand-side of the equation as an explanatory variable (consistent with a number of studies such as Presbitero, 2006; Antonios *et al.,* 2006; Ngobo *et al.*, 2012; He, 2012; Caixe and Krauter, 2013).

In using the system GMM on estimating the Lintner model, the lagged cash dividend payments variable is treated as predetermined, whereas the current year earnings and industry dummies are defined as exogenous in the equation. Furthermore, the two-step system GMM estimator that uses one-step residuals to build the asymptotically optimal weighting matrix is applied, since it is more efficient than the one-step estimators in presence of heteroscedasticity and serial correlation (Davidson and MacKinnon, 2004). Although asymptotically more efficient, the two-step GMM shows estimates of the standard errors that may be severely downward biased, but this problem can be solved using Windmeijer (2005) standard error correction, which employs finite-sample correction to the two-step covariance matrix (Roodman, 2006). Hence, the two-step

robust system GMM is applied to estimate the model. In addition, small-sample adjustments (corrections that result in t instead of z test statistic for the coefficients and F instead of *Wald X^2* test for overall fit) and orthogonal deviations (maximising sample size in panels with gaps) are used to make the estimations even more robust, as suggested by Roodman (2006; 2009). The system GMM estimation results are presented in the last column of Table 4.5 and the following conclusions can be drawn.

1.   The overall system GMM regression model is significant at the 1% level as evidenced by F-statistic. However, the validity of the results also depends on the adequacy of the model for the assumptions in the system GMM. Arellano-Bond (1991) test checks for serial correlation; if the model is well specified, then we expect to reject the null hypothesis of no autocorrelation of the first order (AR(1)), and to accept the null hypothesis of no autocorrelation of the second order (AR(2)). Accordingly, as can be observed from Table 4.5, the Arellano-Bond first-order and second-order tests for autocorrelation in the residuals rejected and accepted, respectively, the null hypothesis of no autocorrelation for the model, as required by Arellano and Bond (1991), which support the model specification.

2.   Furthermore, the Hansen's (1982) overidentification test (J statistic) checks for the validity of instruments, where non-rejection of the null hypothesis suggests that the instrument set can be considered valid, which means that a higher p-value of the Hansen statistic is better (a perfect p-value of Hansen statistic would be 1.00). In this context, the system GMM specification of the Lintner model applied on the Turkish sample passes the Hansen J statistic test (corresponding p-value of 0.216) for overidentifying restrictions, confirming that the instruments are valid in the model, since it did not reject the null hypothesis for the conventional significance levels (1%, 5% and 10%).[68] It is worth noting that Roodman (2006; 2009) emphasises to mind and report the instrument count. As a rule of thumb, the number of instruments should not exceed the number of N (cross-sectional units - firms in this study); otherwise, too many instruments can overfit endogenous variables and fail to expunge their endogenous components, which consequently weaken the power of the Hansen test. However, the quantity of the instruments used in the model (59) is considerably lower than the number of firms (264), suggesting the robustness of the results.

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[68] However, Roodman (2009) suggests that not only the conventional significance levels (1%, 5% and 10%) but also higher significance levels, such as the 25%, should be considered while checking a Hansen test p-value and any values below the 25% level may be seen as potential signs of trouble.

3. The regression constant is positive but not significant, as in the pooled OLS model.

4. The estimated coefficients on the lagged cash dividend and current earnings are both positive and statistically significant at the 1% level, indicating that the Lintner's (1956) partial adjustment model works well for explaining cash dividend policy behaviour of the ISE-listed firms during the period 2003-2012. Consequently, one can observe that the system GMM estimations are very similar to those in pooled OLS regression model; therefore, this confirms more valid, robust and reliable results from both estimation methods.

4.4.3 Implications of the Linter (1956) Model in the Turkish Market

The model developed by Lintner (1956) suggests that all companies have a target payout ratio r (hereafter TPR) and companies do not move immediately to the target dividend payments, but instead, smooth out changes in their dividends by moving part of the way to the target dividend payments each year. The speed with which companies adjust their cash dividends is defined by the speed of adjustment c (hereafter SOA) parameter shows how responsive a company's cash dividends are to changes in earnings. A lower value of c indicates a slower adjustment, while a higher value of c indicates speedier adjustment ($0 < c \leq 1$). Accordingly, the SOA parameter of 1.00 is at its maximum level, implying that the companies do not adjust or smooth their cash dividends; they basically rely on their long-run target payout ratios. Then, a reverse argument is valid for the SOA values that are close to zero, meaning that those companies smooth their cash dividend payments and slowly adjust to their TPRs.

As Table 4.5 presents the TPR (r) is 42.7% (0.146/0.342) and the SOA (c) parameter is 0.342 (1-0.658) for the ISE-listed firms based on the pooled OLS estimations (because it is found to be more favourable than the panel models). Further, the system GMM estimation results confirm very similar TPR, $r = 42.9\%$ (0.133/0.310) and SOA parameter, $c = 0.310$ (1-0.690) for the firms in Turkish market, consistent with the pooled OLS model, which suggest that ISE-listed firms adjust their cash dividend payments towards their target payout ratios and that Turkish firms smooth their dividends and therefore follow stable cash dividend policies over the period 2003-2012.

Adaoglu (2000) found the SOA factor was 1.00, which was at its maximum level and means that the ISE-listed firms did not smooth their cash dividends during the earlier years between 1985 and 1997, while they were obliged to pay at least 50% of their

distributable profit as cash dividends by the first mandatory dividend policy imposed by the CMB. During this period, he also found that the TPR was 51.7%, which was consistent with the mandatory dividend policy requirement. Therefore, not surprisingly, the main factor determined the cash dividend payments was the level of current earnings in a given year, and any variability in the earnings of the firm was directly reflected in the level of cash dividends. Consequently, the Turkish firms followed unstable dividend policies. The empirical results in this chapter, however, are contradictory to Adaoglu's (2000) findings and indicate that the ISE firms do indeed adjust their cash dividend payments toward their target payout ratios by smoothing their dividends and employing stable cash dividend policies over the period 2003-2012.

Various studies have examined corporate dividend behaviour using the Lintner model in developed and emerging markets. Table 4.6, on the next page, reports the estimates of the Lintner parameters, namely the SOA and TPR, from the present, and a number of previous empirical studies conducted in different markets or time periods for comparison purposes. The SOA obtained in the current study (0.34 based on the pooled OLS and 0.31 based on the system GMM) is very close to the value of 0.30 obtained by Lintner (1956) and relatively lower than the value of 0.45 reported by Fama and Babiak (1968) for US companies. Moreover, Brav *et al.* (2005) found that the SOA estimates of US firms are 0.66, 0.35 and 0.22 for the periods 1950-1964, 1965-1983 and 1984-2002 respectively. The present study estimate is lower than that for the first period and close to the one in the second period, but higher than the estimate provided for the third period. Recently, Chemmanur *et al.* (2010) reported SOA estimate of 0.28 for US companies, which is slightly lower than that of the current study for ISE firms. However, Dewenter and Warther (1998) found much smoother SOA estimates of 0.06 and 0.09 for US and Japanese firms respectively over the period 1983-2002.

Compared to the other emerging markets, the SOA of the current research is much lower than that found by Mookerjee (1992) for India ($c = 0.73$), Al-Najjar (2009) for Jordan ($c = 0.43$), Chemmanur *et al.* (2010) for Hong Kong ($c = 0.68$) and Al-Ajmi and Abo Hussain (2011) for Saudi Arabia ($c = 0.71$) but slightly higher than that documented by Al-Malkawi *et al.* (2014) for Oman ($c = 0.26$). Therefore, it can be concluded that the ISE-listed firms generally have lower speed of adjustment factors, hence higher smoothing and more stable dividend policies compared to the other emerging markets, and they now smooth their dividend payments as their counterparts in the developed US market.

Table 4.6 Summary of Empirical Studies on Lintner's (1956) Parameters

The table illustrates the estimates of the Lintner parameters, namely the speed of adjustment and target payout ratio, from the present and a number of previous empirical studies conducted in different time periods or markets.

Study	Market	Period	SOA	TPR
Lintner (1956)	USA	1918-1953	0.30	0.50
Fama & Babiak (1968)	USA	1946-1964	0.45	0.33
Mookerjee (1992)	India	1950-1981	0.73	0.85
Dewenter & Warther (1998)	USA	1983-1992	0.06	-
	Japan	1983-1992	0.09	-
Adaoglu (2000)	Turkey	1985-1997	1.00	0.52
Pandey (2001)[a]	Malaysia	1993-2000	0.20 to 0.63	0.12 to 0.76
Brav *et al.* (2005)	USA	1950-1964	0.66	0.35
		1965-1983	0.35	0.24
		1984-2002	0.22	0.11
Al-Najjar (2009)	Jordan	1994-2003	0.43	0.48
Chemmanur *et al.* (2010)	USA	1984-2002	0.28	-
	Hong Kong	1984-2002	0.68	-
Al-Ajmi & Abo Hussain (2011)	Saudi Arabia	1990-2006	0.71	0.43
Al-Malkawi *et al.* (2014)	Oman	2001-2010	0.26	0.79
Present Study – by the pooled OLS	Turkey	2003-2012	0.34	0.43
Present Study – by the system GMM	Turkey	2003-2012	0.31	0.43

Notes: SOA= Speed of adjustment, TPR = Target payout ratio. [a] The study used the Lintner model to test the stability of the Malaysian firms in six different industrial sectors and reported the SOA and TPR values that vary considerably across the industrial sectors.

Another parameter of interest is whether the ISE firms have a TPR or not. Lintner (1956) argues that companies set a long-term target payout ratio and adjust gradually toward the target. Accordingly, the TPR of 43% (based on both the pooled OLS and system GMM), reported in the present study is comparatively higher than the observed mean payout ratio of 24% (see Table 4.1), which suggests that the ISE firms do have long-term target payout ratios and set binding long-term target payout ratios by moving gradually to their target, consistent with Lintner's prediction.

4.4.4 Further Analyses

This part presents the empirical results from several extensions of Lintner's (1956) partial adjustment model by including additional explanatory variables into the model. These variables are observed in the literature and considered to be possibly influencing the dividend policy of the firms in the emerging Turkish market, especially during the study sample period 2003-2012.

4.4.4.1 The Effect of Adding Lagged Earnings in the Lintner (1956) Model

Table 4.7 below reports the results of pooled OLS, panel models (random effects and fixed effects) and robustness check (the system GMM) estimations for the analyses when the lagged earnings variable is included into the basic Lintner model as an explanatory variable (Model 2). The following results are drawn from the table.

Table 4.7 Results of adding Lagged Earnings in the Lintner (1956) Model

Dependent Variable: Cash Dividends$_{(t)}$		Panel Models		Robustness Check
Independent Variables:	Pooled OLS	Random Effects	Fixed Effects	The System GMM
Earnings$_{(t)}$	0.059***	0.055***	0.060***	0.057***
	(4.98)	(3.81)	(3.14)	(3.88)
Earnings$_{(t-1)}$	0.189***	0.221***	0.228***	0.187***
	(3.62)	(3.61)	(3.44)	(3.11)
Cash Dividends$_{(t-1)}$	0.594***	0.577***	0.142	0.615***
	(6.74)	(6.72)	(1.25)	(8.10)
Constant	-0.818	-1.619	5.523	-1.619
	(-0.92)	(-0.75)	(1.50)	(-1.41)
Industry dummies	Yes	Yes	-	Yes
The target payout ratio (r)[69]	-	-	-	-
The speed of adjustment (c)	0.406	0.423	0.858	0.385
Number of Observations	1,846	1,846	1,846	1,846
F-Statistic	43.55***	-	6.41***	115.31***
Wald X^2	-	579.29***	-	-
R-Squared	83.7%	83.3%	76.7%	-
Lagrange Multiplier Test		0.95		
F-Test		1.38		
Hausman Test[†]		-		
Arellano-Bond test for AR(1)				Pr > z = 0.073
Arellano-Bond test for AR(2)				Pr > z = 0.142
Hansen overidentifying test				Pr > chi2 = 0.258
Number of instruments				60

Notes: Table reports coefficients and t/z-statistics in the parenthesis. The pooled OLS and fixed effects models are corrected using White's corrected heteroscedasticity robust regressions. Robustness Check analysis is estimated using Blundell and Bond's (1998) the system GMM. The two-step, robust (standard error correction), small (corrections that result in *t* instead of *z* test statistic for the coefficients and *F* instead of *Wald X^2* test for overall fit) and orthogonal (maximising sample size in panels with gaps) commands are used to make the estimations even more robust. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. [†]Since the pooled OLS model is found to be more favourable, Hausman specification test, which compares the fixed and random effects models, is not needed.

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[69] Since the lagged earnings variable is added into the model, the target payout ratio cannot be calculated as proposed by the Lintner (1956) model.

1.   The overall pooled OLS model is significant at the 1% level as evidenced by the F-statistic. Similarly, panel models (the random effects model at the 1% level as evidenced by the Wald X^2 and the fixed effects model at the 1% level as evidence by the F-statistic) are overall significant. However, the Lagrange Multiplier test statistic of 0.95 (p = 0.329) and the F-test value of 1.38 (p = 0.202) are both not statistically significant. This suggests that the pooled OLS model is more appropriate than the panel models and therefore the following results are reported based on the pooled OLS estimations.

2.   When the lagged net earnings variable is added on the right-hand side of the basic Lintner model, the R-squared value of the model increases to 83.7% from 81.4%, which is consistent with Fama and Babiak's (1968) study.[70]

3.   The results show that the current and lagged earnings, and lagged cash dividends variables are all found to be positive and statistically significant at the 1% level, as suggested by Fama and Babiak (1968). Therefore, we can accept *Hypothesis 2 that cash dividend payments are the functions of the level of net earnings and lagged net earnings, and the pattern of dividends paid in the previous year in the Turkish market.*

4.   The coefficients of both current and lagged earnings are significantly positive but the coefficient of lagged net earnings (0.189) is considerably much bigger than the current net earnings (0.059). This suggests that current earnings encourage firms to increase/decrease their cash dividends, but the levels of lagged earnings are the dominant component in terms of net earnings numbers, while the ISE firms make their dividend policy decisions in order to avoid spectacular and frequent changes. Then again, this finding is inconsistent with Adaoglu (2000), who reported the main factor that determined the amount of cash dividends was the net earnings of the ISE firms in that year over the period 1985-1997. Also, the positive and highly significant lagged cash dividends coefficient of 0.594 with a speed of adjustment factor of 0.406 (1-0.594) reveals that the ISE firms follows stable cash dividend policies.

5.   Moreover, the system GMM estimation is employed to check the robustness of the pooled OLS results. The overall system GMM model is significant at the 1% level

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[70] Fama and Babiak (1968) found that the basic Lintner model, including a constant term, current net earnings and lagged dividends, generally performs well relative to other models; nevertheless, deleting the constant term and adding the lagged earnings leads to a slight improvement in the predictive power of the model. In the case of this study, if the constant term is also deleted as well as adding the lagged earnings into the basic Lintner model, the R-squared value increases to 84.3%, which is slightly better than 83.7%.

as evidenced by the F-statistic. The Arellano and Bond (1991) first-order and second-order tests for autocorrelation in the residuals are rejected (at the 10% level) and accepted, respectively, the null hypothesis of no autocorrelation for the model, which show support to the model specification. Further, Hansen's overidentification test (*J* statistic) confirms that the instruments are valid in the model, since it did not reject the null hypothesis (corresponding p-value of 0.258) for both the conventional significance levels (1%, 5% and 10%) and 25% level suggested by Roodman (2006; 2009). In addition, the quantity of the instruments used in this model (60) is significantly lower than the number of firms (264), suggesting the robustness of the results. Consequently, the system GMM model also reports that the current earnings, lagged earnings and lagged cash dividends variables are all positive and statistically significant at the 1% level. Therefore, it can be said that the system GMM estimations provide consistent and robust results with the pooled OLS estimations.

4.4.4.2 The Effect of Adding External Finance (Debt) in the Lintner (1956) Model

Table 4.8 on the following page reports the results of pooled OLS, panel models (random effects and fixed effects) and robustness check (the system GMM) estimations for the analyses, when the current and lagged total debt variables (reflecting external finance) are added into the basic Lintner model as additional explanatory variables (Model 3). The following results are drawn from the table.

1.   The overall pooled OLS model is significant at the 1% level as evidenced by the F-statistic. Likewise, the random effects model at the 1% level as evidenced by the Wald X^2 and the fixed effects model at the 1% level as evidence by the F-statistic are overall significant. However, the Lagrange Multiplier test statistic of 1.60 (p = 0.205) and the F-test value of 0.90 (p = 0.512) are both not statistically significant; therefore, the pooled OLS model is more appropriate than the panel models. Accordingly, the following results are reported based on the pooled OLS estimations.

2.   Following Mookerje (1992), the current total debt and lagged total debt of the firms are included in the basic Lintner (1956) model as explanatory variables. The R-squared value of 82.2%, which is slightly higher than the R-squared value of 81.4% obtained by the basic Lintner model, suggesting that the modified model is able to explain about 82% of the variation in cash dividend payments of the ISE firms.

Table 4.8 Results of adding External Finance in the Lintner (1956) Model

Dependent Variable: Cash Dividends$_{(t)}$

Independent Variables:	Pooled OLS	Panel Models		Robustness Check
		Random Effects	Fixed Effects	The System GMM
Earnings$_{(t)}$	0.162***	0.187***	0.107**	0.153***
	(4.09)	(4.22)	(2.55)	(4.22)
Cash Dividends$_{(t-1)}$	0.642***	0.630***	0.182	0.663***
	(6.52)	(6.43)	(1.16)	(10.28)
Debt$_{(t)}$	-0.043**	-0.044**	-0.051**	-0.042**
	(-2.24)	(-2.14)	(-2.05)	(-2.18)
Debt$_{(t-1)}$	-0.053**	-0.057**	-0.047**	-0.052**
	(-2.57)	(-2.51)	(-1.98)	(-2.41)
Constant	0.141	-2.249	10.43***	0.622
	(0.01)	(-0.22)	(3.99)	(0.53)
Industry dummies	Yes	Yes	-	Yes
The target payout ratio (*r*)	0.452	0.505	0.130	0.454
The speed of adjustment (*c*)	0.358	0.370	0.818	0.337
Number of Observations	1,846	1,846	1,846	1,846
F-Statistic	32.56***	-	4.54***	124.14***
Wald X^2	-	531.28***	-	-
R-Squared	82.2%	82.1%	77.2%	-
Lagrange Multiplier Test		1.60		
F-Test		0.90		
Hausman Test†		-		
Arellano-Bond test for AR(1)				Pr > z = 0.020
Arellano-Bond test for AR(2)				Pr > z = 0.355
Hansen overidentifying test				Pr > chi2 = 0.260
Number of instruments				120

Notes: Table reports coefficients and t/z-statistics in the parenthesis. The pooled OLS and fixed effects models are corrected using White's corrected heteroscedasticity robust regressions. Robustness Check analysis is estimated using Blundell and Bond's (1998) the system GMM. The two-step, robust (standard error correction), small (corrections that result in *t* instead of *z* test statistic for the coefficients and *F* instead of *Wald X^2* test for overall fit) and orthogonal (maximising sample size in panels with gaps) commands are used to make the estimations even more robust. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. †Since the pooled OLS model is found to be more favourable, Hausman specification test, which compares the fixed and random effects models, is not needed.

3.   The table demonstrates that the current earnings and lagged cash dividends are positive and highly significant at the 1% level, whereas the current and lagged total debt are also statistically significant at 5% level but negatively correlated with the cash dividend payments. Therefore, we can accept *Hypothesis 3 that cash dividend payments are the functions of the level of net earnings, the pattern of dividends paid in the previous year and the level of current and lagged external finance in the Turkish market.* This significant negative relationship is contrary to Mookerjee's (1992) study, which revealed that Indian firms used external finance to augment cash dividend

payments over the period 1950-1981, since the availability of bank loans were provided to Indian firms at subsidized rates during that time. On the other hand, the CMB attempted to prevent insider lending, in other words non-arm's length transactions, as a source of financing with the introduction of "Regulation on Establishment and Operations of Banks" in July 2001, especially for the ISE firms, which generally belong to business group companies (including banks, businesses and subsidiaries in the same group) and obtained much of their finance from their own group banks. Consequently, the ISE firms turned to the capital markets with a greater incentive for more transparent financing. Therefore, the significant negative correlation between the cash dividends and both the current and lagged level of total debt possibly reflects that the ISE corporations find external financing that they now obtain from arm's length parties are more costly.

4. Moreover, the robustness check column of the table shows that the overall system GMM model is significant at the 1% level as evidenced by the F-statistic. The Arellano and Bond (1991) first-order and second-order tests for autocorrelation in the residuals are rejected (at the 5% level) and accepted, respectively, the null hypothesis of no autocorrelation for the model, which show support to the model specification. Further, Hansen's overidentification test (J statistic) confirms that the instruments are valid in the model, since it did not reject the null hypothesis (corresponding p-value of 0.260). Also, the quantity of the instruments used in this model (120) is significantly lower than the number of firms (264), suggesting the robustness of the results. The system GMM model also estimates that the current earnings and lagged dividends are positive and highly significant at the 1% level, whereas the current and lagged total debt are also statistically significant at the 5% level but negatively related to the current year cash dividend payments. Consequently, the system GMM estimations provide consistent and robust results with the pooled OLS estimations.

4.4.4.3 The Effect of Adding Year Dummies in the Lintner (1956) Model

Table 4.9 on the next page reports the results of pooled OLS, panel models (random effects and fixed effects) and robustness check (the system GMM) estimations for the analyses, when the yearly dummies from 2008 to 2012, reflecting the 2008 global crisis and its impact in the subsequent years, are added into the basic Lintner model (Model 4). The following results are drawn from the table.

