

HENRY VAN BEUSICHEM

Firms and Financial Markets

Empirical Studies on the Informational Value of
Dividends, Governance and Financial Reporting



Firms and Financial Markets:
Empirical studies on the informational value of
dividends, governance and financial reporting

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Empirical studies on the informational value of dividends,
governance and financial reporting

Ondernemingen en financiële markten:
Empirische studies over de informatiewaarde van dividenden,
governance en financiële verslaggeving

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Preface

This dissertation is the result of my Ph.D. research at the Department of Finance of the Rotterdam School of Management, Erasmus University. It is the end of a long and challenging journey. I could not have reached this point without the generous support of many others.

Firstly, I thank my doctoral supervisors Abe de Jong and Gerarda Westerhuis. Abe de Jong encouraged me to become a Ph.D. student after finishing my master thesis. At that time, I preferred to gain professional experience before embarking on this endeavour. In 2007, I joined the department and started my doctoral studies. Throughout the years, Abe provided me with the best possible supervision and guidance. I always enjoyed the stimulating meetings and I am most grateful for everything he has taught me over the years. Abe is a co-author of the papers on which chapter 2 and 3 are based. Gerarda Westerhuis inspired me to appreciate the historical context even more, which is essential for chapter 2. Secondly, I thank Philip Fliers. Philip is a very dedicated person with excellent analytical and econometric skills; moreover, he is a great person to work with. Philip is a co-author of the paper on which chapter 2 is based. Thirdly, I thank Teye Marra. Teye's insightful comments on the methodology and results sections helped me to improve chapter 3. Teye is a co-author of the paper on which chapter 3 is based.

I thank the other members of the doctoral committee, Peter Roosenboom (RSM), Erik Peek (RSM), Jan Luiten van Zanden (University of Utrecht), Gerard Mertens (Open University) and Rez Kabir (University of Twente) for their detailed comments and suggestions. I am also very grateful to Douglas V. DeJong (University of Iowa) for his comments and suggestions which I received about chapter 4. I also thank everyone who provided comments and feedback during earlier stages of the research leading to the chapters in this dissertation.

Next, I want to thank my colleagues and former colleagues from the Department of Finance and the Department of Accounting & Control at the Rotterdam School of Management, Erasmus University for all contributing to a stimulating research environment and a pleasant work environment. I want to use the opportunity to thank Bob van den Brand (University of Tilburg) for lending the much-needed editions from *Van Oss*-collection and for generously sharing his knowledge of financial reporting in the early period of the twentieth century. I also thank my fellow Ph.D. students for sharing their knowledge and insights as well as for providing some distraction, Dimitrios, Eric, Jingnan, Kumar, Manuel, Marieke, Melissa, Olga, Oliver, Patrick, Philip, Pooyan, Ruben, Thuy, Xiaohong, and Yu. I am also very grateful to Flora and Myra for their excellent administrative support.

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I gratefully acknowledge the support from Erasmus Research Institute of Management (ERIM) and the financial support from NWO. ERIM provided an excellent doctoral programme, and I also very much appreciated the practical assistance and support during the final phase of the completion of this thesis. The financial support through the NWO grants 360-52-082 and 360-52-080, applied for by Jan Luiten van Zanden and Abe de Jong, enabled me to pursue my doctoral studies.

My research is related to the research of Dutch business in the twentieth century (*'Bedrijfsleven in Nederland in de Twintigste Eeuw'* further abbreviated to BINT). The BINT-project is an initiative of the Business History Research Group of Utrecht University and its Research Institute for History and Culture. Other participants are The Netherlands Economic History Archive, the Erasmus University Rotterdam and the Foundation for the History of Technology at Eindhoven University. BINT's goal is to make an in-depth analysis of the most important elements of the Dutch business system and their adaptation over time to the major economic, social and technological developments of the twentieth century. BINT is managed by Joost Dankers, Keetie Sluyterman and Jan Luiten van Zanden. BINT published a series of seven books. I benefitted from BINT and its participants in many ways. Especially, it enhanced my understanding of the developments in the twentieth century and the impact on Dutch businesses. Also, the openness among BINT participants towards other disciplines was a great experience. I contributed to an extensive database containing financial and non-financial information of Dutch listed non-financial firms and of a selection of financial firms covering the period 1903-2003. The final BINT book, *'Over geld en macht'* by Gerarda Westerhuis and Abe de Jong, was based on this database. The database will be made publicly available to other researchers in the future.