Table 4.9 Results of adding Year Dummies in the Lintner (1956) Model

Dependent Variable: Cash Dividends$_{(t)}$

Independent Variables:	Pooled OLS	Panel Models		Robustness Check
		Random Effects	Fixed Effects	The System GMM
Earnings$_{(t)}$	0.146***	0.163***	0.087**	0.135***
	(4.01)	(4.03)	(2.61)	(3.47)
Cash Dividends$_{(t-1)}$	0.659***	0.647***	0.207	0.688***
	(6.44)	(6.31)	(1.35)	(9.02)
Year2008	2.871	3.646	6.294	2.338
	(0.97)	(0.75)	(1.29)	(1.26)
Year2009	-4.921	-7.922	0.568	-3.444*
	(-1.51)	(-1.48)	(0.23)	(-1.83)
Year2010	1.587	2.651	4.580	0.438
	(0.39)	(0.40)	(1.22)	(0.18)
Year2011	1.718	1.334	6.229	0.402
	(0.33)	(0.15)	(1.20)	(0.13)
Year2012	0.151	0.078	6.642	0.026
	(0.06)	(0.02)	(1.49)	(0.01)
Constant	0.352	1.374	9.997***	0.194
	(0.04)	(0.53)	(3.11)	(0.17)
Industry dummies	Yes	Yes	-	Yes
The target payout ratio (r)	0.428	0.461	0.109	0.432
The speed of adjustment (c)	0.341	0.353	0.793	0.312
Number of Observations	1,846	1,846	1,846	1,846
F-Statistic	27.52***		7.42***	301.22***
Wald X^2	-	537.31***	-	-
R-Squared	81.4%	81.2%	79.8%	-
Lagrange Multiplier Test		1.00		
F-Test		0.73		
Hausman Test[†]		-		
Arellano-Bond test for AR(1)				Pr > z = 0.032
Arellano-Bond test for AR(2)				Pr > z = 0.305
Hansen overidentifying test				Pr > chi2 = 0.116
Number of instruments				64

Notes: Table reports coefficients and t/z-statistics in the parenthesis. The pooled OLS and fixed effects models are corrected using White's corrected heteroscedasticity robust regressions. Robustness Check analysis is estimated using Blundell and Bond's (1998) the system GMM. The two-step, robust (standard error correction), small (corrections that result in t instead of z test statistic for the coefficients and F instead of *Wald X^2* test for overall fit) and orthogonal (maximising sample size in panels with gaps) commands are used to make the estimations even more robust. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. [†]Since the pooled OLS model is found to be more favourable, Hausman specification test, which compares the fixed and random effects models, is not needed.

1.   The pooled OLS, random effects and fixed effects models are all overall statistically significant at the 1% level, but the Lagrange Multiplier test statistic of 1.00 (p = 0.317) and the F-test value of 0.73 (p = 0.603) are not statistically significant at all,

indicating that the pooled OLS model is more favourable than the panel models. Therefore, the following results are reported based on the pooled OLS estimations.

2.   When the year dummies (from 2008 to 2012) are included into the basic Lintner model, the R-squared value remains the same as in the basic Lintner model, which is found to be 81.4, suggesting that the model explains around 81% of the variations in cash dividend payments of the ISE firms.

3.   The pooled OLS estimations show that the current earnings and lagged cash dividends variables are positive and statistically significant at the 1% level, whereas the coefficients of the 2008, 2010, 2011 and 2012 year dummies have all positive signs with the exception of the 2009 dummy, which is found to be negative; however, none of the coefficients of the year dummies are statistically significant. This suggests that although the September 2008 global crisis markedly hit Turkey in various aspects[71] and abruptly interrupted the recent expansion of its economy as in many other world markets, including both developed and developing countries, it did not significantly affect cash dividend payments decisions of the ISE firms. Also, despite the global crisis, the ISE firms continue to follow stable dividend policies, possibly to signal the market about their good performance. This result is consistent with Al-Malkawi *et al.*'s (2014) finding, that the 2008 global crisis had no significant effect on dividend policy and dividend stability of Omani firms, and they even kept paying high dividends after the outbreak of the financial crisis. Indeed, the Turkish economy quickly started recovering from the global crisis starting the second quarter of 2009 by possessing challenges for fiscal and monetary policy, which required a careful balance between supporting the recovery and sustaining macroeconomic stability over the longer term (Rawdanowicz, 2010). They praised in having this swift recovery without aid from the IMF (Birol, 2011). Accordingly, the negative coefficient of the 2009 dummy possibly reflects the tendency of the ISE firms reducing their cash dividends as an initial reaction to the shocking global financial crisis experienced in late 2008. Since the Turkish economy swiftly started to recover from the crisis, the coefficients of the following year dummies are again found to be positive. However, the year dummies are not statistically

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[71] The September 2008 global financial crisis led to a rapid contraction in the world economy and financial markets and a deceleration in trade volume. Further, the global crisis significantly affected the Turkish economy mostly through four aspects. The first was the trading aspect with exports declined dramatically. The second was the expectation aspect as the household expectations worsened and hence reducing their consumption due to the financial turmoil. The foreign capital flows were the third aspect and cross-border lending was decreased during the crisis period. The last one was the credit supply since banks cut their lending during the crisis, which resulted in a sharp decline in economic activity and an increase in unemployment (Yorukoglu and Atasoy, 2010).

significant in any cases. Nor are they affecting the validity of the basic Lintner model, or the stability of the ISE firms' dividend policies. Therefore, we cannot accept *Hypothesis 4.*

4.   Furthermore, the robustness check column of the table shows that the overall system GMM model is significant at the 1% level as evidenced by the F-statistic. The Arellano and Bond (1991) first-order and second-order tests for autocorrelation in the residuals are rejected (at the 5% level) and accepted, respectively, the null hypothesis of no autocorrelation for the model, which show support to the model specification. Further, Hansen's overidentification test (*J* statistic) confirms that the instruments are valid in the model, since it did not reject the null hypothesis (corresponding p-value of 0.116). Also, the quantity of the instruments used in this model (64) is significantly lower than the number of firms (264), suggesting the robustness of the results. The system GMM model also estimates that the current earnings and lagged dividends are positive and highly significant at the 1% level, whereas the coefficients of the 2008, 2010, 2011 and 2012 year dummies have all positive signs but are insignificant, with the exception of the 2009 dummy, which is found to be negative and even slightly significant (at the 10% level). Therefore, the system GMM estimations provide consistent and robust results in line with the pooled OLS estimations.

4.5   Conclusions

This chapter of the study investigates the information content of cash dividend payments after the implementation of major economic and structural reforms, starting with the fiscal year 2003 in the Turkish market. Turkey offers an ideal setting to study the dividend behaviour of an emerging economy (a civil law originated country), which employed the common laws in order to integrate with world markets. Therefore, the study focuses on a recent panel dataset of 264 companies (non-financial and non-utility) listed on the ISE, over a ten-year period 2003-2012, including 1,846 firm-year observations. In particular, it empirically examines whether the ISE-listed firms adopt deliberate dividend policies to signal information to investors and whether they follow stable dividend policies, as in developed markets, by using Lintner's (1956) partial adjustment model over a decade after the mandatory dividend policy regulations are considerably relaxed and insider lending (non-arm's length transactions) is prevented as a source of financing, along with the implementation of major reforms in 2003. Further,

the study also considers several extensions of Lintner's (1956) partial adjustment model by including additional regressors as explanatory variables that are observed in the literature and thought to be possibly influencing the dividend policy of the ISE firms during the study sample period. In addition, it employs richer research models (the pooled OLS, random effects, fixed effects and system GMM) in order to provide more valid, consistent and robust results.

The empirical results show that current earnings and lagged cash dividend payments are positively significant factors in determining current cash dividend payments of the listed Turkish firms. This indicates that the Lintner's (1956) partial adjustment model works well for explaining cash dividend policy behaviour of the ISE firms during the period 2003-2012, after Turkey implemented major economic and structural reforms in 2003, as well as adopting more flexible mandatory dividend policy regulations and attempting to prevent insider lending (non-arm's length transactions). This is contrary to earlier research (Adaoglu, 2000; Aivazian, 2003a) that showed no support to the validity of the Lintner model in the Turkish market; possibly due to the relatively much poorer structural and microeconomic policies, poorer culture of corporate governance, transparency and disclosure practices with weaker minority investors protections and the presence of rigid mandatory dividend policy imposed to the ISE firms during earlier periods.

Furthermore, the results reveal that ISE firms now adjust their cash dividends by a serious degree of smoothing (0.342 based on the pooled OLS and 0.310 based on the system GMM), which is generally much lower (hence higher smoothing and more stable dividend policies) compared to other emerging markets, and is almost as smooth as their counterparts in the developed US market. Then again, this finding is inconsistent with Adaoglu (2000) who reported a speed of adjustment factor of 1.00, implying that the ISE firms did not smooth their cash dividends during the earlier years between 1985 and 1997. It is also found that the target payout ratio of the ISE firms is 43% (based on both the pooled OLS and system GMM), which is comparatively higher than the observed average payout ratio of 24% for the listed firms. This suggests that the ISE companies do have long-term payout ratios and adjust gradually to their target, consistent with the Lintner's (1956) prediction, over the period 2003-2012.

Moreover, the empirical results from several extensions of Lintner's (1956) partial adjustment model show some important facts regarding the Turkish market over the

period that is under investigation. First, adding the lagged net earnings into the basic Lintner equation increases the predictive power of the model, as suggested by Fama and Babiak (1968), and suggests that current earnings encourage firms to increase/decrease their cash dividends. However, the levels of lagged earnings are the dominant component in terms of net earnings numbers while the ISE-listed firms make their dividend policy decisions in order to avoid spectacular and frequent changes, which is in line with Lintner's (1956) argument. Second, when external finance (current and lagged total debt) is included into the Lintner model, significantly negative correlations between the cash dividends and both the current and lagged level of total debt are found, which possibly reflects that the ISE corporations find external finance that they now obtain from arm's length parties more costly. This is because the CMB of Turkey attempted to prevent insider lending, in other words non-arm's length transactions, as a source of financing for business group companies. Third, yearly dummies from year 2008 to 2012 are added into the partial adjustment model in order to identify the effect of the 2008 global crisis and its impact in the following years. It is found that although the September 2008 global crisis markedly hit Turkey in various aspects and abruptly interrupted the recent expansion of its economy, as in many other world markets including both developed and developing countries, it did not significantly affect cash dividend payments decisions of the ISE firms, as well as their preferences of following stable dividend policies.

Consequently, the empirical findings suggest that implementing major economic and structural reforms, as well adopting more flexible mandatory dividend policy regulations and attempting to prevent insider lending (non-arm's length transactions), lead the ISE firms to follow the same determinants as suggested by Lintner (1956) and as followed by the US (developed) companies. Particularly, dividend payments of the ISE firms seem to be affected by previous dividend levels and current earnings. Furthermore, they attempt to adjust partially their dividends towards their target payout ratio, more interestingly with a relatively low speed of adjustment as their counterparts in developed markets. This implies that Turkish companies tend to smooth their dividends, and adopt stable dividend policies, and therefore it can be concluded that Turkish corporations have been using cash dividends as a signalling mechanism since 2003 with the implementation of severe economic and structural reforms.

CHAPTER 5

AGENCY COST THEORY, OWNERSHIP STRUCTURE EFFECT AND DIVIDEND POLICY: EVIDENCE FROM TURKEY

5.1 Introduction

This chapter investigates the link between ownership structure and dividend policy based on the agency cost theory of dividends for the ISE-listed firms since the fiscal year 2003, when Turkey began to implement serious economic and structural reforms for a better working of the market economy, outward-orientation and globalisation, in other words for market integration.

To the best of our knowledge, this chapter is the first to examine the impact of ownership structure on dividend policy in the emerging Turkish market. In particular, the chapter 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 payment decisions of the ISE-listed firms related to the agency cost theory argument, after Turkey implemented major economic and structural reforms in 2003.

In their classic study, Berle and Means (1932) drew attention to the prevalence of widely held corporations in which ownership structure of firms is dispersed among small shareholders but the control is concentrated in the hands of managers. The Berle and Means widely held corporation is extensively accepted in finance literature as a common organisational form for large firms in the richest common law countries such as the US, the 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 associated 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 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[72] 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

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[72] The traditional agency cost theory that drives from the owner (the principal)-manager (the agent) conflict is also referred to as Agency Problem I in this study like prior studies.

contrast, outside the developed countries, particularly emerging economies with poorer shareholder protection, the prevalence of the Berle and Means dispersed ownership structure is not representative for corporations in these markets. Indeed, various researchers reported that ownership is heavily concentrated at the hands of large controlling shareholders in developing economies across the world. For instance, La Porta *et al.* (1999) examined the ownership structures of large firms in 27 different countries and they reported that relatively few of these firms are widely held; rather they are heavily concentrated and are commonly controlled by families or the states. A majority of the developing economies in South America are governed by family-owned firms, according to Shleifer and Vishny (1997). Furthermore, Claessens *et al.* (2000) reported that single shareholder controls more than two-thirds of publicly-listed East Asian firms and about 40% of all listed companies are dominated by families. Similarly, Faccio *et al.* (2001) found that the predominant form of ownership in East Asia is family-control and this form is even more pronounced in West Europe, whereas Yurtoglu (2003) documented that families ultimately own 80% of all firms listed on the ISE in Turkey. In short, increasing evidence reveals that family firms are widespread around the world and occupy a growing importance in the economic globe. Accordingly, Daily *et al.* (2003) suggested that agency cost theory may function differently in family-controlled publicly listed firms and prior findings from widely held companies may not readily generalise into this setting. In the firms with significant family ownership and family control, the salient agency problem may be the expropriation of the wealth from minority owners by the controlling owners, also known as the *principal-principal conflict*.[73]

Moreover, a number of researchers have recently emphasised that it is extremely important to consider ownership structure of companies in emerging markets in understanding dividend policy related to the agency problems in these markets. For instance, Manos (2002) in India, Chen *et al.* (2005) in Hong Kong, Kouki and Guizani (2009) in Tunisia, Ramli (2010) in Malaysia, Wei *et al.* (2011) in China, Ullah *et al.* (2012) in Pakistan, Huda and Abdullah (2013) in Bangladesh, Aguenaou *et al.* (2013) in Morocco, Thanatawee (2013) in Thailand and Gonzalez *et al.* (2014) in Colombia have all indicated that ownership structure approach is highly relevant in explaining dividend policy based on agency cost theory. Consequently, agency cost theory of dividends needs to be uniquely investigated in emerging markets and, more importantly, the

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[73] The potential problems stem from the controlling and minority shareholders (the principal-principal conflict) is also referred to as Agency Problems II here like previous studies.

ownership structure of the firms in these markets should specifically be taken into account while identifying the proxies for agency cost variables.

As is the case in many other emerging markets, the concentrated ownership by large controlling shareholders is the dominant form of ownership structure 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). Further, Ararat and Ugur (2003) pointed out the specific corporate governance problems and the lack of efficient transparency and disclosure practices experienced by Turkish firms, possibly due to the concentrated and pyramidal ownership structures dominated by families who generally own business groups, including banks, businesses and subsidiaries in the same group (IIF, 2005; Aksu and Kosedag, 2005), and the inconsistent and unclear accounting and tax regulations, and the investors misinformation faced by the absence of inflation and consolidation accounting standards. As a result of this infrastructure, Ararat and Ugur (2003) suggested that agency problems are concentrated on asymmetric information, weak minority shareholders protection, inconsistent and unclear disclosure policies and convergence of ownership and management, which create an environment that may foster corruption, share dilution, asset stripping, tunnelling, insider trading and market manipulation.

Indeed, 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).

However, Turkey 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; Rawdanowicz, 2010). In this context, the 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 (CMB, 2003). Accordingly, one of the most important developments was that in cooperation with the World Bank and the Organisation for Economic Cooperation and Development (OECD), the CMB published its Corporate Governance Principles[74] in 2003, which was aimed to improve the ISE-listed firms' corporate governance practices (CMB, 2003; Caliskan and Icke, 2011).

Since the CMB Principles were published in 2003, many areas in terms of the legal and institutional environment for corporate governance and transparency and disclosure practices in Turkey have been improved. Turkish government and the CMB, together with some private sector organisations, such as the Turkish Industrialists and Businessmen's Association (TUSIAD), the Corporate Governance Forum of Turkey (CGFT), the Corporate Governance Association (KYD) and the Foreign Investors Association (YASED), have performed hard to improve the rules for corporate governance and transparency and disclosure (IIF, 2005; Caliskan and Icke, 2011). However, it is not realistic to expect an immediate effect of these performances and changes of laws and regulations to move towards much stronger minority shareholder rights. As Odabasi *et al.* (2004) stated, each country has its own history and contributors with their distinctive psycho-physical characteristics, and all of these characteristics are likely to influence the nature and the speed of evolution of the regulatory reforms.

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[74] The CMB Principles consisted of four major parts. The first part discussed shareholders' rights and their equal treatments involved with issues such as right to obtain and evaluate information, right to vote, right to join the general shareholders meeting, and more minority rights detailed in this part. The second part included principles related to the disclosure and transparency for establishing information policies in firms with respect to shareholders and the adherence of firms to these policies. The third part was concerned about firms' obligations for their stakeholders, including their workers, creditors, customers, suppliers, institutions, non-governmental organisations, the government and potential investors who may think of investing in these firms, in order to regulate the relationship between the firms and their stakeholders. The fourth part discussed the functions, duties, obligations, operations and the structure of the board of directors as well as the committees to be created to support the board operations and executives (CMB, 2003; 2004; Caliskan and Icke, 2011).

Yet the concept and implementation of corporate governance practices are rather new in Turkey. However, considering the various major economic and structural reforms carried out for a better working of the market economy, outward-orientation and globalisation, the prospect for integration with the EU and the competition of emerging markets to attract global foreign direct investment, corporate governance is the hot topic in Turkey as is the case in the world. Accordingly, Turkey's corporate governance practices could promptly improve toward a better legal framework and stronger minority shareholders rights in order to be more competitive and able to access capital from international markets (IIF, 2005; Caliskan and Icke, 2011).

Empirical research related to agency cost theory of dividends is extensive in developed markets but they generally assume that firms in these markets are widely held and the control is concentrated in the hands of managers, *the principal-managers conflict*, while examining whether dividends are used to reduce agency problems. However, a growing number of researchers have recently emphasised that it is extremely important to consider ownership structure of companies in developing markets, in understanding dividend policy related to the agency problems in these markets, since they have provided evidence that the ownership structures of companies in developing economies are not widely held. In fact, they have concentrated ownership structures, generally dominated by families. Therefore, in developing markets, the most salient agency problem is expropriation of the wealth of minority owners by the controlling shareholders, in other words *the principal-principal conflict*, so called Agency Problem II. Several studies have examined the relationship between family-control and dividend policy in emerging markets from Agency Problem II perspective but there has not yet been any research conducted examining the effect of families on dividend policy decisions in the emerging Turkish market, despite the fact that Turkish companies are mainly family-controlled.

Accordingly, the aim of this chapter of the thesis is to empirically investigate the link 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. Particularly, this chapter contributes to the dividend literature in the following aspects. First, Turkey offers an ideal setting to study the dividend behaviour of 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 ownership 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, starting with the fiscal year 2003. Third, it also focuses on investigating the effects of non-family blockholders, such as foreign investors, domestic financial corporations and the state, on dividend policy of Turkish firms over the relevant period. Fourth, it further attempts to detect the relationship between minority shareholders and dividend policy in the Turkish market. (v) Fifth, it uses a large-scale dataset that relatively covers a more recent long time period, employs richer research methodologies (the pooled and panel logit/probit and tobit regression analyses) and uses alternative dividend policy measures (the probability of paying dividends, dividend payout ratio and dividend yield). Finally, it attempts to answer the following research questions:

1.   Do families prefer higher/lower cash dividend payments in order to mitigate/exacerbate the wealth expropriation from outside shareholders in Turkey?

2.   What are the impacts of non-family blockholders (foreign investors, domestic financial corporations and the state) on dividend policy of Turkish firms?

3.   What is the attitude of minority shareholders toward cash dividend payments in the Turkish stock market?

4.   Is there any significant industry-effect for Turkish firms when industry dummies are included in the models?

5.   Are the pooled logit models more favourable to estimate the probability of paying dividends of Turkish firms or are the panel logit models more suitable rather than pooled models?

6.   Is the effect of ownership structure on the probability of paying dividends and the intensity of paying dividends of Turkish firms different from each other or the same?

7.   Are the tobit regressions results, which are used to estimate the intensity of paying dividends of Turkish firms, consistent with the logit regression results or significantly different? Are the pooled tobit models more favourable to estimate the intensity of paying dividends of Turkish firms, or are the panel tobit models more suitable rather than the pooled models?

8.   Do the tobit estimations provide the same or different results when the different measure of dividend policy, which stands for the intensity of paying dividends of Turkish firms, is applied?

The remainder of this chapter is organised as follows. The following section 5.2 reviews the previous studies and develops the research hypotheses. The methodology and data are explained in section 5.3. Section 5.4 presents the empirical results, whereas section 5.5 summarises the conclusions of this chapter of the study.

5.2   Previous Studies and Research Hypotheses

5.2.1   Agency Problems and Dividend Policy

In the corporate dividend policy literature, researchers focus on two kinds of agency problems. Following Berle and Means' (1932) analysis of the modern corporation, where ownership of capital is dispersed among small shareholders but control is concentrated in the hands of managers, the traditional agency cost theory (Agency Problem I) has stemmed from the conflict of interest between shareholders (the principal) and management (the agent) and the need has emerged for shareholders to monitor management behaviour. A relatively large number of studies have researched this type of managerial agency cost theory, which was developed by Jensen and Meckling (1976), Rozeff (1982) and Easterbrook (1984). Jensen and Meckling (1976) identified three components of agency costs: monitoring expenditures,[75] bonding expenditures[76] and residual loss,[77] respectively. Easterbrook (1984) argued that dividend payments are used to take away the free cash from the managers' control and pay it to shareholders. Paying larger dividends decreases the internal cash flow subject to

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[75] Jensen and Meckling (1976) argue that dividend payments force managers to raise external finance more frequently than they would without paying dividends and this allows outside professionals, such as investment banks, regulators, lawyers, public accountants and potential investors to scrutinize the firm and monitor its managers' activities. This capital market monitoring decreases the agency cost and increases the market value of the firm.

[76] Bonding expenditures are associated with the amount of cash flow at managers' disposal. Dividend payments would reduce the agency costs by controlling and improving the forms of incentives that managers create for themselves and reducing the amount of cash that they may misuse for their own consumption.

[77] Residual loss implies that managers with large balances of excess cash, so called *free cash flows*, may not use this cash in profitable ways that shareholders desire; for instance, investing in negative NPV projects or unwise acquisitions. However, dividends reduce the amount of excess cash that managers can overinvest or misuse.

management discretion and forces the company to approach the capital market in order to meet the funding needs for new projects. Increase of costly outside capital subjects to the company to the scrutiny of the capital market for new funds and decreases the chance of suboptimal investment. The efficient monitoring of capital markets also assists to ensure that managers perform in the best interests of shareholders. Thereby, dividend payments might serve as a means of monitoring and bonding management performance. Similarly, Jensen (1986) suggested that shareholders use dividends as a device to reduce overinvestment by managers. The managers control the company and they may use free cash to invest in projects with negative NPVs, but a dividend payment reduces this free cash flow and the scope of overinvestment.

Although large dividend payments may reduce agency costs, they lead a firm to raise external finance, which may be associated with increased transaction costs. In this context, Rozeff (1982) introduced the cost minimisation model, which combines transaction costs and agency costs to an optimal dividend policy that is the outcome of a trade-off between equity agency costs and transaction costs. Optimal dividend payments have the benefit of reducing equity agency costs as well as balancing against an increase in transaction costs. In fact, various studies based on Rozeff's (1982) specification to explain dividend policy, including Llyod *et al.* (1985), Schooley and Barney (1994), Moh'd *et al.* (1995) and Farinha (2003), have found results consistent with Rozeff's original findings and indicated a relationship between dividend policy and agency cost variables. In short, the traditional agency theory of dividend policy, therefore, emphasises the principal-agent conflict and seeks to answer its research questions related to firms with dispersed ownership in only a few countries, such as the US and the UK, consistent with the Berle and Means paradigm (1932).

Recent cross-country studies, nevertheless, have provided evidence that concentrated ownership, by large controlling shareholders, is the dominant form of the ownership structure in most developing economies, in contrast with the Berle and Means image of the widely-held corporation (La Porta *et al.,* 1999; Claessens *et al.,* 2000; Shleifer and Vishny, 1986). 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. Furthermore, 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. Faccio *et al.* (2001) examined 5,897 companies from West

European and East Asian countries and found that families, which often supplied a top manager, are the predominant form of ownership in East Asia. In fact, this form of ownership was actually more pronounced in 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 family firms are widespread around the world and occupy a growing importance in the economic globe.

Moreover, Shleifer and Vishny (1997) argued that when large shareholders, including family shareholders, hold almost full control, they tend to generate private benefits of control that are not shared with minority shareholders. Controlling shareholders can expend the companies' cash flows and implement policies that benefit themselves in such ways as paying themselves extreme salaries, and providing top managerial positions and board seats to their family members even though they are not capable. In these cases, the salient agency problem is therefore expropriation of the wealth of minority owners by the controlling shareholders, which is the conflict of interest between controlling and minority shareholders (the principal-principal conflict). Similarly, La Porta *et al.* (1999) stated that families are almost always involved in the management of their firms, which highly provides greater alignment between the interests of shareholders and managers; therefore, family control is one of the most efficient forms of organisational governance of monitoring managers and may bring more effective management and supervision, which leads to zero or lower owner-manager agency cost (Agency Problem I), than other large shareholders or dispersed corporations (La Porta *et al.,* 1999; Ang *et al.,* 2000; Anderson and Reeb, 2003).

On the other hand, family control increases the moral risks arising from the abuse of control rights and families might have powerful incentives to expropriate wealth from minority shareholder. Faccio *et al.* (2001) argued that families are likely to expropriate wealth when their control rights are greater than their cash flow rights. Further, Shleifer and Vishny (1997) indicated that in the existence of highly concentrated ownership structures, expropriation by large shareholders has become a prominent agency problem. Villalonga and Amit (2006) suggested that families have a greater incentive to expropriate wealth from minority shareholders than other controlling large shareholders. Likewise, Anderson and Reeb (2004) emphasised that founding families might involve self-dealing by lessening firm risk, enriching themselves at the expense of minority owners, engaging in non-profit maximising projects, misusing firm's resources or generally holding their interests over the other investors of the firm. Therefore, evidence

from various studies indicates that the principal-principal conflict, in other words Agency Problem II, is more prevalent in family-controlled publicly listed firms. 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.

5.2.2 Family Control and Dividend Policy

In most emerging economies, companies usually have controlling shareholders that own significant fractions of equity, typically founding families. With regard to Agency Problem I, it is widely assumed that family ownership leads to a better governance in order to monitor and control the managers, due to their direct involvement in the management of the firms and greater controlling rights, therefore zero or lower owner-manager agency cost (La Porta *et al.*, 1999). Nevertheless, due to lack of effective monitoring, family shareholders, as the insiders in the company, may have increased access to the use of corporate funds that may increase agency costs. Therefore, some researchers argue that families have powerful motivations to expropriate wealth from minority shareholders (Shleifer and Vishny, 1997; Anderson and Reeb, 2004; Villalonga and Amit, 2006).

Based on the argument of Agency Problem II, 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 divert resources to themselves and obtain "private benefits of control", such as paying themselves extreme salaries and providing top managerial positions and board seats to their family members even though they are not capable (Shleifer and Vishny, 1997). Another common form of expropriation of wealth from minority owners is referred to as "tunnelling".[78] 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

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[78] Johnson *et al.* (2000) argued that the controlling shareholders have strong motivations to drain resources off the firm to increase their wealth through the pyramidal business group structure and coined the term "tunnelling", suggesting that tunnelling may take many forms, including the form of outright theft or fraud, more subtle legal forms such as dilutive share issues that discriminate against minority shareholders and mergers between affiliated companies to transfer resources out of the bidder.

firms with lower ownership, through non-market prices (Johnson *et al,* 2000). In short, Agency Problem II is the salient agency problem and may seriously harm the interests of minority shareholders in family-controlled firms.

Another major 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; Leng, 2008; Huda and Abdullah, 2013). If this is the case, then who monitors the family-directors' decisions on the boards?

The answer to this question could be the existence of independent non-executive directors on the board. Indeed, independent directors are considered as a useful mechanism in monitoring executive directors' actions and thus reducing agency conflict of interest within a firm (Jensen and Meckling, 1976; Jensen, 1993). Since governance tools in family firms are limited, minority shareholders generally rely on the boards to scrutinize and control the possible opportunistic behaviour of families, and the interests of minority shareholders are best protected when independent directors have power on family blockholders (Westphal, 1998; Anderson and Reeb, 2004). Nevertheless, family firms are not likely to appoint boards that may limit their control over their firms' resources and hence have a significant negative impact on the independence of board, which means that they tend to have none or lower proportions of independent directors on the board and a tendency to exacerbate agency problems (Setia-Atmaja *et al.*, 2009).

La Porta *et al.* (2000) suggested that one of the main remedies to these types of agency problems is the law. Corporate law and legal environment can supply outside investors and existing shareholders, including non-family and minority shareholders, specific powers[79] to protect their wealth against expropriation by controlling families. Moreover,

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[79] These powers could vary from the right to vote on important corporate matters, to the right to sue the firm for damages, to the right to receive the same per share dividends as the controlling owners, which are the legal protections that explains why becoming a minority shareholders is a reasonable investment strategy, rather than just being a complete giveaway of funds to others who are under a few, if any, obligations to return (La Porta *et al,* 2000).

La Porta *et al.* (2000) argued that dividends are the substitutes for legal protection of minority shareholders in the countries with weak legal protections. A reputation for good treatment of shareholders is worth the most in economies with poor legal protection of minority shareholders, who have little else to rely on. By paying dividends, controlling shareholders return profits to investors, which reduce the possibility of expropriation of wealth from others, therefore establishing a good reputation.[80]

It is difficult to judge whether families either mitigate or exacerbate Agency Problem II and how family control affects corporate dividend policy. A few recent studies have investigated and reported mixed evidence concerning family-controlled companies' dividend policy behaviour. Faccio *et al.* (2001) investigated how dividend behaviour is related to the structure of ownership and control of East Asian firms, with a benchmark sample of West European firms during the period 1992-1996. Their analysis showed that the salient agency problem in both regions is expropriation of wealth from outside shareholders by controlling shareholders, which are predominantly the families. Especially, this type of expropriation is more likely to arise when the corporation is affiliated to a group of corporations that are all controlled by the same shareholder, which was found to be the case for about half of the firms in Western Europe, as well as in East Asia. Particularly, they found that group-affiliated firms in Europe paid significantly higher dividends than in Asia, dampening insider expropriation. Additionally, the presence of multiple large shareholders increased dividend rates in Western Europe but decreased in East Asia, suggesting that other large owners tend to help reduce the controlling shareholder's expropriation of minority owners in Europe, whereas they appear to exacerbate it in Asia.

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[80] La Porta *et al.* (2000) proposed two alternative agency models based on the legal environment and dividends as "the outcome model" and "the substitute model". According to first view, dividends are an outcome of an effective system of legal protection of shareholders. Under an effective system with strong protections, minorities use their legal powers to force firms to disgorge cash in the form of dividends, hence preventing controlling owners to expropriate corporate wealth. However, "the substitute model" posits that dividends are substitutes for legal protection in the countries with poor shareholders protection. Further, companies with weak shareholders protection need to establish a reputation for good treatment of minority investors. Accordingly, paying dividends will establish a reputation for preventing expropriation of wealth from minority shareholders.

The outcome model predicts that dividend payments are higher in countries with effective shareholder protection. Contrarily, the substitute model argues that in countries with effective shareholder protection, however, the need for a reputation mechanism is weaker, therefore so is the need to distribute dividends, then suggesting, ceteris paribus, that dividend ratios should be higher in countries with poor legal protection of shareholders than in countries with strong protections. Moreover, the outcome model also states that firms with better investment opportunities should have lower payout ratios in economies with good shareholder protections. On the other hand, the substitute model predicts that in markets with poor legal environment, firms with better investment opportunities may pay out more to maintain their reputations (La Porta *et al,* 2000).

Chen *et al.* (2005) analysed a sample of 412 Hong Kong firms during 1995-1998 and they found that, for only small firms, there was a significant negative relationship between dividend payouts and family ownership of up to 10% of the firm's shareholdings and a positive relationship for family ownership between 10% and 35%. Chen *et al* (2005) interpreted their findings as dividend payouts are potentially used by controlling families in smaller Hong Kong companies as a tool of extracting resources out of the firms they control. When their shareholdings increase, family managers may care more about their dividend income compared to their cash salary, since on average their cash salary is much lower than their dividend income. However, it may also be the case that other shareholders foresee the potential expropriation by the families and require higher payouts from firms with potentially the largest agency conflicts.

Moreover, using a data sample of 1,486 Chinese A-share listed firms for the period 2004-2008, Wei *et al.* (2011) found that families have lower cash dividend payouts and lower tendencies to distribute dividends than non-family firms in China, and a favourable regional institutional environment has a significant positive effect on the payout ratios and the tendency to pay dividends of listed companies. The results also showed that the impact of the regional institutional environment on cash dividends is stronger in family controlled firms than in non-family firms. Having interpreted their results, Wei *et al.* (2011) suggested that controlling family shareholders in China seemed to increase Agency Problem I, rather than Agency Problem II, which has a significant negative impact on cash dividend policy due to a lack of effective supervision, and the occupation of leading positions by incapable family members usually reduces corporate efficiency. Then, a favourable regional institutional environment takes a positive corporate governance role by helping to lessen Agency Problem I and encouraging family firms to distribute cash dividends. Accordingly, they further suggested that a high cash dividend payout is more likely to be the consequences of the outcome model of dividends, which is proposed by La Porta *et al.* (2000), by a favourable regional institutional environment.

More recently, Aguenaou *et al.* (2013) investigated the effect of ownership structure on dividend policies for firms listed on the Casablanca Stock Exchange during the period 2004-2010. The study results revealed that family ownership negatively influences the level of distributed dividends. Aguenaou *et al.* (2013) suggested that family ownership is a typical aspect of firms in the Moroccan market and the low dividend payout ratios are justified by high agency problems in family-controlled firms. Because, family

shareholders increase the cost for firms since their lack of diversification, the hiring of unskilled family members and the abuse of other shareholders' rights, which all may result in poor transparency and absence of accountability. Furthermore, using a database of 458 Colombian companies over the period 1996-2006, Gonzalez *et al.* (2014) examined the effects of family involvement on dividend policy and how family involvement influences agency problems between majority and minority shareholders. Their results showed that family influence in relation to the level and likelihood of dividend payments differs considerably according to the type of family involvement. Specifically, family involvement in management does not affect dividend policy, whereas family involvement in both ownership and control through pyramidal structures has a negative impact. Family involvement in control through disproportionate board representation has a positive effect on dividend policies of Colombian companies. Therefore, family influence on agency problems, and hence on dividend policy as a mitigating device, varies depending on family involvement.

5.2.3   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. According to Grossman and Hart (1980), 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. Similarly, Yoshikawa and Rasheed (2010) pointed out that publicly listed family-owned companies have also other types of outside shareholders who might expose the possibility that the family firm is subject to outside influence. When such outside shareholders are large, they may have some ability to affect managerial decisions and actions of family-owned companies, hence lessening the likelihood of expropriation.

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; Huda and Abdullah, 2013). The identity of controlling shareholder can be an important factor in determining financial polices of corporations.

5.2.3.1 Foreign Ownership and Dividend Policy

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 suggests a negative correlation between foreign ownership and dividend payments (Glen *et al.,* 1995). Foreign investors who own large shareholdings in emerging markets may serve as effective monitors of these companies due to their implementation of more established global standards and practices stemming from their affirmed preference of a longer-run investment philosophy (Jeon *et al.*, 2011). 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). This also suggests a negative relationship between foreign ownership and dividend payments.

Although foreign investors generally have significant global investment experiences using well-developed technology, which implies they are in a stronger position to assess a firm's performance, it is however disputed whether foreign investors have information disadvantages in trading local stocks, since they may have inferior information 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 impact of foreign ownership on dividend policy (Manos, 2002; Jeon *et al.*, 2011).

There is limited evidence in understanding the impact of foreign investors on dividend policy of firms in emerging markets. By examining 661 non-financial firms listed on the Bombay Stock Exchange in 2001, Manos (2002) reported a significant positive relation between foreign ownership and dividend policy of Indian firms; the greater the percentage owned by foreign investors, the greater the need for dividend-induced capital market monitoring, consistent with the view that it may be more difficult for overseas investors to monitor firms and their managements in emerging market, therefore they tend to use higher dividend payments to enhance better managerial monitoring. Moreover, Lin and Shiu (2003) investigated foreign ownership in the Taiwan stock market from 1996 to 2000. Based on a complete panel data for 245 firms for the

duration of the study period, their analysis showed that foreign investors are likely to hold shares with low dividend yields, possibly reflecting their tax considerations due to the different taxation on capital gains and dividends in Taiwan. Since foreign investors had to pay a 25% withholding tax for dividends paid from earnings, but capital gains were tax-free in that period, the empirical results suggested that foreign investors avoided holding shares with higher dividend yields to mitigate the negative impact of disharmonious taxation. The evidence for this claim, however, was mixed and weak.

Jeon *et al.* (2011) studied the relation between foreign ownership and the decisions on payout policy in the Korean stock exchange by using a sample of 5,583 firm-year observations from 1994 to 2004. Their research revealed that foreign investors show a preference for firms pay dividends and when they have substantial ownership, foreign shareholders lead firms to distribute more dividends. The results were driven by the fact that most of the foreign investors in Korea were institutional investors who had institutional charters, prudent-man rule restrictions and relative tax advantages on dividends. By investing in firms paying larger dividends, they also aimed to reduce the cost due to their information disadvantage, as well as continue to promote higher levels of cash payouts in order to minimise agency costs. Therefore, foreign investors had both dividend clienteles and dividend-induced monitoring incentives in the Korean stock market. Likewise, Ullah *et al.* (2012) reported that foreign ownership has a positive impact on the dividend payout ratios of Pakistani firms based on their analysis from 70 randomly selected companies listed on the Karachi Stock Exchange (KSE) 100 Index over the period 2003-2010. They suggested that the reason for this positive impact is because foreign investors cannot directly observe the activities of managers, thus they use higher dividend payments as a tool of monitoring and disciplining device. However, by examining a sample of 1,927 firm-year observations from 287 firms listed on the Stock Exchange of Thailand during the period 2002-2010, Thanatawee (2013) found that foreign equity ownership has no significant effect on dividend payouts of Thai firms.

5.2.3.2 Institutional Ownership and Dividend Policy

Dividend payments force firms to go to the external capital markets for additional funding and therefore undergo monitoring by the capital market (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, may act as a monitoring mechanism on the firm's management, consequently reducing in general the need for high dividend payouts. In this respect, Manos (2002) noted that institutional investors have more incentives to spend resources for monitoring the firm and its management compared to other investors, due to their expertise and better capability to scrutinize management activities at relatively low cost. Since their percentage ownership is generally comparatively large, institutions also tend to benefit from monitoring. Further, institutional shareholders are in a better position to take over inefficient firms and hence this threat is another aspect that forces managements to act more efficiently. Subsequently, institutional ownership has commonly been considered as a solution to the free rider problem, which suggests that the larger the proportion owned by institutions, the less is the need for dividend-induced monitoring.

Nevertheless, Zeckhauser and Pound (1990) argued that institutional shareholders are unlikely to provide direct monitoring themselves, due to the arm's length perspective of investment accepted by many institutional investors, along with the incentives to free ride with regard to monitoring activities. In fact, institutions generally prefer to force firms to increase their dividends, and so they are consequently forced to the external capital market for future funds. Likewise, Farinha (2003) suggested that institutions might force companies to pay higher dividends to enhance better managerial monitoring by external capital markets, especially when they think that their own direct monitoring efforts are inefficient or too costly. In this case, a positive relationship between institutional ownership and dividend payout ratio is expected.

A number of studies investigated the impact of institutional investors on dividend policies of firms listed in emerging markets. Manos (2002) found that 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. Contrarily, having analysed the influence of shareholder ownership identity on dividend policy for a panel of 29 Tunisian firms from 1995 to 2001, Kouki and Guizani (2009) reported that Tunisian firms paid out lower dividends when they had higher institutional ownership, in line with the effective monitoring role of institutional investors.

More evidence regarding the relationship between institutional ownership and dividend policy provided by Ullah *et al.* (2012) from Pakistan. They found that institutional shareholding has a positive impact on the dividend payout ratio, and increases in the percentage of institutional ownership lead to increases in dividend payments in the Pakistani market, where the poor legal protection given to the investors failed institutions to directly monitor the managements. Hence, institutional investors prefer to have dividends in order to reduce the opportunistic behaviour of managers. Similarly, Thanatawee (2013) showed evidence that Thai firms are more likely to pay dividends and have a tendency to pay higher dividends when they have higher institutional share ownership, consistent with the argument that institutional investors prefer dividend-induced monitoring and force managers to distribute more dividends. On the other hand, Huda and Abdullah (2013) reported that institutional shareholders have a significant but negative effect on the dividend per share in Bangladesh, by examining 21 highly traded blue-chip companies listed on the Chittagong Stock Exchange (CSE) 30 Index during the period 2006-2010. This implied that institutions do not monitor or control managerial activities through dividends; rather the Bangladeshi firms, where the institutional ownership is large, tend to pay lower dividends.

5.2.3.3 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 huge deficiencies of their economies, which is inconsistent with the efficiency justification for their existence (Kikeri *et al.*, 1992; Shleifer and Vishny, 1997). Further, state-controlled corporations can be seen as manager-controlled firms in which *a double* principal-agent problem yet exists; although the ultimate owners of these companies are the citizens, they do not control them directly, but their elected representatives should do. However, politicians may not actively or accurately monitor the companies that the state owns 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 are held responsible for all government activities and therefore they may be expected to have a particularly strong preference in seeing a steady flow of dividends from a state-owned company, since dividends may be good enough to convince citizens that the company performs well, as well as reduce the free cash flow in the hands of managers (Gugler, 2003).

Moreover, the recognition of enormous inefficiency of state companies and the pressures on public' budgets have recently created a popular response around the world, so called "*privatisation*" that replaces political control with private control by outside investors in most cases. Also, privatisation in most countries generates concentrated private cash flow ownership in addition to the control. Privatisation generally provides relatively more efficient ownership structures and a significant improvement in performance of privatised firms (Megginson *et al.,* 1994; Lopez-de-Silanes, 1994). However, it is possible that privatisation does not work as well as intended; for instance, when firms are privatised without the creation of large investors, which provides managers with more discretion. In these cases, agency costs of managerial control may increase, even though the costs of political control decreases and the problems of managerial discretion can be almost as serious as the prior problems of political 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) investigated the relationship between dividends, ownership and control structure of the firm for a panel of 214 Austrian companies over the period 1991-1999, and found that principal-agent conflict is more severe in state-controlled firms. In particular, the study results showed that state ownership and control have a positive impact 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. Using 3,994 observations of Chinese firms from 1995 to 2001, Wei *et al.* (2004) also reported that there is a significantly positive relationship between the state ownership and cash dividends. Wang *et al.* (2011), analysing 13,116 firm-year observations over the period 1998-2008, and Lam *et al.* (2012), examining 7,519 firm-year observations during the period 2001-2006, provided more evidence from China. The results of both studies similarly 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.

5.2.4   Minority Shareholders and Dividend Policy

Conflicts of interest between corporate insiders such as managers or ultimate controlling shareholders and outside investors, specifically minority shareholders, have been crucial

to the analysis 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 founding families (La Porta *et al.,* 1999). The insiders who control the corporate 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). This is consistent with DeAngelo *et al.*'s (2008, p.218) statement that *"There is much yet to be learned about the nature and scope of minority stockholder exploitation."* 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 the UK, researchers hypothesised and found a positive relationship between dispersion of ownership among outside shareholders and dividend payout. The existence of large number of small investors leads to a low level of ownership concentration, which increases the potential agency costs given the free-rider problem associated with higher ownership diffusion and the need for outside monitoring. Therefore, Rozeff (1982) and Easterbrook (1984) hypothesised that minority shareholders seek greater dividend payout, as they perceive their level of control to diminish. 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 in the form of families, the states or banks may control managers, but it still leaves existing and potential minority investors unprotected. In this case, La Porta *et al.* (2000) suggested that these minority shareholders would typically desire for dividends, which reduce what is left for expropriation. They further stated that, *"A reputation for good treatment of shareholders is worth the most in countries with weak legal protection of minority*

shareholders, who have little else to rely on. As a consequence, the need for dividends to establish a reputation is the greatest in such countries" (La Porta *et al.*, 2000, p.7).