I thank my relatives, friends, neighbours and anyone not mentioned above for their continued interest and support.

Finally, I want to thank my parents and sister, who have always encouraged and supported me. As my father passed away early in my doctoral studies, he sadly cannot share this moment with us. Above all, I thank my wife Nicole for sharing her life with me, her unconditional support and encouragement. I also thank Sophie and Evi for reminding that there are more important things in life than working on a thesis.

Henry van Beusichem
Remscheid, December 2015

Table of contents

Preface	v
Chapter 1 Introduction	1
1.1 Motivation	1
1.2 Declaration of contribution	2
1.3 Outline of the thesis	2
Chapter 2 The logic of dividend policy in the twentieth century: Evidence from the Netherlands	5
2.1 Introduction	5
2.2 Institutional background	8
2.2.1 <i>Early 20th century: Distributing profits according to the statutes</i>	8
2.2.2 <i>Post-war developments: Smooth dividends</i>	11
2.2.3 <i>The influence of financial economics: Agency and signalling</i>	12
2.3 Data, variables and methodology	14
2.3.1 <i>Data sources</i>	14
2.3.2 <i>Variables</i>	14
2.3.3 <i>Methods</i>	15
2.4 Results	16
2.4.1 <i>Descriptive statistics</i>	16
2.4.2 <i>Determinants of dividends</i>	23
2.4.3 <i>Why do firms start and quit dividend payments?</i>	34
2.4.4 <i>Market price consequences of dividends</i>	39
2.4.5 <i>Robustness</i>	43
2.5 Discussion and conclusion	44
References	56
Chapter 3 The price impact of block transactions in the Netherlands	61
3.1 Introduction	61
3.2 Background	63
3.2.1 <i>Theoretical background</i>	63
3.2.2 <i>Empirical evidence</i>	65
3.2.3 <i>Dutch setting</i>	66
3.3 Data, variables and methodology	67

3.3.1 Sample selection	67
3.3.2 Variable descriptions	68
3.3.3 Methodology	69
3.4 Results	70
3.4.1 Descriptive statistics	71
3.4.2 The market reaction to block transactions and disclosures	77
3.4.3 Bivariate analysis	82
3.4.4 Regression analysis	86
3.5 Conclusions	91
References	92
Chapter 4 The relation between transparency, corporate governance and firm performance in the Netherlands.....	95
4.1 Introduction	95
4.2 Governance, transparency, and the Dutch case	97
4.2.1 The relations between corporate governance, transparency, and performance of firms	97
4.2.2 Corporate governance in the Netherlands	100
4.2.3 Financial reporting in the Netherlands	102
4.3 Research Design	103
4.3.1 Introduction	103
4.3.2 Sample and data	103
4.3.3 Variable definitions	104
4.3.4 Statistical approach	107
4.4 Results	107
4.4.1 Summary of descriptive statistics	107
4.4.2 Summary of descriptive statistics: The pre-IFRS and the post-IFRS period.....	110
4.4.3 Explaining transparency by firm performance and corporate governance	114
4.4.4 Explaining transparency by firm performance and corporate governance: The pre-IFRS period and the post-IFRS period	116
4.4.5 Can transparency explain future performance?	121
4.5 Conclusions	127
References	135
Chapter 5 Summary and concluding comments	139
5.1 Summary	139
5.2 Directions for further research	140
Nederlandse samenvatting	143
Biography	147
Portfolio	149

Chapter 1

Introduction

1.1 Motivation

This thesis consists of three empirical studies in the fields of corporate finance and financial reporting. The first study investigates the payout policy of Dutch listed firms in the twentieth century. Over the period 1902-2003, we investigate the determinants of dividends and the level of the dividend, as well as the market price effects of dividend changes. The study documents a number of changes in the dominant perspective on dividend policy and the relation with firm policies.

The second study analyses the price impact of block transactions in the Netherlands. We analyse the stock price effects of block sales and purchases and the disclosures thereof for Dutch firms over the period 2000-2004. Under Dutch law, shareholders have to disclose ownership and trading date information when passing specific ownership thresholds. We test a conventional event study model and measure abnormal price effects both on the trading date and the disclosure date for block sales and purchases.