In the context of emerging Indian market, Manos (2002) indeed found that investors with the smaller percentage of shareholdings have a taste for cash dividends, in order to reduce the collective action of monitoring problem by dividend-induced capital market monitoring, therefore preferring higher dividend payments. However, in the 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 actually 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.

5.2.5   Research Context in Turkey and Hypotheses Development

As is the case in many other emerging markets, the concentrated ownership by large controlling shareholders is the dominant form of the ownership structure in Turkey. 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), in contrast with the Berle and Means image of the widely held corporation in which ownership structure of firm is dispersed among small shareholders but the control is concentrated in the hands of managers.

Accordingly, it is crucial to consider ownership structure of companies in Turkey in understanding dividend policy related to the agency problems, since the most salient agency problem maybe the expropriation of the wealth of minority owners by the controlling shareholders, namely the *principal-principal conflict*. Indeed, during the late 1990's, a considerably long list of cases of corruption, share dilution, asset stripping,

tunnelling, insider trading and market manipulation took place in the Turkish public, and a number of listed firms' minority shareholders were harmed by these events (Ararat and Ugur, 2003; Yurtoglu, 2003; IIF, 2005). Following the November 2002 elections, which resulted in one-party government, the economic programs and structural reforms were jointly carried out by the government and the IMF for a better working of the market economy, outward-orientation and globalisation, starting in March 2003 (CMB, 2003). Further, 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 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).

The 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 (CMB, 2003). Accordingly, one of the most important developments was that, in cooperation with the World Bank and the OECD, the CMB published its Corporate Governance Principles in 2003, which was aimed to improve the ISE listed firms corporate governance practices (CMB, 2003; Caliskan and Icke, 2011). 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). Cash dividends can be used to either reduce or exacerbate the principal-principal conflict, since dividends are the substitutes for legal protection of minority shareholders in the countries with weak legal protections. By paying dividends, controlling shareholders return profits to investors, which reduce the possibility of expropriation of wealth from others (La Porta *et al.*, 2000). Therefore, this chapter of the thesis focuses on the effect of ownership structure, including families, foreign investors, domestic institutional corporations, the state and minority investors, on dividend policy behaviour in Turkey based on the principal-principal conflict perspective of agency cost theory over a decade after Turkey implemented major reforms, including the publication of the CMB's Corporate Governance Principles, starting with the fiscal year 2003.

Moreover, the tax factor may also play an important role in understanding the attitude of investors towards cash dividends in Turkey. Under the current Turkish tax system, cash dividends and capital gains are taxed differently. Table 5.1 below illustrates a summary of the Turkish tax regime on capital gains and cash dividends for the investors. 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), but the Turkish tax regime on investment instruments changed significantly at the beginning of 2006 (TSPAKB, 2007).

Table 5.1 Taxation of Capital Gains and Dividends on Equities in Turkey

The table presents a summary of the Turkish tax regime of capital gains and dividends on equity investments for the investors (resident/non-resident, individual/corporate) since 2006.

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; 2008; 2012)

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. However, *the tax clientele theory* (Miller and Modigliani, 1961; Black and Scholes, 1974; Miller and Scholes, 1978) argues that each investor has their own implied calculations of choosing between high or low cash dividends and selecting dividend policies according to their tax category circumstances, and since there are enough companies to provide these different dividend policies, investors will invest in only companies with policies best fit their tax position. Therefore, in equilibrium, no firm can increase its value by reducing taxes through its dividend policy; in fact, this may cause a change in clientele and could be costly because of trading costs. 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.

Furthermore, the principal-principal conflict (Agency Problem II), which is based on the expropriation argument, suggests that families prefer lower dividend payments to maintain cash flows that they can potentially expropriate (Setia-Atmaja *et al.*, 2009; Yoshikawa and Rasheed, 2010). However, it is difficult to judge whether families either mitigate or exacerbate Agency Problem II and how family control affects corporate dividend policy in emerging markets. Although a few recent studies (Faccio *et al.*, 2001; Chen *et al.*, 2005; Wei *et al.,* 2011; Aguenaou *et al.*, 2013; Gonzalez *et al.*, 2014) investigated and reported mixed evidence concerning the effect of family involvement on dividend policy, they generally found a negative relationship between family control and dividend payout ratio. In this respect, Turkey, where corporate ownership structure

is characterised by highly concentrated family ownership,[81] offers an ideal setting to investigate the relationship between family ownership and cash dividends in the context of an emerging market.

Even though 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 maintaining tight control, family members have in some instances obtained well-paid jobs and perks from the company, even if they are not capable. Moreover, 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). Further, 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).[82] In this case, the controlling families may have strong initiatives to expropriate wealth of minority shareholders, which may exacerbate Agency Problem II. As previously mentioned, during the late 1990's, a considerably long list of cases of corruption, share dilution, asset stripping, tunnelling, insider trading and market manipulation took place in the Turkish public, and a number of listed firms' minority shareholders were harmed by these events (Ararat and Ugur, 2003; Yurtoglu, 2003; IIF, 2005).

Along with the major economic and structural reforms implemented in 2003, the CMB of Turkey published its Corporate Governance Principles in cooperation with the World

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[81] The largest domestically owned Turkish corporations are mainly family-controlled. One shareholder generally controls more than 50% of voting rights in 45 % of the firms listed on the ISE. It is also reported that at least three-fourths of all corporations are owned by families or a holding company controlled by a family (IIF, 2005). A study done by Gursoy and Aydogan (1999) revealed that around 44% of companies on the ISE belonged to a family or a small group of families and other 30% of them were controlled by holding companies, showing predominant family involvement in approximately 74% of all companies between 1992 and 1998. Similarly, Yurtoglu (2003) indicated that business groups are the dominant forms in Turkish corporate governance and business groups in Turkey are a set of industrial and financial corporations organised under a legal structure of a holding company, which is commonly controlled by a single family or sometimes a partnership of a few families. In fact families ultimately owned 80% of all firms listed on the ISE.

[82] Yurtoglu (2003) reported that holding companies are the most frequently observed form of direct ownership by families who organise a large number of firms under a pyramidal ownership structure or even through more complicated web of inter-corporate equity linkages in the Turkish capital market.

Bank and the OECD in the same year. Since then, many areas in terms of the legal and institutional environment for corporate governance and transparency, and disclosure practices in Turkey have been improved. However, it is not realistic to expect an immediate effect of these performances and changes of laws and regulations, to move toward much stronger minority shareholder rights. In fact, the acceptance and application of the CMB Principles have been relatively slow among the ISE-listed firms, since the majority of companies are dominated by a single family as the controlling shareholder and many family-owned firms, by no means all, tend to avoid carrying out key governance provisions that might constrain family control (IIF, 2005; Caliskan and Icke, 2011). This suggests that unfair treatment of minority shareholders may still be a serious problem in Turkey. Therefore, if it holds true, families prefer lower dividend payments to maintain cash flows that they can potentially expropriate, which implies a negative relationship between family ownership and dividend payout in the Turkish market.

Moreover, La Porta *et al.* (2000) proposed two alternative agency models based on the legal environment and dividends as *the outcome model* and *the substitute model*. According to first view, dividends are an outcome of an effective system of legal protection of shareholders. Under an effective system with strong protections, minorities use their legal powers to force firms to disgorge cash in the form of dividends, hence preventing controlling owners of expropriating corporate wealth. However, the substitute model posits that dividends are substitutes for legal protection in the countries with poor shareholders protection. Further, companies with weak shareholders protection need to establish a reputation for good treatment of minority investors; because such a reputation will enable companies to access equity markets in the future. Accordingly, paying dividends will establish a good reputation for preventing expropriating of minority shareholders. If this is the case, families should pay higher dividends regardless of whether or not the major reforms implemented in 2003 have led to a better legal and institutional environment for corporate governance and transparency, and disclosure practices in Turkey, which implies a positive relationship between family ownership and dividend payout.

However, the outcome model further predicts that, in countries with good shareholder protection, other things being equal, firms with better investment opportunities should have lower payout ratios. Contrarily, the substitute model does not make this prediction, arguing that, in countries with poor shareholder protection, firms with better investment

opportunities should still pay higher dividends to maintain their reputations. In this respect, based on the outcome model, if the legal and institutional environments for corporate governance, transparency and disclosure practices are improved, leading to a better shareholder protection since 2003 in Turkey, then as a promising emerging market with fast growth, investors (including all types) may in general have a tendency to prefer long-term growth potential of the stocks they own, not for the short-term dividend income, which is involved with lower dividend payments.

Additionally, 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 corporation) generally have a neutral tax-treatment with respect to cash dividends and capital gains. Combining the ideas from the principal-principal conflict (Agency Problem II) based on the expropriation argument, outcome and substitute model of dividends 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:

Hypothesis 1: There is a negative relationship between family ownership and the dividend payment decisions of Turkish firms.

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 board member who was from the controlling family and more than one-third of the board directors were, on average, the members of the controlling family based only on having the same family name, not even considering in-laws or other kinships.

The CMB of Turkey Principles published in 2003 emphasised the importance for the independence of the board of directors and further recommended that one-third of the board should consist of non-executive directors, of which at least two of them should be independent members (IIF, 2005; Caliskan and Icke, 2011). However, as is often the case in other emerging markets, listed-firms in Turkey generally tend to not require supermajorities, and particularly the boards of the family-owned companies often act mostly as rubber stamps for decisions made by the majority shareholder. Even though many family-controlled company boards have non-executive directors, they are likely to form small minorities, playing little role in the board, and they also tend to serve generally on the board of subsidiaries, which minimises their influence. In addition, the existence of the independent members on the boards is very limited (IIF, 2005; Ararat *et al.*, 2011; Caliskan and Icke, 2011). In this respect, the CMB of Turkey revised its corporate governance principles and issued a new set of mandatory principles[83] for the ISE-listed firms, convened no later than 30 June 2012. According to the new communiqué, among the non-executive directors, the board shall compulsorily include independent members, where the number of independent directors shall not be less than one-third of the board, and in any case, at least two independent directors have to be on the boards (Berispek, 2012).

Accordingly, it can be said that families generally dominated the boards of the ISE-listed firms they control by their direct involvement in many cases, and easily influenced managerial decisions over the period 2003-2012, except the year 2012 due to the compulsory corporate governance principles imposed by the CMB. Consistent with the negative relationship between family ownership and dividend policy anticipated from the previous discussion, it is also predicted that family control through the board negatively affects dividend policy decisions. Therefore, the following hypothesis is formulated:

Hypothesis 2: There is a negative relationship between the number of family members on the board and the dividend payment decisions of Turkish firms.

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; Klein, 2002; Gabrielsson, 2007).

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[83] The Communiqué issued by the CMB Serial: IV, No: 57 published in the Official Gazette dated: 11/02/2012 and No: 28201.

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 it is sufficiently small but with enough independent directors, a board can monitor its executive managers more closely. As explained in the above discussion, 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 that owner families have direct influence on the composition and characteristics of boards.

Alternatively, it is also argued that there is a positive relationship between firm size and the size of the board (Fiegener *et al.*, 2000; Gabrielsson, 2007; Huda and Abdullah, 2013). In this respect, board size may indeed be reflecting the firm size in the Turkish market rather than a proxy for monitoring mechanism due to the mentioned reasons. Since the results reported in Chapter 3 indicate a positive relationship between firm size and dividend policy, it is anticipated that larger firms have larger size of boards and therefore the larger the board is the more likelihood that the firm pays higher dividends. Hence, the following hypothesis is formulated:

Hypothesis 3: There is a positive relationship between the board size and the dividend payment decisions of Turkish firms.

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 (TSPAKB, 2007; 2012). After the implementation of major reforms in 2003, the Turkish stock market generally had a rapid growth in terms of the number of listed firms, trading volume, market capitalisation, and attracted a significant amount of foreign investment during the period 2003-2012 (CMB, 2003; 2012; Adaoglu, 2008). Indeed, this period was 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, 2012). Accordingly, such a big foreign stock-ownership

might possibly have some important implications for the Turkish capital market (Sevil *et al.*, 2012) and therefore its firms, while setting their dividend policies.

The empirical evidence regarding the relationship between foreign ownership and dividend policy in emerging markets is limited and mixed. For instance, Manos (2002) in India, Jeon *et al.* (2011) in Korea and Ullah *et al.* (2012) in Pakistan found evidence that foreign ownership has a positive impact on dividend payout ratio, consistent with the notion that it is more difficult for overseas investors to monitor firms and their managements in emerging market, therefore the need for the dividend-induced capital market monitoring, and they tend to use higher dividend payments to enhance better managerial monitoring. Additionally, Jeon *et al.* (2011) further suggested that the relative tax advantages of most foreign investors on dividends in Korea was another reason for their preference for higher cash dividends. However, Lin and Shiu (2003) reported an inverse correlation between foreign ownership and dividend payout policy. They concluded that this may be due to the different taxation on capital gains and cash dividends in Taiwan, where foreign investors had to pay a 25% withholding tax for cash dividends, but capital gains were tax-free, thus foreign investors avoided holding shares with higher dividend yields to mitigate the negative impact of disharmonious taxation.

In Turkey, foreign investors 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, 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 during the period 2003-2012 (CMB, 2003; 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,[84] also implies that foreign investors possibly prefer none or lower dividend payouts in order to reduce their tax burden on cash dividends. Therefore:

Hypothesis 4: There is a negative relationship between foreign ownership and the dividend payment decisions of Turkish firms.

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. A few researchers (Manos, 2002; Ullah *et al.*, 2012; Thanatawee, 2013) found 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, other researchers (Kouki and Guizani, 2009; Huda and Abdullah, 2013) reported 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, which have rather unusual ownership structures, namely Turkiye Is Bankasi and OYAK Group, are the most common domestic financial institutions controlling a number of ISE-listed companies (Yurtoglu, 2003).[85] Apart from these two corporations, the role of institutional investors in corporate governance is still a new issue and the sector is underdeveloped (IIF, 2005; OECD, 2006). However, the CBM of Turkey implemented "Individual Retirement Savings and Investments System" in 2003 in the hope of creating pension and mutual funds that

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[84] Foreign share owners, 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.

[85] Turkiye Is Bankasi is a quasi-private bank founded in 1924 that has an unusual ownership structure. The Republican People's Party (CHP) is the testamentary heir to the shares initially held by Ataturk (founder of Isbank). Under the Ataturk's will, CHP only has the voting right of the shares but if there are any dividends on the shares; dividends are equally paid to the Turkish Linguistic Society and the Turkish Historical Society. Also, active and retired bank employees have shares in the bank's capital. Moreover, OYAK Group is, also known as Turkish Armed Forces Assistance Fund, a quasi-private group of companies, which is founded in 1961 by a special law as a social security organisation for the members of the Turkish army. OYAK operates as an insurance company and also as a financial institution that provides its members with the financial support in the form of credit products that point their particular needs at different stages of their life.

were expected to serve as institutional investors and increase monitoring in public firms (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, the following hypothesis is formulated:

Hypothesis 5: There is a negative relationship between domestic institutional ownership and the dividend payment decisions of Turkish firms.

From its early days to 1980s, when an export-led stabilisation and structural adjustment policy that included the liberalisation of the capital market was implemented in Turkey, the state was the major player, both as an owner of large industrial companies, and in assigning resources to the private sector. A large number of state-owned enterprises (SOEs) were founded and managed by the state during this time period (Kepenek and Yenturk, 1996; Yurtoglu, 2003). 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, starting with the fiscal year 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 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 elimination of legal barriers to market entry, a substantial reduction in the state's direct involvement 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 relatively more efficient ownership structures and a significant improvement in performance of privatised firms (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:

Hypothesis 6a: There is a negative relationship between state ownership and the dividend payment decisions of Turkish firms.

Hypothesis 6b: There is a positive relationship between state ownership and the dividend payment decisions of Turkish firms.

At the beginning of 2006 the Turkish tax regime changed significantly, as explained previously, providing a favourable tax treatment on capital gains over dividends for investors in general (except domestic corporations, who are not subject to any taxes both for capital gains and cash dividends). In this respect, small shareholders may have preferences for capital gains over cash dividends to avoid tax burden and hence it suggests an inverse relationship between minority owners and payout policy, consistent with the Lam *et al.* (2012). However, Turkey has a history of poor structural and microeconomic policies, as well as poor culture of corporate governance and transparency and disclosure practices, therefore poorer minority investor protection and relatively more corruption (IIF, 2005; Aksu and Kosedag, 2006).

Indeed, during the late 1990s, a long list of cases in tunnelling took place in the Turkish public. A Majority of these cases were simple resource transfers of controlling shareholders, from their firms, in the form of outright theft or fraud. 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 the 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). In the

following period, in early 2000s, the Turkish economy experienced a systematic banking crisis, and this strongly affected the ISE, resulting in substantial losses for shareholders, especially small Turkish investors who heavily invested in the ISE prior to the economic crisis (Adaoglu, 2008; BRSA, 2010).

Accordingly, 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 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:

Hypothesis 7: There is a positive relationship between minority shareholders ownership and dividend payment decisions of Turkish firms.

5.3 Methodology

The following sub-sections describe the methodology used in this chapter of the research. First, the sample data is explained, followed by the variables and models are presented, which are employed in order to test the research hypotheses.

5.3.1 Sample Data

The purpose of this chapter is to empirically investigate the effects of family involvement, through ownership and board representation, non-family blockholders, such as foreign investors, domestic financial institutions and the state, and minority shareholders on dividend policy related to the agency cost theory argument, after the

implementation of major economic and structural reforms, starting with the fiscal year 2003 in the Turkish market. Therefore, the data sample is drawn from the Istanbul Stock Exchange (ISE) according to the following criteria:

1.   First, all companies listed on the ISE, during the period 2003-2012 are considered. A long panel dataset allows understanding the effect of ownership structure on dividend policy in a way that cannot be achieved using cross-sectional data.

2.   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 policies. After these exclusions, a number of all non-financial and non-regulated corporations remain.

3.   Third, accounting and financial data for this research is obtained from DATASTREAM, whereas companies' ownership data and incorporation dates are compiled from the annual reports published in the Public Disclosure Platform of the Istanbul Stock Exchange (KAP) (http://kap.gov.tr/en/companies/traded-companies/all-companies.aspx) 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.

The sample selection criteria result a panel data set of total 264 non-financial and non-utility firms listed on the ISE from 14 different industries during the period 2003-2012. 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 that listed in different times during the period 2003-2012, are all considered and included in the sample. Therefore, due to the presence of delisted and newly listed companies, the sample is not the same for every year, but rather it increases during the ten-year period from 2003 to 2012. Furthermore, it is worth noting that the selection criteria and distributions of the sample across time and industries in Table 3.1 and the descriptive statistics for the firm's characteristics in Table 3.2 in Chapter 3, and the dividend policy characteristics for the sampled Turkish companies in Table 4.1 in Chapter 4 are presented.

Table 5.2 on the next page presents the descriptive statistics of the distribution for ownership structure, according to the identity of the shareholders and dividend payment groups from the sampled 264 Turkish firms with 2,112 firm-year observations during the period 2003-2012. The shareholders are categorised into six types; family ownership includes family managers, family members and family-controlled holdings share-ownership, whereas foreign ownership represents the shares held by foreign companies, foreign financial institutions and foreign individuals. Further, domestic institutional ownership measures the percentage of shares owned by Turkish financial institutions such as banks, pension funds, investment trusts and insurers, while organisations such as cooperatives, voting trusts, and a company or a group with no single controlling investor are categorised as miscellaneous. The column named "Dispersed" shows the distribution of the percentage of the outstanding equity held by minority (small) investors, which are defined as the shareholders who own less than 5% of a listed firm's equity.[86] In addition, the last two columns of the table show the statistics for the board size and the number of controlling family members on the board.

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[86] 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.

Table 5.2 Summary Statistics for Ownership Structure by Dividend Payment Groups

Sample includes 264 firms (non-financial and non-utility) listed on the ISE with 2,112 firm-year observations during the period 2003-2012.

Variables	Family Ownership (%)	Foreign Ownership (%)	Domestic Institutional Ownership (%)	State Ownership (%)	Miscellaneous (%)	Dispersed (%)	Board Size	Family Directors
Panel A: Non-Dividend Paying Firms – 126 Firms with 852 firm-year observations during 2003-2012								
Mean	46.08	7.93	1.45	1.68	2.18	40.68	5.60	1.87
Median	51.75	0.00	0.00	0.00	0.00	37.11	5.00	2.00
S.D.	27.69	22.77	10.21	6.16	10.78	20.94	1.80	1.56
Min	0.00	0.00	0.00	0.00	0.00	2.46	3.00	0.00
Max	96.34	97.54	82.50	82.77	86.00	100.00	14.00	6.00
Panel B: Less Frequent Dividend Paying Firms – 49 Firms with 451 firm-year observations during 2003-2012								
Mean	32.34	14.49	3.97	2.39	12.02	34.79	6.87	1.24
Median	38.80	0.00	0.00	0.00	0.00	31.99	7.00	1.00
S.D.	30.85	30.25	16.17	17.90	22.33	21.53	1.83	1.50
Min	0.00	0.00	0.00	0.00	0.00	1.83	3.00	0.00
Max	94.52	96.98	89.70	98.17	83.85	100.00	13.00	5.00
Panel C: Frequent Dividend Paying Firms – 89 Firms with 809 firm-year observations during 2003-2012								
Mean	36.23	16.85	6.88	2.04	6.75	31.25	7.56	1.39
Median	42.03	0.00	0.00	0.00	0.00	28.48	7.00	1.00
S.D.	30.16	28.12	19.65	11.13	17.29	17.17	1.97	1.72
Min	0.00	0.00	0.00	0.00	0.00	0.54	4.00	0.00
Max	96.92	99.46	97.30	84.58	85.00	94.18	14.00	7.00

The sample is grouped based on cash dividend payments. Panel A in the Table 5.2 presents the distribution of ownership structure for the "non-dividend paying" firms which did not pay cash dividends during 2003-2012, and Panel B covers the "less frequent dividend paying" firms which paid cash dividends at least one year, but the total number of the dividend-distributed years are less than the half of a firm's total number of operating years, since the firm was listed during the research period. Panel C shows the statistics for the "frequent dividend paying" firms, which paid cash dividends more often (the total number of the dividend-distributed years are equal or more than the half of a firm's total number of operating years, since the firm was listed during the sample period). Accordingly, the sample has 126 non-dividend payers with 852 firm-year observations, 49 less frequent dividend payers with 451 firm-year observations and 89 frequent dividend payers with 809 firm-year observations in total.

As Table 5.2 illustrates, Turkish companies show highly concentrated and centralised ownership structures. On average, families own about 46% of total equity in non-dividend paying firms, 32% in less-frequent dividend payers and 36% in firms that frequently paid cash dividends, which is consistent with previous studies that confirmed high family ownership in the Turkish market (Gursoy and Aydogan, 1999; Yurtoglu, 2003; IIF, 2005). Foreign investors are the second largest blockholders but their share holdings vary between the three groups (around 8%, 14% and 17% in non-dividend payers, less-frequent and frequent dividend payers, respectively). Further, minority investors have, on average, almost 41% of the total equity of non-dividend payers, whereas their fractions are nearly 35% in less-frequent and about 31% in frequent dividend paying companies. Yurtoglu (2003) found that owner families dominated the boards of Turkish companies and the boards are used as an internal mechanism of control, affirming the owner's influence on the company, by families. Similarly, the median board size and the median controlling family members on the board in the last two columns of the table illustrate that two family directors are on the boards, which are generally sized on five executives in non-dividend paying firms, while one family director takes a place among seven boards of directors in dividend paying (both less-frequent and frequent) firms.[87] Indeed, family members take the top positions such as chairman and vice chairman, indicating a solid family control through the boards as well.

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[87] 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.

5.3.2 Variables and Models

5.3.2.1 Variable Descriptions

This chapter of the study employs two variables to proxy for the dependent variable, namely the *probability* of paying dividends and the *intensity* of paying dividends. The probability of paying dividends is observed as the 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 (the payout level decisions), DPOUT, represent the actual dividend payout ratio made by a firm, which is measured, as the dividend per share is divided by the earnings per share in a given year, during the period 2003-2012. The variable takes a positive value if such a firm paid dividends and takes 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 impact of family control. 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 any given year over the period 2003-2012, 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 is denoted as FAMBOARD, which is defined as the number of family directors on the board based on surnames of the founding families (Yoshikawa and Rasheed, 2010; Wei *et al.*, 2011). Further, the variable BOARD, board size (Chen *et al.*, 2005; Setia-Atmaja *et al.*, 2009; Huda and Abdullah, 2013), is measured as the number of directors on the board.

Moreover, the foreign ownership (FOREIGN) is adopted in the same manner of studies including Manos (2002), Lin and Shiu (2003), Jeon *et al.* (2011), Ullah *et al.* (2012) and Thanatawee (2013), 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 (Manos, 2002; Kouki and Guizani, 2009; Ullah *et al.*, 2012; Thanatawee, 2013; Huda and Abdullah, 2013). 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, represents stock ownership dispersion (Rozeff, 1982; Schooley and Barney, 1994 and 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.

The following firm-specific variables are the control variables that have been observed in the literature to influence dividend policy and they are indeed found to be significant determinants on the dividend policy decisions of Turkish firms in Chapter 3. 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 worth noting that the analyses in Chapter 3 showed that return on assets, firm age and firm size have a positive impact, whereas market-to-book ratio 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, stages of the economic cycle, and macroeconomic dynamics, on dividend policy (Chen *et al.,* 2005; Setia-Atmaja *et al.*, 2009; Wei *et al.,* 2011). The importance of industrial classification to the dividend policy has been argued, because firms in different industries may work under different set of regulations and often have different levels of risk and growth potential (Baker *et al.*, 1985 and Moh'd *et al.*, 1995). Considering the sample is drawn from 14 different industries, *industry dummies* (INDUSTRY) are employed to detect whether there is any significant industry effect for Turkish firms.

Table 5.3 on the following page demonstrates the summary descriptions of the research variables used in the empirical analyses.

Table 5.3 Variables and Definitions

The table presents the research variables, proxy for the dividend policy, the test and the control variables, their symbols and definitions used in the multivariate analyses of this chapter of the study.

Variables	Symbols	Definitions
Dependent Variables		
Probability of Paying Dividends	DPAY	A binary variable, which equals to 1 if firm i pays dividends at year t during the period 2003-2012, and 0 otherwise.
Dividend Payout Ratio	DPOUT	The ratio of dividend per share to earnings per share of firm i at year t during the period 2003-2012.
Test Variables		
Family Ownership	FAMILY	The percentage of shares of firm i held by families at year t over the period 2003-2012.
Family Directors	FAMBOARD	The number of family directors on the board of firm i at year t over the period 2003-2012.
Board Size	BOARD	The number of directors on the board of firm i at year t over the period 2003-2012.
Foreign Ownership	FOREIGN	The percentage of shares of firm i held by foreign investors at year t over the period 2003-2012.
Domestic Institutional Ownership	INST	The percentage of shares of firm i held by domestic financial institutions at year t over the period 2003-2012.
State Ownership	STATE	The percentage of shares of firm i held by the state at year t over the period 2003-2012.
Ownership Dispersion	DISP	The percentage of shares of firm i held by a large number of minority (small) shareholders who own less than 5% of the outstanding shares of the firm at year t over the period 2003-2012.
Control Variables		
Return on Assets	ROA	The ratio of net earnings to total assets of firm i at year t over the period 2003-2012.
Market-to-Book Value	M/V	The market-to-book value ratio of firm i at year t over the period 2003-2012.
Debt Policy	DEBT	The ratio of total debt to total assets of firm i at year t over the period 2003-2012.
Firm Age	AGE	The natural logarithm of the total number of years since the firm i's incorporation date until year t over the period 2003-2012.
Firm Size	SIZE	The natural logarithm of the inflation (CPI) adjusted market capitalisation of firm i at year t over the period 2003-2012.
Time Effect	YEAR	Yearly dummies for the years from 2003 to 2012, which take a value of 1 for the specific year and 0 otherwise.
Industry Effect	INDUSTRY	Industry dummies using 14 different industry classifications of the firms, according to Datastream's Industry Classification Benchmark (ICB) codes.

5.3.2.2 Research Design and Models

The research aims to provide an empirical examination on the agency cost theory explanation of dividend policy, using the ownership structure approach in the emerging Turkish market, after the implementation of major reforms starting with the fiscal year 2003. Accordingly, a large-scale panel dataset is created, which covers a relatively recent long time period and contains the data of 264 firms (non-financial and non-utility) listed on the ISE, over a ten-year period 2003-2012.[88]

This chapter uses pooled and panel logit and tobit regressions in its multivariate analyses to test the research hypotheses. The nature of the dependent variable defines the appropriate estimation method. When the dependent variable is the *probability* of paying dividends, which is a binary variable that equals to 1 if the firm pays cash dividends and zero otherwise, then logit estimation is appropriate. Moreover, *one-year lag values* of the independent variables are used in all estimations of this part of the study (as in Chapter 3) in order to mitigate the problem of endogeneity. Accordingly, the following logit models, where the dependent variable (DPAY) is the binary variable and the independent variables have the same previous definitions, are developed:

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

Next, INDUSTRY variable, which represents *industry dummies*, is included in the regression model in order to control for the impact of different industries, as follows:

Model 2: $Logit\ (DPAY)_{i,t} = \alpha + \beta_1 FAMILY_{i,t-1} + \beta_2 FAMBOARD_{i,t-1} + \beta_3 BOARD_{i,t-1} + \beta_4 FOREIGN_{i,t-1} + \beta_5 INST_{i,t-1} + \beta_6 STATE_{i,t-1} + \beta_7 DISP_{i,t-1} + \beta_8 ROA_{i,t-1} + \beta_9 M/B_{i,t-1} + \beta_{10} DEBT_{i,t-1} + \beta_{11} AGE_{i,t-1} + \beta_{12} SIZE_{i,t-1} + \sum_{t=1}^{T} \beta_t YEAR_{i,t} + \sum_{j=1}^{n} \beta_j INDUSTRY_{j,i,t} + \varepsilon_{i,t-1}$

Furthermore, this chapter also uses a continuous dependent variable, dividend payout ratio that is denoted as DPOUT, to indentify the impact of the ownership variables while Turkish firms set their actual level of payout ratios, and hence to provide more robust empirical results. When the dependent variable is the ratio of dividend payout, which is left censored at zero and the distribution of the sample is a mixture of discrete and continuous variables, a tobit estimation is appropriate.

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[88] Due to missing observations because of newly listed and delisted companies, the sample is not the same for every year during the study period and therefore the study provides an unbalanced panel dataset.

Accordingly, the corresponding tobit models are constructed as below:

Model 1: $Tobit$ (DPOUT)$_{i,t} = \alpha + \beta_1$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$_{i,t-1} +$
β_{10}DEBT$_{i,t-1} + \beta_{11}$AGE$_{i,t-1} + \beta_{12}$SIZE$_{i,t-1} + \sum_{t=1}^{T} \beta_t$YEAR$_{i,t} + \varepsilon_{i,t-1}$

When the INDUSTRY variable is added into the model:

Model 2: $Tobit$ (DPOUT)$_{i,t} = \alpha + \beta_1$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$_{i,t-1} +$
β_{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$_{j,i,t} + \varepsilon_{i,t-1}$

5.3.2.3 Descriptive Statistics of the Variables

Table 5.4 shows the descriptive statistics (mean, median, standard deviation, minimum and maximum values, skewness and kurtosis) for the research variables used in the multivariate analyses. The panel dataset (unbalanced) includes 264 Turkish firms (non-financial and non-utility) listed on the Istanbul Stock Exchange (ISE) with 2,112 firm-year observations (except dividend payout ratio, DPOUT, which has 2,066 observations) over the period 2003-2012.

Table 5.4 Descriptive Statistics of the Research Variables

The table reports the descriptive statistics for the research variables used in the multivariate analyses of this part of the study. The unbalanced panel dataset includes 264 firms (non-financial & non-utility) listed on the ISE with 2,112 firm-year observations over the period 2003-2012.

Variables	Mean	Median	S.D.	Min	Max	Skewness	Kurtosis
DPAY	0.339	0.000	0.473	0.000	1.000	0.682	1.465
DPOUT	0.243	0.000	0.911	0.000	21.05	14.34	287.9
FAMILY	0.394	0.444	0.298	0.000	0.969	-0.171	1.616
FAMBOARD	1.551	1.000	1.634	0.000	7.000	0.837	2.868
BOARD	6.622	7.000	2.070	3.000	14.00	0.601	3.214
FOREIGN	0.127	0.000	0.268	0.000	0.995	2.047	5.873
INST	0.041	0.000	0.158	0.000	0.973	3.865	16.76
STATE	0.016	0.000	0.096	0.000	0.981	7.020	54.51
DISP	0.358	0.327	0.201	0.005	1.000	0.784	3.534
ROA	0.021	0.030	0.185	-5.120	1.059	-11.41	295.9
M/B	1.508	1.162	1.322	0.284	18.66	5.304	43.01
DEBT	0.249	0.158	0.542	0.000	10.76	12.77	221.2
AGE	3.445	3.555	0.499	1.098	4.477	-1.002	4.296
SIZE	4.863	4.704	1.712	0.513	10.16	0.427	2.792

As the table illustrates, the mean of DPAY is 0.339, indicating that in almost 34 % of the total 2,112 firm-year observations, Turkish firms paid dividends, whereas in the rest of the 66% of the total observations, they did not. On average, DPOUT reveals that the sampled Turkish firms had the dividend payout ratio of 24.3% over the entire period. With regard to ownership structure, Turkish 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 Turkish 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 Turkish firms have, on average, a good prospect of expected growth opportunities.

5.3.2.4 Correlation Matrix and VIF Values of the Independent Variables

Table 5.5 demonstrates the correlation matrix and the Variance Inflation Factors (VIF) of the independent variables included in the multivariate analyses.

Table 5.5 Correlation Matrix & VIF Values of Independent Variables

	Family	Famboard	Board	Foreign	Inst	State	Disp	Roa	M/B	Debt	Age	Size	VIF	1/VIF
Family	1.000												4.42	0.226
Famboard	**0.568**	1.000											1.63	0.613
Board	-0.063	0.045	1.000										1.53	0.653
Foreign	**-0.448**	-0.321	0.063	1.000									3.46	0.289
Inst	-0.316	-0.242	0.040	-0.144	1.000								1.87	0.535
State	-0.207	-0.151	0.032	-0.038	-0.034	1.000							1.36	0.735
Disp	-0.249	0.057	-0.126	**-0.419**	-0.077	-0.046	1.000						2.88	0.347
Roa	-0.021	-0.020	0.211	0.049	0.021	0.015	-0.123	1.000					1.46	0.684
M/B	-0.108	-0.072	-0.018	0.125	0.081	0.010	0.122	-0.144	1.000				1.46	0.684
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
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
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

Although a few variables are moderately correlated, there does not appear to be high correlation between any two of the variables. However, to detect more directly whether multicollinearity exists between independent variables, the VIF statistics are used. As a

rule of thumb, the values of VIF larger than 10 are generally regarded as suggesting multicollinearity. Tolerance, calculated as 1/VIF, is also used to check the degree of multicollinearity; if a tolerance value is lower than 0.1, which corresponding to a VIF value of 10, it implies multicollinearity. As reported in the table, none of the VIF values exceed 10, nor are the tolerance values smaller than 0.1, the results hence suggest that there is no multicollinearity.

5.4 Empirical Results

The impact of ownership structure on dividend policy in Turkey are analysed in two steps: (1) decision to pay or not to pay and (2) how much dividends to pay. The nature of the dependent variable defines the appropriate estimation method. When the dependent variable is the probability of paying dividends, which is a binary variable that equals to 1 if a firm pays dividends and zero otherwise, logit estimations are used. When the dependent variable is the intensity of paying dividends, which is left censored at zero, and the distribution of the sample is a mixture of discrete and continuous variables, tobit estimations are employed. Additionally, the *marginal effects* of the independent variables in logit and tobit models are also calculated to provide further interpretations of the estimation coefficients and they are illustrated in the same tables next to the coefficient estimations columns for each regression models, showing the marginal impact of each independent variable on the dependent variable at the mean values of other independent variables.

Also, in order to control for heteroscadasticity, the pooled models are tested using White's corrected hetereoscadasticity robust regressions. Hence, the models in this chapter do not suffer from heteroscadasticity. This section reports and discusses the results of the empirical analyses.

5.4.1 Results of the Logit Estimations

Table 5.6 on the next page reports the results of the logit estimations on the probability of Turkish firms to pay dividends based on 1,846 firm-year observations from 264 ISE-listed firms over the period 2003-2012. The dependent variable is a binary variable (0/1), whereas Model 1 includes the set of all independent variables as previously explained and Model 2 expands the model by adding industry dummies (INDUSTRY) to control for different industry classifications effect of the sample.

Table 5.6 Results of the Logit Estimations on Probability of Paying Dividends

Model Variables	PANEL A: Pooled Logit				PANEL B: Random Effects Logit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
FAMILY	-0.3520	-0.0624	-0.3428	-0.0572	-1.1327	-0.1051	-1.1118	-0.1003
	(-0.65)	(-0.65)	(-0.65)	(-0.64)	(-0.99)	(-1.00)	(-0.95)	(-0.96)
FAMBOARD	-0.0288	-0.0051	-0.0397	-0.0066	-0.0268	-0.0024	-0.0189	-0.0017
	(-0.61)	(-0.61)	(-0.77)	(-0.78)	(-0.20)	(-0.20)	(-0.14)	(-0.14)
BOARD	0.1013***	0.0179***	0.1451***	0.0242***	0.2721***	0.0252***	0.2925***	0.0264***
	(2.84)	(2.85)	(3.81)	(3.81)	(2.87)	(2.95)	(3.09)	(3.19)
FOREIGN	-0.4589	-0.0813	-0.9341*	-0.1560*	-1.9033*	-0.1766*	-2.3554**	-0.2125**
	(-0.88)	(-0.87)	(-1.82)	(-1.80)	(1.69)	(-1.73)	(-2.05)	(-2.10)
INST	-0.1540	-0.0273	-0.5571	-0.0930	-1.1746	-0.1090	-1.5697	-0.1416
	(-0.24)	(-0.24)	(-0.87)	(-0.87)	(-0.82)	(-0.82)	(-1.10)	(-1.11)
STATE	-1.4688*	-0.2604*	-1.8739**	-0.3130**	-2.5851*	-0.2399*	-3.0417**	-0.2745**
	(-1.95)	(-1.94)	(-2.51)	(-2.47)	(-1.67)	(-1.69)	(-1.97)	(-1.98)
DISP	-0.1676	-0.0297	-0.2645	-0.0442	-0.2116	-0.0196	-0.3048	-0.0275
	(-0.26)	(-0.26)	(-0.41)	(-0.41)	(-0.16)	(-0.16)	(-0.23)	(-0.23)
ROA	10.124***	1.7954***	10.267***	1.7153***	11.869***	1.1015***	11.709***	1.0568***
	(8.61)	(9.06)	(8.70)	(9.53)	(8.01)	(8.52)	(8.03)	(8.55)
M/B	-0.1941**	-0.0344**	-0.2041**	-0.0341**	-0.3836***	-0.0356***	-0.3751***	-0.0338***
	(-2.21)	(-2.24)	(-2.50)	(-2.55)	(-3.38)	(-3.49)	(-3.30)	(-3.38)
DEBT	-2.8512***	-0.5056***	-2.7053***	-0.4519***	-4.3435***	-0.4031***	-4.0674***	-0.3671***
	(-8.55)	(-9.53)	(-7.53)	(-8.44)	(-5.06)	(-5.10)	(-4.84)	(-4.92)
AGE	0.4923***	0.0873***	0.5041***	0.0842***	0.8863**	0.0822**	0.8982**	0.0810**
	(3.36)	(3.38)	(3.39)	(3.38)	(2.26)	(2.31)	(2.18)	(2.21)
SIZE	0.6488***	0.1150***	0.6914***	0.1155***	1.1050***	0.1025***	1.0687***	0.0964***
	(12.16)	(11.52)	(11.35)	(10.84)	(7.51)	(9.58)	(6.99)	(7.91)
Constant	-5.7711***		-5.0468***		-10.193***		-8.4581***	
	(-6.83)		(-6.52)		(-5.59)		(-4.64)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846
Wald X^2	422.29***		452.09***		194.09***		198.83***	
Pseudo R^2	35.88%		38.22%					
Rho Value					0.6530		0.6231	
Likelihood Ratio Test					335.29***		280.09***	

The table reports the logit 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. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

Furthermore, both pooled and panel (random effects) logit regressions estimations are employed in order to identify which one is more favourable in investigating the dividend puzzle in the context of developing Turkish market.[89] Accordingly, Panel A in Table 5.6 displays the results of pooled logit estimation coefficients and marginal effects, whereas Panel B in the same table shows the results of random effects (panel) logit estimation coefficients and marginal effects of the independent variables on the probability of paying dividends for Model 1 and Model 2. The following conclusions can be drawn from Table 5.6.

1.   When Model 1 and Model 2 are estimated by the pooled logit regressions, they are overall statistically significant at the 1% level as evidence by the Wald X^2 tests. Also, the Pseudo R^2 values for the models (35.88% and 38.22% respectively) suggest a good indication about the prediction power of the models. Similarly, the random effects (panel) logit regressions estimate that the models (Model 1 and 2) are also overall statistically significant at the 1% level as reported by the Wald X^2 tests. However, the Likelihood-ratio tests are statistically significant at the 1% for both Model 1 and 2, indicating that the proportion of the total variance contributed by the panel-level variance component, *rho*, values are significantly different from zero (0.6530 and 0.6231 respectively); therefore, this suggests that panel models are more favourable than pooled models. Hence, the following results are reported based on the random effects logit models (Panel B).

2.   The results from the random effects logit regressions in Model 1 and Model 2 (when the industry effect is controlled) show that the coefficients and marginal effects of all control variables, in other words firm-specific (financial) variables, ROA, M/B, DEBT, AGE and SIZE, are all statistically significant determinants (at the 1%, 1%, 1%, 5% and 1% level respectively) in affecting Turkish firms' decisions whether to pay cash dividends. Further, the probability of a Turkish firm paying dividends is positively affected by the ROA, AGE and SIZE, whereas it is negatively influenced by the M/B and DEBT variables. These results are consistent with the previous findings in Chapter 3, as well as in line with prior research taken in both developed and emerging markets, suggesting that more profitable (Lintner, 1956; Bhattacharya, 1979; Miller and Rock, 1985; Jensen *et al.*, 1992; Benartzi *et al.*, 1997; Aivazian *et al.*, 2003b; Al-Najjar, 2009; Kirkulak and Kurt, 2010), more mature (Grullon *et al.*, 2002) and larger sized firms

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[89] It is worth noting that this chapter of the study also employs probit estimations on the probability of paying dividends. The corresponding pooled and panel (random effects) probit models provide very similar findings with the logit estimations. The results are reported in Table 5.10 in Appendix III.

(Lloyd *et al.*, 1985; Moh'd *et al.*, 1995; Fama and French, 2001; Al-Najjar, 2009; Imran, 2011; Kisman, 2013) are more likely to pay dividends. Whereas firms with higher growth opportunities (Rozeff, 1982; Myers and Majluf, 1984; Lang and Litzenberger, 1989; Schooley and Barney, 1994; Kisman, 2013) and with more debt (Jensen and Meckling, 1979; Jensen, 1986; Crutchley and Hansen, 1989; Aivazian *et al.*, 2003b; Al-Najjar, 2009; Kisman, 2013) are less likely to pay dividends in the Turkish market.