The final study combines the fields of corporate finance and financial reporting and investigates the relations between corporate governance, transparency and firm performance in the Netherlands. We describe the development of reporting transparency based on annual reports of Dutch non-financial listed firms. We analyse the relationship between corporate governance and reporting transparency by comparing the pre-IFRS period (1997-2003) and the post-IFRS period (2005-2007), and investigate the effect of reporting transparency on future firm performance.

1.2 Declaration of contribution

In this section, I declare my contributions to the three studies of this dissertation and acknowledge the contribution of other parties where relevant.

Chapter 1: The work in this chapter has been done by the author of this dissertation.

Chapter 2: Joint work with the co-authors Abe de Jong and Philip Fliers. We developed the approach and planned this study together as we have been working towards this study for several years. We have been working on the data collection and the database together. The author of this dissertation focused on writing the text (in several drafts), i.e. all sections. Abe de Jong provided feedback on the text and was also active in (re)writing parts in different sections. Philip Fliers executed the analysis (in several rounds) and added to the methodology section. We jointly discussed the results, possible improvements and robustness checks. The feedback from the Abe de Jong and Philip Fliers has been implemented by the author of the thesis.

Chapter 3: Joint work with the co-authors Abe de Jong and Teye Marra. This chapter was a shared project and my first project. Abe de Jong introduced the idea and we developed (literature review, methodology, analysis) and planned this study together. The writing and the analysis were done by the author of the dissertation. Teye Marra joined us after there was a first draft of the text and provided in between feedback and suggestions for improvement especially on the methodology and results sections. The feedback from the Abe de Jong and Teye Marra has been implemented by the author of the thesis. This chapter is accepted for publication in the International Journal of Corporate Governance.

Chapter 4: Single authored. The majority of the work in this chapter has been done independently by the author of this dissertation. This chapter builds on an (unpublished) project by Abe de Jong, Doug DeJong, Gerard Mertens and Charles Wasley about reporting transparency in the Netherlands. I want to thank these researchers for the opportunity to use their annual report data for 1997 and 1999 for the study in this chapter. The data was extended by the author with the years 2001, 2003, 2005 and 2007; and the methodological approach is different. The feedback from the doctoral supervisor Abe de Jong has been implemented.

Chapter 5: The work in this chapter has been done by the author of the thesis.

1.3 Outline of the thesis

Chapter 2 reports the results of the first study investigating the payout policy of Dutch listed firms in the twentieth century. In chapter 3 we analyse the price impact of block transactions in the Netherlands. Chapter 4 investigates the relation between corporate governance, transparency and firm performance in the Netherlands. The summary and

concluding comments based on the different studies in this thesis can be found in chapter 5.

Chapter 2

The logic of dividend policy in the twentieth century: Evidence from the Netherlands¹

2.1 Introduction

In 1976, Fischer Black presented the dividend puzzle, arguing that we still understand very little about firm motivations to pay dividends. Black refers to Miller and Modigliani (1961), who demonstrate the irrelevance of dividends compared to retaining the profits in the firm when inefficiencies are absent. However, in reality, transaction costs of issuance of equity to compensate for dividend outflows and tax treatment of dividend are puzzling. Why would firms pay dividends to their shareholders, when they seem to be better off with capital gains resulting from retained earnings? Since Black's challenging article financial economists have provided a number of arguments in favour of dividends, as a counterweight to transaction costs and tax losses, including the reduction of agency costs (Easterbrook, 1984; Jensen, 1986) and the value of signalling (Bhattacharya, 1979; John and Williams, 1985). In the financial economics literature, the debate continues but seems to converge on a trade-off model of payout – including dividends and share repurchases – taking into account both costs and benefits of payouts (DeAngelo and DeAngelo, 2006).