3.   With regard to the test variables, in other words ownership structure variables, a number of conclusions are drawn from the random effects logit models. First, in order to investigate how family control influences the probability of paying dividends, two family effect variables are created, namely family share ownership (FAMILY) and family control through the board by family members (FAMBOARD). However, the results show no significant relation between the family control variables, both FAMILY and FAMBOARD, and the probability of a Turkish firm to pay dividends, since the coefficients and the marginal effects of the variables are negative but not statistically significant at any conventional significance levels in both Model 1 and Model 2. These findings are inconsistent with the expropriation argument (Sheleifer and Vishy, 1997; Anderson and Reeb, 2004; Villalonga and Amit, 2006), outcome and substitute model of dividends (La Porta *et al.*, 2000) as well as the evidence provided in emerging markets by a few studies (Faccio *et al.*, 2001; Chen *et al.*, 2005; Wei *et al.,* 2011; Aguenaou *et al.*, 2013; Gonzalez *et al.*, 2014).

4.   Among non-family blockholders, FOREIGN has a significantly negative impact on the probability of a Turkish firm paying dividends. The coefficients of the variable are statistically significant and negative at the 10% level in Model 1, and at the 5% level in Model 2 when the industry effect in controlled. Further, the marginal effects of FOREIGN are also found to be negatively significant at the 10% level in Model 1 and significant at the 5% level in Model 2 (-0.1766 and -0.2125 respectively), suggesting that one unit of increase in FOREIGN will decrease the probability of a Turkish firm to pay dividends by about 17-21% for an average firm. The evidence of the negative correlation is consistent with Glen *et al.* (1995) and Lin and Shiu (2003), and may suggest that foreign investors invest in stocks of Turkish firms for their long-run growth potential rather than the short-term dividend income. This may also be indicating 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 as well 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.

5.   Similarly, the panel logit estimations show that state ownership (STATE) has also a significantly negative effect on the probability of paying dividends in Turkey. The coefficients and marginal effects of the variable (suggesting that one unit of increase in STATE will reduce the probability of a Turkish firm paying dividends by around 24-27% for an average firm) are reported to be negative and statistically significant at the 10% level in Model 1 and even more significant (at the 5% level) when the industry dummies are added in Model 2. This finding is in contrast with the evidence of Gugler (2003), Wei e*t al.* (2011), Wang *et al.* (2011) and Lam *et al.* (2012) who reported a positive relationship between state ownership and dividend payments. However, it is consistent with Kouki and Guizani (2009) who found a negative impact of the state on dividend policy in Tunisia. Accordingly, the evidence may imply that, after the implementation of major reforms, starting with the fiscal year 2003, the accelerated privatisation programme, which 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 the state ownership is involved with less need for the dividend-induced capital market monitoring.

6.   Moreover, the results reveal that domestic financial institutions (INST) and minority (DISP) shareholdings have no impact on the Turkish firms' decisions on whether to pay dividends. The coefficients and marginal effects of both variables are negative but not statistically significant at any conventional significance levels in both Model 1 and Model 2. Contrarily, the variable BOARD is highly significant (at the 1% level in both Model 1 and 2) and positively affects the probability of a Turkish firm to pay dividends (the marginal effects of the variable suggest that, one unit increase in BOARD will increase the probability of paying dividends by about 2.5-2.6% for an average Turkish firm). This result is consistent with the argument that larger firms have larger size of boards (Fiegener *et al.*, 2000; Gabrielsson, 2007; Huda and Abdullah, 2013) and therefore the larger the board is the more likelihood that the firm pays

dividends. In fact, the controlling owners, generally families in Turkey, are most likely to not appoint boards that will limit their control, and usually the boards of the family-owned companies often act mostly as rubber stamps for decisions made by the majority shareholder (IIF, 2005; Ararat *et al.*, 2011; Caliskan and Icke, 2011). Hence, the size of board (BOARD) reflects the firm size, as hypothesised, and it is positively related to dividend policy, also in line with the previous firm-specific variable (SIZE) proxying for the firm size.

7.   Consequently, random effects logit estimates report that Turkish firms' decisions regarding whether to pay dividends are negatively affected by the FOREIGN, STATE, M/B and DEBT variables, but positively influenced by the ROA, AGE, SIZE and BOARD variables, while the FAMILY, FAMBOARD, INST and DIPS variables have no significant effects. Further, the industry effect is attempted to control by adding 14 different industries classification dummies in the multivariate tests. Even though inclusion of industry dummies changes the significance levels of the significant variables in a couple of cases (FOREIGN and STATE), and slightly changes the marginal effects of the significant variables, it shows no considerable impact.

5.4.2   Results of the Tobit Estimations

The effect of ownership structure of Turkish firms on their dividend policy decisions regarding the amount of dividend payouts is examined by the tobit regressions. Accordingly, the continuous dependent variable, dividend payout ratio, which is denoted as DPOUT and left censored at zero, is employed. Model 1 includes the set of all independent variables (test and control variables) to indentify the ownership structure influence while Turkish firms set their actual level of payout ratios, whereas Model 2 expands the regression model by adding industry dummies to control for different industry classifications effect of the sample.

Panel A in Table 5.7 on the next page illustrates the results of pooled tobit estimation coefficients and marginal effects, whereas Panel B in the same table presents the results of random effects tobit estimation coefficients and marginal effects of the independent variables on the dividend payout levels for Model 1 and Model 2. The following conclusions are made from Table 5.7.

Table 5.7 Results of the Tobit Estimations on Dividend Payout Ratio

Model Variables	PANEL A: Pooled Tobit				PANEL B: Random Effects Tobit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Dividend Payout Ratio		Dividend Payout Ratio		Dividend Payout Ratio		Dividend Payout Ratio	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
FAMILY	-0.6073	-0.1307	-1.1287**	-0.2357**	-1.2628**	-0.1555**	-1.6226**	-0.2012**
	(-1.36)	(-1.36)	(-2.12)	(-2.12)	(-1.99)	(-2.02)	(-2.51)	(-2.54)
FAMBOARD	-0.0405	-0.0087	-0.0236	-0.0049	-0.0353*	-0.0043*	-0.0337*	-0.0039*
	(-0.92)	(-0.92)	(-1.46)	(-1.46)	(-1.67)	(-1.69)	(-1.78)	(-1.79)
BOARD	0.0924**	0.0198**	0.1093**	0.0228**	0.1122**	0.0138**	0.1277**	0.0158**
	(2.07)	(2.07)	(2.35)	(2.36)	(2.18)	(2.19)	(2.51)	(2.54)
FOREIGN	-0.6140	-0.1322	-1.1893**	-0.2484**	-1.6753***	-0.2062***	-2.0909***	-0.2593***
	(-1.49)	(-1.48)	(-2.43)	(-2.43)	(-2.67)	(-2.74)	(-3.28)	(-3.39)
INST	-0.5656	-0.1218	-1.1957**	-0.2497**	-1.3125*	-0.1616*	-1.8156**	-0.2251**
	(-1.29)	(-1.29)	(-2.33)	(-2.34)	(-1.69)	(-1.70)	(-2.37)	(-2.40)
STATE	-1.1506**	-0.2477**	-1.6342***	-0.3413***	-2.0521**	-0.2526**	-2.3636**	-0.2931**
	(-2.07)	(-2.07)	(-2.86)	(-2.86)	(-2.07)	(-2.09)	(-2.45)	(-2.48)
DISP	-0.4618	-0.0994	-1.1769*	-0.2458*	-1.3861*	-0.1706*	-1.8475**	-0.2291**
	(-0.86)	(-0.86)	(-1.95)	(-1.95)	(-1.82)	(-1.84)	(-2.40)	(-2.43)
ROA	5.7681***	1.2420***	6.2965***	1.3150***	5.8393***	0.7190***	6.0372***	0.7487***
	(5.78)	(5.91)	(6.16)	(6.37)	(7.42)	(7.66)	(7.73)	(7.97)
M/B	-0.1808***	-0.0389***	-0.1578***	-0.0329***	-0.2309***	-0.0284***	-0.2128***	-0.0263***
	(-2.94)	(-2.98)	(-3.02)	(-3.04)	(-3.46)	(-3.50)	(-3.20)	(-3.24)
DEBT	-1.7987***	-0.3873***	-1.4978***	-0.3128***	-1.7991***	-0.2215***	-1.5526***	-0.1925***
	(-6.06)	(-6.26)	(-5.04)	(-5.18)	(-3.65)	(-3.67)	(-3.26)	(-3.28)
AGE	0.4696***	0.1011***	0.2751**	0.0574**	0.4856**	0.0597**	0.3294*	0.0408*
	(3.56)	(3.59)	(2.08)	(2.08)	(2.33)	(2.34)	(1.80)	(1.81)
SIZE	0.3944***	0.0849***	0.4006***	0.0836***	0.5101***	0.0628***	0.4987***	0.0618***
	(5.72)	(5.81)	(5.71)	(5.80)	(6.49)	(7.16)	(6.05)	(6.51)
Constant	-4.5158***		-3.0207***		-4.8019***		-3.3581***	
	(-3.76)		(-3.12)		(-4.96)		(-3.48)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
F Test	5.28***		5.12***					
Wald X^2					198.39***		217.47***	
Pseudo R^2	14.22%		16.02%					
Rho Value					0.3772		0.3309	
Likelihood Ratio Test					161.46***		120.43***	

The table reports the tobit estimations and t/z-statistics in the parentheses. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. Independent variables are one-year lagged. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

1.   When Model 1 and Model 2 are estimated by the pooled tobit regressions, they are overall statistically significant at the 1% level, as evidence by the F-test values. Also, the random effects (panel) tobit regressions estimate that the models (Model 1 and 2) are also overall statistically significant at the 1% level, as reported by the Wald X^2 tests. However, the Likelihood-ratio tests are statistically significant at the 1% for both Model 1 and 2, indicating that the proportion of the total variance contributed by the panel-level variance component, *rho*, values are significantly different from zero (0.3772 and 0.3309 respectively); therefore, this suggests that panel models are more favourable than pooled models. Hence, the following results are reported based on the random effects tobit models (Panel B).

2.   The results from the random effects tobit regressions in Model 1 and Model 2 (when the industry effect is controlled) indicate that the coefficients and marginal effects of all control variables, ROA, M/B, DEBT, AGE and SIZE, are all statistically significant. Further, the amount of dividend payout ratio is positively affected by the ROA, AGE and SIZE, whereas it is negatively influenced by the M/B and DEBT variables. These results are consistent with the panel logit models results previously reported, suggesting that more profitable, more mature and larger sized Turkish firms pay higher dividends, whereas the ones with higher growth opportunities and more debt pay lower dividends.

3.   Regarding the test variables, the panel tobit regressions report that all the ownership variables, FAMILY, FAMBOARD, BOARD, FOREIGN, INST, STATE and DISP, are statistically significant, unlike the panel logit estimations. More interestingly, they are all negatively affecting the amount of dividend payouts of the Turkish firms, except BOARD, which is indeed found to be reflecting the firm size. The results show that FOREIGN and STATE variables are significantly and negatively related to dividend payouts of Turkish firms (as well as the probability of the dividend payment decisions, as reported by the panel logit estimations), indicating that higher foreign and state ownerships lead to lower dividend payments.

4.   The coefficients of the family control variables, FAMILY and FAMBOARD, are both significantly negative at the 5% and the 10% level, respectively in Model 1 and Model 2 (when the industry dummies are included). The marginal effects of the variables indicate that one unit increase in FAMILY and FAMBOARD variables will reduce the amount of payout ratio by about 15-20% and 0.4%, respectively for an average Turkish firm. These results are consistent with the evidence provided by Faccio

et al. (2001) in East Asia, Chen *et al.* (2005) for small firms in Hong Kong, Wei *et al.* (2011) in China and Aguenaou *et al.* (2013) in Morocco, who reported a significantly negative impact on dividend policy of family control. Additionally, Gonzalez *et al.* (2014) also reported that family ownership has a negative impact on dividend policies of Colombian firms, but they contrarily found that family representation through board has a positive effect on dividends. Therefore, the results imply that families in Turkey tend to exacerbate expropriation of wealth from minority investors by paying lower dividends in line with the Agency Problem II argument (Sheleifer and Vishy, 1997; Anderson and Reeb, 2004; Villalonga and Amit, 2006). However, 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 control should also be significantly and negatively affecting the probability of paying dividends) and the significantly negative effects of all other blockholders (foreign and domestic financial investors, and the state), and even minority shareholders on the dividend payout ratio, the evidence for 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*[90] developed by Baker and Wurgler (2004a; 2004b).

5.   Likewise, the variables INST and DISP, which have no significant effect on the probability of paying dividends, are reported to be significantly and negatively affecting the amount of payout ratios of the Turkish firms by the panel tobit estimations (the coefficients of both variables are negative and significant at the 10% level in Model 1 and at the 5% level in Model 2). The marginal effects of the two variables suggest that one unit increase in INST and DISP will decrease the amount of payout ratio by about 16-22% and 17-23% respectively, for an average Turkish firm. The evidence of the inverse relationship between the minority shareholders, DISP, 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, and inconsistent with a number of studies (Rozeff, 1982; Schooley and Barney, 1994; Moh'd *et al.*, 1995; Manos, 2002; Farinha, 2003). However, this finding implies that small shareholders have preferences for capital gains

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[90] According to the catering theory of dividends, investors' preferences for dividends may change over time and the decision by firms to pay dividends is driven by investors' preferences for dividends. Therefore, managers cater to investors by distributing dividends when investors put a premium on such stocks. Correspondingly, managers will omit dividends when investors rate more highly firms that do not pay dividends. Consequently, managers recognize and cater to shifts in investors demand for dividend preferences (Baker and Wurgler, 2004a; 2004b).

over cash dividends to avoid tax burden, due to a favourable tax treatment on capital gains provided by the Turkish tax regime. This is in line with Lam *et al.* (2012), who reported a negative relationship for the same reason in China. Moreover, higher stock ownership of domestic financial investors (INST) in a Turkish firm associates with lower dividend ratios, which is contrary to evidence provided by Manos (2002), Ullah *et al.* (2012) and Thanatawee (2013), who argue that greater agency conflicts and poor legal protection given to the investors in emerging markets lead to institutional investors failing to directly monitor the managements, hence they prefer dividend-induced capital market monitoring. In fact, consistent with studies such as Kouki and Guizani (2009) and Huda and Abdullah (2013), the evidence suggests that increasing ownership of Turkish institutional investors in general reduce the need for high dividend payouts, which may be due to their efficient monitoring on the firms' management.

6.   The negative relationship between ownership variables and payout ratios of Turkish firms may be the reflection of the uneven tax treatment imposed by the Turkish tax regime. The CMB of Turkey re-introduced the mandatory dividend policy in 2003 to attract the investors, who suffered from substantial loses from prior economic crisis, back to the stock market. Initially, capital gains and dividends were taxed equally, regardless of the type of investor, but the Turkish tax regime changed significantly at the beginning of 2006, providing a favourable tax treatment on capital gains over cash dividends for foreign investors (both corporations and individuals) and domestic individual investors. This may imply why these investors generally have preferences for capital gains over cash dividends, to avoid tax burden. However, the tax-preference explanation does not solely explain the whole puzzle, since Turkish corporations (both financial and non-financial) are not subject to any taxes, both for capital gains and cash dividends, but in general they have tendencies to require lower dividend payouts. As illustrated in Table 5.2, there are indeed different clienteles, including all types of investors, who own stocks of non-dividend payers and less frequent dividend paying or frequent dividend paying Turkish firms. Therefore, this implies support for the tax clientele theory (Miller and Modigliani, 1961; Black and Scholes, 1974; Miller and Scholes, 1978), arguing that each investor has their own implied calculations of choosing between high or low cash dividends and selecting dividend policies according to their tax category circumstances or their own cash flow requirements.

7.   As previously mentioned, although 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, therefore suggesting higher dividend 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, and considering the results of tobit regressions reporting that all the ownership variables, family, foreign, domestic institutional, state and even minority shareholdings, are statistically and negatively affecting the amounts of dividend payout ratios of the Turkish firms, the evidence implies 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. Accordingly, 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.

8. Finally, in line with the prior results, the panel tobit estimations show no considerable industry impact when the industry dummes are included in the equation.

5.4.3 Further Analyses

In this sub-section, additional tests are conducted in order to confirm the primary findings. This is done by employing an alternative dividend policy measure, namely *dividend yield*.[91] Since dividend yield (DYIELD) is a continuous variable, which is left censored at zero and the distribution of the sample is a mixture of discrete and continuous variables, a tobit estimation is appropriate. Therefore, dividend yield is substituted for dividend payout ratio as the dependent variable,[92] to further examine the effect of ownership structure on dividend policy decisions of Turkish firms regarding how much dividends to pay, and to check the robustness of the primary findings from tobit estimations.

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[91] Dividend yield variable (denoted as DYIELD) is measured as the ratio of dividend per share to price per share of firm i at year t during the period, 2003-2012. The descriptive statistics of DYIELD are illustrated below. As can be seen that the mean ratio of the dividend yield is 0.0185, indicating that the sampled Turkish firms had the dividend yield of just below 2% over the entire period.

Variable	Observations	Mean	Median	Std Dev.	Min	Max	Skewness	Kurtosis
DYIELD	2,112	0.0185	0.000	0.0403	0.000	0.6630	4.5661	44.418

[92] Additionally, using dividend yield variable avoids problems associated with negative or extremely high percentages of payout ratios (Rozeff, 1982; Schooley and Barney, 1994). Also, substituting dividend yield, which is a market measure, for dividend payout ratio, which is an accounting measure, will provide more evidence from a different perspective regarding dividend puzzle.

Table 5.8 Results of the Tobit Estimations on Dividend Yield

Model Variables	PANEL A: Pooled Tobit				PANEL B: Random Effects Tobit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Dividend Yield		Dividend Yield		Dividend Yield		Dividend Yield	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
FAMILY	-0.0126	-0.0536	-0.0104	-0.0437	-0.0211*	-0.0787*	-0.0218*	-0.0806*
	(-0.84)	(-0.85)	(-1.10)	(-1.11)	(-1.93)	(-1.94)	(-1.92)	(-1.93)
FAMBOARD	-0.0037**	-0.0157**	-0.0042**	-0.0177**	-0.0031**	-0.0118**	-0.0031**	-0.0116**
	(-2.28)	(-2.37)	(-2.50)	(-2.57)	(-2.27)	(-2.27)	(-2.26)	(-2.26)
BOARD	0.0036***	0.0155***	0.0044***	0.0185***	0.0054***	0.0202***	0.0057***	0.0213***
	(3.08)	(3.32)	(3.65)	(3.85)	(3.14)	(3.20)	(3.33)	(3.38)
FOREIGN	-0.0006	-0.0001	-0.0102	-0.0427	-0.0379*	-0.1412*	-0.0447**	-0.1652**
	(-0.39)	(-0.39)	(-0.62)	(-0.60)	(-1.72)	(-1.74)	(-1.97)	(-1.98)
INST	-0.0196	-0.0834	-0.0084	-0.0354	-0.0175*	-0.0646*	-0.0247*	-0.0914*
	(-1.28)	(-1.30)	(-1.53)	(-1.53)	(-1.67)	(-1.69)	(-1.88)	(-1.89)
STATE	-0.0170	-0.0722	-0.0344*	-0.1441*	-0.0367**	-0.1367**	-0.0452**	-0.1670**
	(-0.84)	(-0.83)	(-1.73)	(-1.70)	(-2.10)	(-2.10)	(-2.35)	(-2.36)
DISP	-0.0124	-0.0528	-0.0115	-0.0483	-0.0110*	-0.0203*	-0.0120*	-0.0221*
	(-0.74)	(-0.75)	(-0.99)	(-1.00)	(-1.67)	(-1.67)	(-1.69)	(-1.69)
ROA	0.3312***	1.4061***	0.3437***	1.4371***	0.3124***	1.1629***	0.3150***	1.1627***
	(7.66)	(10.62)	(7.82)	(10.60)	(13.35)	(13.55)	(13.48)	(13.63)
M/B	-0.0108***	-0.0460***	-0.0103***	-0.0430***	-0.0093***	-0.0348***	-0.0090***	-0.0333***
	(-4.27)	(-4.54)	(-4.18)	(-4.54)	(-4.53)	(-4.54)	(-4.33)	(-4.33)
DEBT	-0.0916***	-0.3889***	-0.0839***	-0.3507***	-0.0853***	-0.3177***	-0.0811***	-0.2995***
	(-7.91)	(-9.22)	(-6.49)	(-7.65)	(-5.67)	(-5.68)	(-5.41)	(-5.41)
AGE	0.0216***	0.0920***	0.0198***	0.0830***	0.0244***	0.0909***	0.0237***	0.0876***
	(4.87)	(5.51)	(3.74)	(4.32)	(3.16)	(3.21)	(2.84)	(2.87)
SIZE	0.0146***	0.0621***	0.0146***	0.0611***	0.0164***	0.0614***	0.0155***	0.0573***
	(9.88)	(10.10)	(8.19)	(9.16)	(6.20)	(6.71)	(5.41)	(5.68)
Constant	-0.1941***		-0.1615***		-0.2105***		-0.1762***	
	(-6.62)		(-4.92)		(-6.08)		(-4.93)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846
F Test	14.55***		12.30***					
Wald X^2					372.33***		381.72***	
Pseudo R^2	14.59%		15.37%					
Rho Value					0.5397		0.5221	
Likelihood Ratio Test					349.92***		313.65***	

The table reports the tobit estimations and t/z-statistics in the parentheses. ***, ** and * stand for significance at the 1%, 5% and 10% levels respectively. Independent variables are one-year lagged. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

Panel A in Table 5.8 on the previous page reports the results of pooled tobit estimation coefficients and marginal effects, whereas Panel B in the same table presents the results of the random effects (panel) tobit estimation coefficients and marginal effects of the independent variables on the levels of dividend yield of Turkish firms for Model 1 and Model 2.

At first glance, the results display that both pooled tobit models and panel tobit models are overall statistically significant at the 1% level. However, the Likelihood-ratio tests are statistically significant at the 1% for both Model 1 and 2, indicating that the proportion of the total variance contributed by the panel-level variance component, *rho*, values are significantly different from zero (0.5397 and 0.5221 respectively). Therefore, as in case of the prior results, this suggests that panel tobit models are more favourable than pooled tobit models. Hence, the following results are reported based on the random effects tobit models (Panel B).

The results reported in Table 5.8 show that the random effects tobit estimations, when the dividend yield is used as the dependent variable, provide very similar findings in line with the previous results regarding the dividend payout ratio. Although the significance levels of some explanatory variables and the marginal effects are found to be different, the amounts of the dividend yield of Turkish firms are significantly affected by the same variables with the same directional impacts, as in the case of their dividend payout ratio levels. Particularly, the amount of dividend yield is significantly and positively affected by ROA, AGE and SIZE, whereas it is significantly and negatively influenced by M/B and DEBT. Regarding the test variables, FAMILY, FAMBOARD, FOREIGN, INST, STATE and DISP have significantly negative impacts but BOARD has a significantly positive effect on the amounts of dividend yield of Turkish firms. Also, inclusion of INDUSTRY dummies shows no substantial impact. Subsequently, when the panel tobit regression estimates are used to examine the effect of ownership structure on dividend policy decisions of Turkish firms, regarding how much dividends to pay, by employing an alternative dependent variable (dividend yield), the results report very similar evidence confirming the robustness of the primary findings from the panel tobit regressions performed on the dividend payout ratios of the Turkish firms.

The summary of the empirical results for the research hypotheses is illustrated in Table 5.9 on the next page.

Table 5.9 Summary of Estimations Results for the Research Hypotheses

Variables	Predicted Sign	Realised Sign	Findings	Justification of the Hypotheses
FAMILY	(-)	(-)	Family control variables are both found to be negative but insignificant factors on the probability of a Turkish firm paying dividends. However, they are both significantly negative determinants in setting dividend payout ratio once the Turkish firm decides to pay dividends. Hence, the evidence does not show enough support for the expropriation argument based on Agency Problem II perspective (Sheliefer and Vishny, 1997; Anderson and Reeb, 2004; Villalonga and Amit, 2006) and for the results provided by Faccio *et al.* (2001), Chen *et al.* (2005, Wei *et al.* (2011) and Aguenaou *et al.* (2013).	Hypothesis 1 and 2 are partially supported.
FAMBOARD	(-)	(-)		
BOARD	(+)	(+)	The size of board is in fact found to be reflecting the firm size. The evidence supports the argument that larger firms have larger size of boards (Fiegener *et al.*, 2000; Gabrielsson, 2007; Huda and Abdullah, 2013) and therefore the larger the board is more likelihood that the firm pay larger dividends.	*Hypothesis 3 is supported.*
FOREIGN	(-)	(-)	Foreign ownership has a significantly negative effect on both the decisions of Turkish firms regarding whether to pay cash dividends and how much dividends to pay. The evidence is consistent with Glen *et al.* (1995) and Lin and Shiu (2003) suggesting that foreign investors invests in stocks for their long-term 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 imposed by the Turkish tax regime, which provides foreign shareholders with tax advantages for capital gains over dividends.	*Hypothesis 4 is supported*.
INST	(-)	(-)	Domestic financial institutions ownership has no significant effect on the probability of paying dividends even though it is negatively correlated. However, it is found to be significantly and negatively affecting the amount of the payout rations of the Turkish firms. Hence, the evidence is consistent with the studies such as Kouki and Guizani (2009) and Huda and Abdullah (2013), suggesting 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.	Hypothesis 5 is partially supported.
STATE	(+) or (-)	(-)	State ownership has a significantly negative effect on both the decisions of Turkish firms regarding whether to pay cash dividends and how much dividends to pay. The evidence in line with Kouki and Guizani (2009), implying that the state ownership involves with the less need for the dividend-induced capital market monitoring.	*Hypothesis 6a is supported.*
DISP	(+)	(-)	Minority shareholders ownership has no significant effect on the probability of paying dividends but it is significantly and negatively affecting the amount of the payout ratios of Turkish firms. The evidence is contrary to the argument that minority shareholders have a taste for higher dividends to reduce the risk of expropriation of their wealth by controlling shareholders (La Porta *et al.*, 2000) and it implies that small shareholders have preferences for capital gains over cash dividends to avoid from tax burden due to a favourable tax treatment on capital gains provided by the Turkish tax regime, which is consistent with Lam *et al.* (2012) who reported a negative relationship for the same reason in China.	Hypothesis 7 is not supported.

5.5 Conclusions

This chapter of the study investigates the effect of ownership structure on dividend policy decisions after the implementation of major economic and structural reforms, starting with the fiscal year 2003, in the Turkish market. Turkey offers an ideal setting to study the dividend behaviour of an emerging market (a civil law originated country), which employed the common laws in order to integrate with world markets. Therefore, the study focuses on a recent panel dataset of 264 companies (non-financial and non-utility) listed on the ISE, over a ten-year period 2003-2012, including 1,846 firm-year observations in logit models and 1,800 firm-year observations in tobit models. Particularly, it examines the effect of family control, through their ownership and board representatives, on cash dividend payment decisions based on the agency cost explanation. Furthermore, the study also considers the impacts of the non-family blockholders (foreign investors, domestic financial institutions, and the state) and minority shareholders on the ISE-listed firms' dividend policy decisions. In addition, it employs richer research models (pooled and panel logit/probit and tobit estimations), and uses alternative dividend policy measures (the probability of paying dividends, dividend payout ratio and dividend yield) in order to provide more valid, consistent and robust results.

The dividend policy of Turkish firms is analysed in two steps: (1) decision to pay or not to pay and (2) how much dividends to pay. The results indicate that control variables (firm-specific factors) all significantly affect the dividend policy decisions of the Turkish firms, consistent with the results in Chapter 3. Specifically, the dividend policy is positively influenced by profitability, firm age and firm size, whereas it is negatively affected by investment opportunities and debt level in the context of Turkish market.

The results further report that Turkish firms have highly concentrated ownership structure and are mostly owned by families followed by foreign investors, while other blockholders, Turkish financial institutions and the state, show relatively lower shareholdings. Moreover, it is found 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 (both control through ownership and board representation), foreign investors, domestic financial institutions, the state

and minority investors ownerships, have significantly negative impacts on the amount of dividend payouts of Turkish firms.

Accordingly, the study presents consistent evidence that foreign investors invest in stocks of Turkish firms 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, the empirical 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, 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 (Agency Problem II) argues that when large shareholders, such as families, hold almost full control, they prefer none or lower dividends to preserve cash flows that they can potentially expropriate. Nevertheless, the study reports inconclusive evidence in this respect. Even though family control has a significantly negative effect on the amount of dividend payouts of Turkish firms, 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 control should also be significantly and negatively affecting the probability of paying dividends) and the significantly negative relationship between dividend payout ratio 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 (2004a; 2004b).

Similarly, domestic financial institutions and minority investors' stock ownership have no significant effect on Turkish firms' decisions regarding whether to pay dividends, but they are both significantly and negatively affecting the amount of the payout ratios. Hence, higher stock ownership of domestic financial investors in a Turkish 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, the 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.

Overall, the study findings reveal that cash dividends are not used as a monitoring mechanism by investors in order to control for agency problems in Turkish market. Also, there is not enough evidence that families are likely to expropriate by paying lower dividends. Rather, the negative relationship between ownership variables and payout ratios of Turkish firms may be the reflection of the uneven tax treatment imposed by the Turkish tax regime, which provides a favourable tax treatment on capital gains over cash dividends for foreign investors (both corporations and individuals) and domestic individual investors. However, the tax-preference explanation does not solely explain the whole puzzle since Turkish corporations (both financial and non-financial) are not subject to any taxes both for capital gains and cash dividends but, in general, they have tendencies to require lower dividend payouts. In fact, the results show that there are different clienteles, among all types of investors, who own stocks of non-dividend payers and less frequent dividend paying or frequent dividend paying Turkish firms, suggesting support for the tax clientele theory.

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, the evidence implies 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.

APPENDIX III

RESULTS OF THE PROBIT ESTIMATIONS

Probit regression models are employed to test the research hypotheses and to validate the results from the logit models. Hence, the corresponding probit models, where the dependent variable is a binary variable (0/1) and the independent variables have the same previous definitions, are developed to examine the influence of Turkish firms' ownership structure on their dividend policy decisions, regarding whether or not to pay dividends, and to check whether they will confirm similar results as reported by logit estimations. Accordingly, Panel A in Table 5.10 on the next page displays the results of pooled probit estimation coefficients and marginal effects, whereas Panel B in the same table shows the results of random effects (panel) probit estimation coefficients and marginal effects of the independent variables on the probability of paying dividends for Model 1 and Model 2.

The results display that both pooled probit models and panel probit models are, overall, statistically significant at the 1% level. However, the Likelihood-ratio tests are statistically significant at the 1% for both Model 1 and 2, indicating that the proportion of the total variance contributed by the panel-level variance component, *rho*, values are significantly different from zero (0.6626 and 0.6336 respectively). Therefore, as in case of the logit estimations, this suggests that panel probit models are more favourable than pooled probit models. Hence, the following results are reported based on the random effects probit models (Panel B).

As can be observed from Table 5.10, the random effects probit estimations confirm almost the same results (the same levels of significance of the coefficients and very similar marginal effects) as reported by the random effects logit models. Particularly, the probability of a Turkish firm paying dividends is significantly and positively affected by ROA, AGE and SIZE, whereas it is significantly and negatively influenced by M/B and DEBT. With regard to the test variables, FOREIGN and STATE have a significantly negative effect but BOARD has a significantly positive impact, while FAMILY, FAMBOARD, INST and DIPS have a negative, but not statistically significant, effect on the probability of paying dividends. Also, inclusion of INDUSTRY dummies shows no considerable impact. Consequently, the results of the panel probit models are consistent, compared to the results of logit models, confirming very similar findings regarding the decisions of Turkish firms on whether to pay cash dividends or not.

Table 5.10 Results of the Probit Estimations on Probability of Paying Dividends

Model Variables	PANEL A: Pooled Probit				PANEL B: Random Effects Probit			
	Model 1		Model 2		Model 1		Model 2	
Dependent Variable:	Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)		Cash Dividends Paid (0/1)	
Independent Variables:	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects	Coefficient Estimates	Marginal Effects
FAMILY	-0.2335	-0.0730	-0.2448	-0.0741	-0.6059	-0.1004	-0.5992	-0.0968
	(-0.81)	(-0.80)	(-0.85)	(-0.84)	(-0.94)	(-0.95)	(-0.91)	(-0.91)
FAMBOARD	-0.0086	-0.0027	-0.0138	-0.0042	-0.0183	-0.0030	-0.0129	-0.0020
	(-0.31)	(-0.31)	(-0.47)	(-0.47)	(-0.24)	(-0.24)	(-0.17)	(-0.17)
BOARD	0.0600***	0.0187***	0.0858***	0.0259***	0.1524***	0.0252***	0.1639***	0.0265***
	(2.84)	(2.84)	(3.91)	(3.92)	(2.85)	(2.93)	(3.08)	(3.18)
FOREIGN	-0.2625	-0.0820	-0.5726**	-0.1734**	-1.0417*	-0.1727*	-1.2979**	-0.2098**
	(-0.94)	(-0.94)	(-2.05)	(-2.03)	(-1.68)	(-1.67)	(-2.01)	(-2.05)
INST	-0.0504	-0.0157	-0.2986	-0.0904	-0.6190	-0.1026	-0.8385	-0.1355
	(-0.15)	(-0.15)	(-0.87)	(-0.87)	(-0.77)	(-0.77)	(-1.04)	(-1.05)
STATE	-0.8705**	-0.2721**	-1.1432***	-0.3462***	-1.4682*	-0.2435*	-1.7391**	-0.2811**
	(-2.04)	(-2.03)	(-2.76)	(-2.73)	(-1.77)	(-1.79)	(-2.06)	(-2.11)
DISP	-0.0670	-0.0209	-0.1303	-0.0394	-0.0628	-0.0104	-0.1049	-0.0169
	(-0.20)	(-0.20)	(-0.37)	(-0.37)	(-0.08)	(-0.08)	(-0.14)	(-0.14)
ROA	5.3226***	1.6635***	5.4281***	1.6442***	6.6430***	1.1018***	6.5607***	1.0607***
	(7.85)	(8.20)	(8.07)	(8.65)	(8.28)	(8.81)	(8.32)	(8.83)
M/B	-0.1191***	-0.0372***	-0.1198***	-0.0362***	-0.2214***	-0.0367***	-0.2159***	-0.0349***
	(-2.64)	(-2.67)	(-2.87)	(-2.91)	(-3.56)	(-3.67)	(-3.46)	(-3.54)
DEBT	-1.6239***	-0.5075***	-1.5058***	-0.4561***	-2.4230***	-0.4018***	-2.2749***	-0.3678***
	(-8.41)	(-9.03)	(-7.58)	(-8.20)	(-5.11)	(-5.12)	(-4.88)	(-4.94)
AGE	0.2858***	0.0893***	0.2951***	0.0894***	0.4994**	0.0828**	0.5060**	0.0818**
	(3.53)	(3.55)	(3.48)	(3.48)	(2.27)	(2.31)	(2.19)	(2.21)
SIZE	0.3896***	0.1217***	0.4091***	0.1239***	0.6204***	0.1029***	0.6012***	0.0972***
	(12.53)	(12.07)	(11.74)	(11.38)	(7.66)	(9.56)	(7.12)	(8.04)
Constant	-3.4551***		-3.0311***		-5.7694***		-4.7931***	
	(-7.79)		(-7.19)		(-5.67)		(-4.70)	
YEAR	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
INDUSTRY	-	-	Yes	Yes	-	-	Yes	Yes
Number of Observations	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846
Wald X^2	522.38***		551.20***		214.65***		219.55***	
Pseudo R^2	35.74%		38.01%					
Rho Value					0.6626		0.6336	
Likelihood Ratio Test					339.99***		286.42***	

The table reports the probit 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. The pooled models are tested using White's corrected heteroscadasticity robust regressions.

CHAPTER 6

CONCLUSION

6.1 Introduction

This concluding chapter illustrates an overall summary of the research results. In addition, it gives recommendations for practice, addresses the research limitations and provides suggestions for possible future research.

The main aim of this doctoral thesis is to carry the dividend debate into an emerging market context and contribute more evidence to dividend literature. However, the difference from prior research is that the dividend policy behaviour of an emerging market is examined over a period, where serious economic and structural reforms have been implemented, in order to integrate with world markets. Accordingly, this research endeavours to uncover what behaviour the dividend policy of this emerging market shows. In particular, the dividend policies of the companies listed on the Istanbul Stock Exchange (ISE) are analysed, since Turkey offers an ideal setting for the purpose of this thesis in allowing a study in dividend behaviour of a developing country, which has implemented major reforms, starting with the fiscal year 2003, in compliance with the IMF stand-by agreement, the EU directives and best-practice international standards for a better working of the market economy, outward-orientation and globalisation.

This thesis has six chapters. The first chapter is an introduction to the study that discusses the study background and motivation. It further provides a summary of important developments of the ISE and justifies the rationale of choosing the ISE-listed firms as the study sample. The chapter also supplies an overview of the importance of this doctoral thesis. In Chapter 2, a detailed literature review on the dividend puzzle is presented, including the leading dividend policy theories and empirical studies from both developed and developing countries. Chapter 3 provides empirical research for the firm-specific determinants affecting dividend policy decisions of the ISE-listed firms, over a decade after Turkey adopted serious economic and structural reforms, including the IFRS and inflation accounting, starting with the fiscal year 2003. Chapter 4 focuses on the signalling theory of dividends. By using Lintner's (1956) partial adjustment model, it examines whether the ISE firms adopt deliberate cash dividend policies to convey signals to investors, and whether they follow stable cash dividend payments, as in developed markets, after the implementation of major reforms in 2003. Chapter 5 empirically investigates the link between ownership structure and dividend policy based on the agency cost theory. Particularly, it analyses the effect of family control on dividend policy from the principal-principal conflict perspective and also considers the

impacts of the non-family blockholders, such as foreign investors, domestic financial institutions, the state, and minority shareholders on the ISE firms dividend policy decisions, over a decade when Turkey employed major reforms, including the publication of the CMB's Corporate Governance Principles in the fiscal year 2003. Finally, the current chapter, Chapter 6, presents an overall summary of the research results, provides reccomendations for practice, addresses the research limitations, and gives future research suggestions.

6.2   Overall Summary of Results

After the introduction chapter, the study provides, in Chapter 2, a literature review on the dividend debate, which asserts that corporate dividend policy literature offers various explanations and contains voluminous research. Although Miller and Modigliani's (1961) dividend irrelevance theory is logical and consistent under the circumstances of perfect capital market assumptions, in real markets, where various imperfections exist, this theory becomes highly debatable. Indeed, researchers proposed a range of leading dividend theories involved with the relaxation of M&M's assumptions, and dealt with dividends in the presence of the various market imperfections, including the signalling theory, agency cost theory, transaction cost theory, tax-related explanations, bird-in-the-hand theory, pecking order theory, residual dividend theory, catering theory and maturity hypothesis. However, it is concluded that none of these theories explain the dividend puzzle single-handedly.

Chapter 2 also illustrates that empirical research regarding dividend policy is extensive. Many scholars have built and empirically tested a great number of models relating to these theories to explain why companies should pay or not pay dividends, whereas others have surveyed managers to learn their thoughts about dividends. However, the chapter shows an inconclusive judgment on the actual motivation for paying dividends, despite countless research, as in line with Fisher Black's (1976, p.5) statement that "*The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together.*"

Furthermore, it is observed that all these leading dividend policy theories, models and frameworks are originally formulated based on developed markets. In fact, earlier research on dividend policy, in terms of developing theories and empirical tests were,

focused on mainly the US market, followed by the UK market. Therefore, less is known about dividend behaviour and the explanatory power of models for other countries, particularly developing (emerging) economies, where market imperfections are the norm rather than expectations, and are much stronger than in developed countries. Nevertheless, considering the growing importance of emerging markets in terms of global equity investments, these markets have recently started attracting considerable international investors. Accordingly, emerging markets attach more pieces to the *dividend puzzle* and researchers have started investigating the dividend behaviour of corporations in developing countries (Glen *et al.*, 1995; Adaoglu, 2000).

Even though the empirical research in developing markets has relatively contributed little evidence compared to developed markets, researchers have also started examining the dividend policy behaviour in emerging economies, especially over the past two decades. A number of studies reviewed in Chapter 2, in the context of emerging markets, have mostly confirmed that dividend policy behaviour in these markets generally tend to be, not surprisingly, different from developed markets in many aspects due to the various factors such as political, social and financial instability, lack of adequate disclosure, poor laws and regulations, weaker financial intermediaries, newer markets with smaller market capitalisations, weaker corporate governance and different ownership structures   (La Porta *et al.,* 1999; 2000; Kumar and Tsetsekos, 1999; Aivazian *et al.,* 2003a and 2003b; Yurtoglu, 2003).

On the other hand, while examining dividend policy behaviour in different emerging markets, researchers have not clearly stated or distinguished, as suggested by Bekaert and Harvey (2002), between the concepts of regulatory liberalisation or integration undertaken in those markets for their study sample periods. Hence, it can be argued that dividend policy decisions of companies in an emerging market should be better understood if researchers report whether the emerging market examined passes laws for financial liberalisation or attempts to implement serious economic and structural reforms to integrate with world markets. In this respect, dividend policies of companies may significantly differ based on the process of liberalisation or integration undertaken in the emerging market in which they operate. Accordingly, this thesis is also motivated in carrying the dividend debate into an emerging market but by examining the dividend policy behaviour of a particular emerging market that implemented serious economic and structural reforms for the integration with world markets and attempts to identify what behaviour the dividend policy of this emerging market shows afterwards.

Moreover, Turkey has had a very late start in the liberalisation of its economy and the establishment of its stock market, the ISE, whose history only dates back to 1986. As illustrated in the literature review, there is very limited evidence about dividend policy in Turkey from a few studies (La Porta *et al.*, 2000; Adaoglu, 2000; Aivazian *et al.*, 2003a; 2003b and Kirkulak and Kurt, 2010), which were undertaken in the earlier stage of the ISE, while the Turkish economy was yet implementing its financial liberalisation programme, suffering long-standing macro-economic imbalances and experiencing a number of financial crises. Following the November 2002 elections, which resulted in one-party government, political uncertainty, to some degree, diminished, and economic programmes and structural reforms were jointly carried out by the government and the IMF, starting in March 2003 (CMB, 2003). Further, Turkey's progress in achieving full membership of the EU, during this period, also provided the strongest motivation in establishing new reforms, rules and regulations 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).

Accordingly, the Turkish stock market offers an ideal setting for the purpose of this thesis, and therefore the study provides empirical evidence about the dividend policy behaviour of publicly listed companies in Turkey, during its market integration period. In order to fulfil the research purpose, the sample is drawn from the Istanbul Stock Exchange. The study sample contains a recent large panel dataset of 264 non-financial and non-utility firms listed on the ISE, from 14 different industries, during the period 2003-2012, including 1,846 firm-year observations (it is 1,800 firm-year observations when the dividend pout ratio is used as a dependent variable).

The three chapters of this thesis, Chapter 3, 4 and 5, are empirical in nature. First, the financial reporting standards of the ISE firms were only based on the generally accepted principles of accounting and auditing. Even though Turkey generally enjoyed an economic growth in 1990s, it was overall an economically unstable decade experiencing a number of financial crises and having high inflation rates that surpassed 100% during this decade. Due to the inconsistent and unclear accounting practices and the absence of inflation accounting standards, the historical financial statements of the ISE firms lost their information value and misinformed investors. However, the CMB of Turkey adopted the International Financial Reporting Standards (IFRS) in 2003 and enforced listed firms to use the new rules. In addition, the CMB obliged the implementation of

inflation-adjusted accounting at the same time. This has resulted in a more transparent and more efficient worldwide financial reporting standards, providing comparable and consistent financial data for foreign and domestic investors, and other institutions. Likewise, the adoption of the IFRS and inflation accounting has given researchers a way better opportunity to study firm-specific characteristics of firms in the Turkish market. Therefore, Chapter 3 empirically investigates what firm-specific (financial) determinants affect dividend policy decisions of the ISE firms, over a decade after Turkey adopted the IFRS and inflation accounting, starting with the fiscal year 2003.

The results in Chapter 3 illustrate that profitability, firm size and firm age have significantly positive effects, whereas debt level and investment opportunities have significantly negative impacts on the dividend policy decisions of the ISE firms. Further, the results show no significant relationship between dividend policy and business risk, free cash flow, assets liquidity and assets tangibility, and therefore they are not considered as the important firm-specific determinants while the ISE firms set their dividend policies. Also, it is revealed that industry effect shows no considerable impact.

According to Aivazian *et al.* (2003b), the dividend policies of firms in emerging markets are affected by the same firm-specific determinants as their counterparts in the US; however, emerging market firms may be more sensitive to some of these determinants and may react differently, indicating the greater financial constrains in different countries under which they operate. Consequently, the results of Chapter 3 are consistent with the study of Aivazian *et al.* (2003b) and suggest that Turkish firms follow the same determinants of dividend policy as proposed by dividend theories and as empirically suggested by developed markets, after Turkey adopted the IFRS and inflation accounting starting with the fiscal year 2003. Particularly, the primary firm-specific determinants of dividend policy are profitability, debt level, firm size, investment opportunities and firm age in the context of the emerging Turkish market.

Table 6.1 on the next page summarises the theoretical findings obtained from the results of the single equation models related to the firm-specific determinants of dividend policy of the ISE-listed firms, which are reported in Chapter 3.

Table 6.1 Summary of Theoretical Findings of Chapter 3

The table presents a summary of the theoretical findings obtained from the results of the single equation models related to the firm-specific determinants of dividend policy of the ISE-listed firms, which are reported in Chapter 3.

Variables	Theory	Theory Prediction	Empirical Evidence of the Study
Profitability	Signalling Theory	Positive	✓
	Residual Dividend Theory	Positive	✓
Investment Opportunities	Transaction Cost Theory	Negative	✓
	Pecking Order Theory	Negative	✓
	Overinvestment Hypothesis	Negative	✓
	Substitute Model	Positive	X
Business Risk	Transaction Cost Theory	Negative	Not significant
Debt Policy	Agency Cost Theory	Negative	✓
Free Cash Flow	Free Cash Flow Theory	Positive	Not significant
Liquidity	Signalling Theory	Positive	Not significant
Assets Tangibility	Agency Theory	Negative	Not significant
Firm Age	Maturity Hypothesis	Positive	✓
Firm Size	Agency Cost Theory	Positive	✓
	Transaction Cost Theory	Positive	✓

Notes: ✓ stands for the consistency between the theoretical prediction and the results of the study.
X reports no evidence identified from the results.

The evidence from cross-country studies (Glen *et al.*, 1995; La Porta *et al.*, 2000; Aivazian *et al.*, 2003a) revealed that emerging market governments are likely to enforce constraints on dividend policy in order to protect both minority shareholders and creditors. Similarly, the dividend policy in the ISE was heavily regulated during the period 1985-1994 due to the first mandatory dividend policy imposed by the CMB, which obliged to pay at least 50% of the distributable income as cash dividends. Earlier studies (Adaoglu, 2000; Aivazian *et al.*, 2003a) reported that the ISE firms followed unstable dividend policies, since cash dividend payments were solely dependent on the firm's current year earnings, as forced by regulations, and any variability in earnings was directly reflected in the level of cash dividends. However, the CMB of Turkey implemented various reforms in terms of accounting standards, corporate governance, and transparency and disclosure practices. In order to prevent insider lending, in other words non-arms length transactions, the CMB regulated private banks by establishing risk group definition and calculation of loan limits for a single business group, which generally includes banks, businesses and subsidiaries in the same group. Further, the

CMB also employed much flexible mandatory dividend policy regulations (during 2003-2008) and eventually removed the restrictions forced on the dividend payments (2009 and onwards). These developments may force the ISE firms to the equity market with greater incentive for more transparent financing, since insider lending is prevented and also allow the ISE managers to set their own dividend policies to reflect their judgements in the share prices. Hence, Chapter 4 investigates whether the ISE firms adopt deliberate cash dividend policies to signal information to investors and whether they follow stable cash dividend payments, as in developed markets, after the implementation of major reforms in 2003, by using Lintner's (1956) partial adjustment model and several extensions of this model.

The empirical results in Chapter 4 show that current earnings and lagged cash dividend payments are positively significant factors in determining current cash dividend payments in the listed Turkish firms, which indicate that the Lintner's (1956) partial adjustment model works well for explaining cash dividend payments behaviour of the ISE-listed firms during the period 2003-2012. The results also indicate that the ISE managers now adjust their cash dividends by a serious degree of smoothing that is generally almost as smooth as their counterparts in the developed US market, compared to previous studies. These findings are contrary to earlier research (Adaoglu, 2000; Aivazian *et al.,* 2003a) taken in the Turkish market, which showed no support to the validity of the Lintner model and reported that the ISE-listed firms did not smooth their cash dividends during the earlier years, between 1985 and 1997.

Furthermore, the empirical results from several extensions of the Lintner model reveal some important facts regarding the Turkish market over the research period. It is found that current earnings encourage firms to increase/decrease their cash dividends but the levels of lagged earnings are the dominant component in terms of net earnings, while the ISE-listed firms make their dividend policy decisions in order to avoid spectacular and frequent changes, which is in line with Lintner's (1956) argument. When external finance (current and lagged total debt) is included into the Lintner model, significantly negative correlation between the cash dividends and external finance is reported, which possibly reflects that the ISE corporations find external finance, they now obtain from arm's length parties, more costly. By adding yearly dummies from year 2008 to 2012 into the model, the effect of the 2008 global crisis and its impact in the following years are analysed. It is found that although the September 2008 global crisis markedly hit Turkey, as in many other world markets, including both developed and developing

countries, it did not significantly affect cash dividend payments decisions of the ISE firms, as well as their preferences of following stable dividend policies.

Table 6.2 below summarises the best models obtained from applying Lintner's (1956) partial adjustment model and several extensions of this model related to the signalling theory on dividend policy of the ISE-listed firms, which are reported in Chapter 4.

Table 6.2 Summary of Best Models of Chapter 4

The table illustrates a summary of the best models from Lintner's (1956) partial adjustment model and several extensions of this model related to the signalling theory on dividend policy of the ISE-listed firms, which are reported in Chapter 4.

Dependent Variable: Cash Dividend Payments								
	Model 1		Model 2		Model 3		Model 4	
Independent Variables	Pooled OLS	System GMM	Pooled OLS	System GMM	Pooled OLS	System GMM	Pooled OLS	System GMM
Earnings	0.146*** (4.01)	0.133*** (3.52)	0.059*** (4.98)	0.057*** (3.88)	0.162*** (4.09)	0.153*** (4.22)	0.146*** (4.01)	0.135*** (3.47)
$CashDiv_{t-1}$	0.658*** (6.41)	0.690*** (9.10)	0.594*** (6.74)	0.615*** (8.10)	0.642*** (6.52)	0.663*** (10.28)	0.659*** (6.44)	0.688*** (9.02)
$Earnings_{t-1}$			0.189*** (3.62)	0.187*** (3.11)				
Debt					-0.043** (-2.24)	-0.042** (-2.18)		
$Debt_{t-1}$					-0.053** (-2.57)	-0.052** (-2.41)		
Year2008							2.871 (0.97)	2.338 (1.26)
Year2009							-4.921 (-1.51)	-3.344* (-1.83)
Year2010							1.587 (0.39)	0.438 (0.18)
Year2011							1.718 (0.33)	0.402 (0.13)
Year2012							0.151 (0.06)	0.026 (0.01)
Constant	3.816 (1.24)	3.102 (1.17)	-0.818 (-0.92)	-1.619 (-1.41)	0.141 (0.01)	0.622 (0.53)	0.352 (0.04)	0.192 (0.17)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TPR(r)	0.427	0.429	-	-	0.452	0.454	0.428	0.432
SOA(c)	0.342	0.310	0.406	0.385	0.358	0.337	0.341	0.312
Number of Observations	1,846	1,846	1,846	1,846	1,846	1,846	1,846	1,846
R-squared	81.4%		83.7%		82.2%		81.4%	

Notes: TPR = Target payout ratio, SOA = Speed of adjustment. ***, ** and * stands for significance at the 1%, 5% and 10% levels respectively.

The empirical findings in Chapter 4, overall, suggest that implementing major economic and structural reforms as well as adopting more flexible mandatory dividend policy regulations and attempting to prevent insider lending (non-arm's length transactions) lead the ISE firms to follow the same determinants as suggested by Lintner (1956) and

as followed by the US (developed) companies. Particularly, dividend payments of the ISE firms seem to be affected by previous dividend levels and current earnings. Furthermore, they attempt to adjust partially their dividends towards their target payout ratio, more interestingly with a relatively low speed of adjustment as their counterparts in developed markets. This implies that Turkish companies tend to smooth their dividends, and adopt stable dividend policies, and therefore it can be concluded that Turkish corporations have been using cash dividends as a signalling mechanism since 2003, with the implementation of severe economic and structural reforms.

In 2003, the CMB of Turkey published its Corporate Governance Principles in cooperation with the World Bank and the OECD in order to improve the ISE firms' corporate governance practices and to ensure that markets are functioning in a safer, more transparent and more efficient manner. The CMB Principles consisted of four major parts; specifically, shareholders, disclosure-transparency, stakeholders and board of directors, and all firms traded in the ISE need to comply with these principles and publish compliance reports yearly. Even though many areas have improved in Turkish corporate governance practices since 2003, the ISE firms have highly concentrated ownership structures and are heavily characterised by families. In this context, cash dividends can be used to either reduce or exacerbate the principal-principal conflicts, since dividends are the substitutes for legal protection of minority shareholders in the countries with weak legal protections. By paying dividends, controlling shareholders return profits to investors, which reduce the possibility of expropriation of wealth from others. Accordingly, Chapter 5 empirically investigates the link between ownership structure and dividend policy based on the agency cost theory of dividends for the ISE firms over a period after Turkey implemented major reform, including the publication of the CMB's Corporate Governance Principles in the fiscal year 2003.

Particularly, it analyses the effect of family control, through their ownership and board representatives, on dividend policy of the ISE firms in order to indentify whether families tend to expropriate wealth from other investors by using dividends. Further, it considers the impacts of the non-family blockholders, including foreign investors, domestic financial institutions, and the state, on dividend policy, to find out whether cash dividends are used as a monitoring device by these investors in minimising agency problems in Turkish market. Also, the attitude of minority shareholders toward cash dividends in the ISE is tested to detect whether they have a taste for higher dividends to reduce the risk of expropriation of their wealth by controlling shareholders.

The empirical results in Chapter 5 report that Turkish firms have highly concentrated ownership structure and are mostly owned by families followed by foreign investors, while other blockholders, Turkish financial institutions and the state, show relatively lower shareholdings. Moreover, it is found that foreign and state ownership are associated with 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 (both control through ownership and board representation), foreign investors, domestic financial institutions, the state and minority investors ownerships, have significantly negative impacts on the amount of dividend payouts of Turkish firms. Therefore, the findings present consistent evidence that foreign investors invest in stocks of Turkish firms for their long-run growth potential rather than the short-term dividend income. This may be implying that the increase in foreign ownership provides more monitoring on the managements' activities and hence less need for the dividend-induced monitoring device. 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. Similarly, there is consistent evidence that state ownership and dividend policy are negatively correlated, which suggests that state ownership involves less of a need for dividend-induced capital market monitoring in Turkey.

Even though family control has a significantly negative effect on the amount of dividend payouts of Turkish firms, 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 control should also be significantly and negatively affecting the probability of paying dividends), and the significantly negative relationship between dividend payout ratio and all other blockholders and even minority shareholders, the chapter shows inconclusive evidence for the expropriation argument. Indeed, this negative correlation may suggest that families are likely to cater for the dividend preferences of their shareholders. Similarly, domestic financial institutions and minority investors' stock ownership have no significant effect on Turkish firms' decisions regarding whether to pay dividends, but they are both significantly and negatively affecting the amount of the payout ratios. Hence, the 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, but it implies that small shareholders have preferences for capital gains over cash dividends, in order to possibly avoid a tax burden, due to a favourable tax treatment on capital gains provided by the Turkish tax regime.

The empirical results in Chapter 5, after all, reveal that cash dividends are not used as a monitoring mechanism by investors in order to control for agency problems in Turkish market. Also, there is not enough evidence that families are likely to expropriate by paying lower dividends. Rather, the negative relationship between ownership variables and payout ratios of Turkish firms may be the reflection of the uneven tax treatment imposed by the Turkish tax regime, with a favourable tax treatment on capital gains over cash dividends for foreign investors (both corporations and individuals) and domestic individual investors. However, the tax-preference explanation does not solely explain the whole puzzle, since Turkish corporations (both financial and non-financial) are not subject to any taxes both for capital gains and cash dividends, but they generally tend to require lower dividend payouts. However, the results show that there are different clienteles among all types of investors who own stocks of non-dividend payers and less frequent dividend paying or frequent dividend paying Turkish firms, suggesting support for the tax clientele theory. Although 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, therefore suggesting higher dividends payments, it also predicts that, other things being equal, firms with better investment opportunities should generally pay lower payout ratios in countries with good shareholder protection.

Consequently, the evidence implies 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 in significant improvements for the ISE-listed firms corporate governance, transparency and disclosure practices, and better shareholder protection. Therefore, 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.

Table 6.3 below summarises the empirical results obtained from the single equation models related to the relationship between ownership variables and dividend policy of the ISE-firms, which are reported in Chapter 5.

Table 6.3 Summary of Empirical Results of Chapter 5

The table shows a summary of the empirical results obtained from the single equation models related to the relationship between ownership variables and dividend policy of the ISE-listed firms, which are reported in Chapter 5.

Variables	Realised Signs		Empirical Results
	DPAY	DPOUT	
Family Ownership	Not Significant	Negative	• Evidence does not show enough support for the *expropriation argument*. • Evidence may suggest that families tend to cater for the dividend preferences of their shareholders, consistent with the *catering theory of dividends.*
Family Directors	Not Significant	Negative	• Evidence reveals that foreign investors tend to prefer stocks with *long-run growth* potential rather than the short-term dividend income.
Board Size	Positive	Positive	• Evidence shows that the *dividend-induced capital market monitoring* is not preferred by investors to control for agency problems.
Foreign Ownership	Negative	Negative	• Evidence reports that small shareholders have preferences for capital gains over cash dividends, which implies a tendency for the *tax-preference explanation* due to the uneven tax treatment between capital gains and dividends, imposed by the Turkish tax regime.
Institutional Ownership	Not Significant	Negative	• Evidence also suggests support for the *tax-clientele theory* since there are different clienteles among all types of investors who own stocks from non-dividend payers to frequent dividend paying firms.
State Ownership	Negative	Negative	• Evidence supports the argument that larger firms have larger size of boards and therefore the larger the board is more likely that firms pay larger dividends.
Ownership Dispersion	Not Significant	Negative	• Evidence suggests that the implementation of major reforms in 2003 have resulted significant improvements for corporate governance, transparency and disclosure practices and better shareholder protection in Turkish stock market, therefore investors prefer to hold stocks for the potential long-run growth opportunities, consistent with the *outcome model of dividends.*

Notes: DPAY = The probability of paying dividends and DPOUT = Dividend payout ratio.

6.3   Recommendations for Practice

Based on findings acquired through this enquiry, recommendations can be made to participants of this complex modern economic environment, who seek useful guidance from relevant literature. Indeed, empirical results from this thesis have significant implications for policy makers, regulators, investors and fellow researchers.

The findings infer important policy implications. First, dividend policy makers, in the emerging Turkish market, tend to make more stable dividend payments and adjust their

target payout ratios at a lower speed. The adoption of more stable dividend policies supports the view that policy makers regard this corporate decision as a signalling mechanism. This also implies that dividend policy makers only increase dividend payments when they believe that earnings can sustain higher dividend levels permanently. They are also reluctant to decrease or cut dividends drastically, since dividend decreases and cuts are bad signals to the market of firms' future prospects, especially in emerging economies where financial markets are much less stable compared to developed economies.

Second, the results show that investment opportunities have a significant negative effect on the dividend policy decisions of ISE firms. They also revealed that investors generally have preference for the potential long-run growth opportunities for the stocks they hold in the ISE, since Turkey is a fast-growing market. In this respect, dividend policy makers should carefully consider the influence of their firms' investment projects on dividend policies. This is because poor judgement might result in severe agency problems that involve the overinvestment hypothesis. By paying none or lower dividends, they may overinvest in projects with negative NPVs, instead of undertaking positive NPV investment projects with this cash. Contrarily, they may omit investing in profitable projects by paying higher dividends.

The results further indicate that there are different clienteles, among all types of investors who own shares in non-dividend payers or less-frequent or more-frequent dividend paying Turkish firms. Through these results, it is worth bearing in mind that investors' preferences for dividend may change over time. Therefore, companies' dividend policy makers should make an effort to recognise and cater to shifts in investors' demands for dividend preferences. Careless and drastic changes in dividend policy may cause a change in clientele and could be costly, due to trading costs.

The findings of this enquiry show significant implications to regulators, such as the Capital Markets Board (CMB) of Turkey and the Capital Markets Law (CML). The results show that the CMB attributed great importance to improve communications with investors, issuers and other institutions in 2003, in order to ensure that markets function in a safer, more transparent and efficient manner, in accordance with regulations that were adopted in harmony with international norms and developments. This has resulted in important improvements for the ISE-listed firms' corporate governance, transparency and disclosure practices, and better shareholder protection as well as attracting a

considerable amount of foreign investments, and Turkish investors back to the stock market. Since Turkey is a fast-growing market, these significant improvements lead to investors investing in stocks for their long-run growth potential rather than short-term dividend income, which indicate that cash dividends are not used as a monitoring mechanism in order to control agency problems by investors. In addition, the uneven tax treatment imposed by the Turkish tax regime with a favourable tax treatment on capital gains over cash dividends for foreign investors and domestic individual investors encourages these investors to hold their stocks for longer periods of time in order to avoid tax burden.

At this point, the less usage of dividend-induced capital monitoring might result in severe agency problems, as Turkish firms have a highly concentrated ownership structure, especially dominated by families who can potentially expropriate wealth from minority shareholders. Accordingly, regulators should take this potential danger into account and maintain the high quality of corporate governance, transparency and disclosure standards or even improve towards better shareholder protection. This could be done by an efficient monitoring on family-controlled firms and the imposition of appropriate regulations, encouraging independent and non-executive board members to be more active in making corporate decisions, increasing the monitoring role of foreign and institutional shareholders, and providing better protection for minority shareholders.

Furthermore, the results of this thesis can help investors gain a broad understanding of the different roles and preferences of policy makers and various shareholders, in shaping their corporate dividend policies. In addition, findings show that profitability, firm size and firm age have significantly positive effects, whereas debt and investment opportunities have significantly negative impacts on dividend payments in the emerging Turkish market. This will help investors determine their investment strategies related to their dividend preferences.

Finally, the results of this enquiry show that dividend policy decisions of companies in an emerging market differ significantly, based on the process of liberalisation or integration undertaken in the emerging market in which they operate. Accordingly, this thesis suggests that, in line with Bekaert and Harvey (2002), researchers should report whether the emerging market examined passes laws for financial liberalisation or attempts to implement serious economic and structural reforms to integrate with world markets, while examining dividend polices of different emerging markets.

6.4 Study Limitations and Further Research

This doctoral thesis has several limitations and further research is required to explore more about the dividend puzzle. First, the study is limited to a sample of industrial companies by excluding financial firms and utilities, since they are governed by different regulations and follow arguably different financial policies. Further research, therefore, could be conducted by incorporating financial and utility sector companies listed on the ISE in order to identify their dividend policy behaviour after the implementation of major reforms in Turkey in the fiscal year 2003. This would provide a more complete picture of dividend policy behaviour of all companies trading in the ISE.

Another limitation involves the nature of the research methodology. Although the study covers appropriate econometrics and various alternative regression analysis techniques (the pooled and panel logit/probit, tobit, pooled OLS, random and fixed effects, and system GMM models), the empirical results of the regression analyses on secondary data only reveal whether or not any correlation exists between dependent variable and independent variables. They do not, however, explain why a correlation exists. Hence, further research on primary data, such as interviews and questionnaire surveys conducted from the ISE managers, would be useful in understanding their perceptions about dividend policy. This would also increase the explanatory power of the various dividend theories and models as well as providing an additional perspective from the managers, who are actually responsible for making dividend policy decisions of the ISE firms.

Corporate dividend policy literature mainly focuses on explaining cash dividend payments behaviour of companies by various theories and voluminous empirical research, since cash dividends are the most common way of distributing profits to shareholders. This thesis is also limited to the analyses of cash dividend behaviour of the ISE-listed firms. However, dividend policy may consist of other types of payouts, such as stock dividends or share repurchases. Considering the major reforms implemented and recent developments of regulatory changes of dividend policy in Turkey, it is worth conducting further research on stock dividends and share repurchases in order to find out whether they can be alternative payout policies for cash dividends for the ISE firms.

Finally, this thesis is limited to the firms listed on the ISE. The implementation of major reforms and regulatory changes, however, may produce different results in different emerging markets. Therefore, conducting further research on dividend policy behaviour of other emerging markets is also suggested, and these future studies should not be limited to regulatory liberalisation of these markets but should extend to the periods when they make serious attempts for economic and structural reforms to integrate with world markets. In this respect, conducting parallel studies in the context of different emerging markets and making relevant comparisons between the findings would be worthwhile in strengthening the empirical results, to generalise these results for such markets.

This doctoral thesis, after all, extends the empirical research on dividend policy into an emerging market, which has not only passed laws for financial liberalisation, but implemented serious reforms to integrate with world markets by using a large panel dataset from Turkey. Surely, further empirical work is vital for further knowledge generation, and scholars are encouraged to carry on future studies in both Turkish market and other emerging markets. However, it is believed that this thesis can be a valuable benchmark for further longitudinal and cross-country research on this aspect of the dividend puzzle.

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