The ideas of financial economists on dividend policies are widely shared via academic research, textbooks in educational programmes and practitioner-oriented articles. Over the years, the logic of financial economists has become widespread in practice. Survey

¹ This chapter is based on a working paper co-authored by Abe de Jong and Philip Fliers. The data for this project was collected as part of the NWO project 'The corporate governance of Dutch business in the 20th century – structural change and performance', with Jan Luiten van Zanden (Utrecht University) as lead applicant (NWO 360-52-080). The authors thank Gerarda Westerhuis for helpful comments. Additionally we would like to thank John Turner, Chris Colvin, Joost Jonker, Gareth Campbell and Oscar Gelderblom. We thank the participants of the Financial History Group (Utrecht), participants of the European Business History Association Annual Congress 2015, participants of the Belgian Financial Research Forum 2014 and the participants of the European Association for Banking and Financial History New Scholars Workshop 2014.

evidence in recent decades indicates that considerations relating to agency costs and signalling are relevant, but also, that financial managers optimize payout policies vis-à-vis their investment plans and aim to stabilize dividends (Baker, Farrelly and Edelman, 1985; Brav *et al.*, 2005; Lambrecht and Myers, 2012). Zajac and Westphal (2004) provide empirical evidence that the financial economic theories and, in particular, the agency logic, have influenced corporate decisions. They show that the share repurchases of large US firms in the early 1980s can be understood from a corporate logic perspective wherein managers are stewards of their firms and cash flows should be retained or reinvested. Following the shift from corporate to agency logic, repurchases are seen as redistributions to shareholders that can mitigate the manager's opportunity to pursue their self-interest. Consequently, after the mid-1980s share repurchases increased and were rewarded with positive shareholder reactions, compared to adverse effects beforehand.

The research by Zajac and Westphal (2004) on share repurchases is a unique study on payout policies but relates to a broad and established field of research on institutional and dominant logic. Prahalad and Bettis (1986) have coined the term dominant logic to describe the way corporate managers conceptualize their business and then use these concepts in schemes to make decisions. Dominant logic thus serves as cognitive maps and decision-making schemes. Prahalad and Bettis argue that dominant logic helps to understand the shift in paradigms about the value of corporate diversification. However, they provide little guidance as to the understanding of the roots of the logic and changes therein. Recent developments in neo-institutional theory help to fill this lacuna. The institutional logic perspective aims to understand organizational behaviour as a socially constructed pattern of ideas and practices (Thornton, Ocasio and Lounsbury, 2012). The work on institutional logic resonates with the literature in economic history about institutional change, and in particular with North (2005), arguing that beliefs of humans affect their decisions, which induces institutional development. Under the assumptions of institutional logic, to explain dividend practices, one needs to trace the dominant views on what proper payout policies are. Over extended periods of time, these opinions may shift, leading to alternating dominant views. Westerhuis and De Jong (2015) apply the idea of a changing dominant logic over time by looking into developments in financing and corporate governance in the Netherlands throughout the twentieth century.

This study investigates the dividend policy of firms during the entire twentieth century in the Netherlands. Our sample contains Dutch non-financial listed firms in the period 1903-2003. As such, this paper takes an institutional logic perspective in comparing different time periods regarding their dividend policies and the determinants of these policies. We distinguish three main periods based on the prevalent dominant logic. For the three periods, each with a dominant logic of dividend policy, we define models to measure the determinants of dividend policy and value effects of dividends. The aim of these models is to test whether the outcomes are consistent with the three regimes. For our sample of 3638 observations, we run logit and OLS models including variance

decompositions. The latter approach allows us to investigate the relevance of the variables in the three periods.

In the period until the Second World War dividend policies were set according to statutory agreements and typically firms paid a fixed percentage of the nominal value as a dividend. This first period (1903-1938) is a period in which firms favoured the creation of reserves and distributed most of their profits, i.e. dividend paying firms distributed on average about 59 per cent to their shareholders, in line with dividend policies as explicitly expressed in their statutes. In this period, the reward for shareholders was a percentage of the nominal value of the shares, plus additional dividend payments, on top of the value changes of the shares. In this period, we demonstrate that profitability and not reporting losses are the key determinants of dividends while the level of payout is also determined by the profitability. This is consistent with a policy where firms first pay a compensation based on the nominal value when a profit can be reported and then distribute a significant part of the remaining profit. In this period, dividends provided very valuable information about firm's performance and share prices react strongly to dividend policies.

The later part of this period was influenced by economic and political turmoil related to the regime changes in Germany and the subsequent World War. In this later period, the number of dividend-paying firms declined steeply, which led to disappointment among shareholders, who were often holding shares while consuming from the dividend payouts. The reaction, both in practice as well as in academic writing was a call for stable dividends, where companies were building reserves to pay dividends, even in periods of declining profits. In other words, the new dominant practice was to smooth dividends.

The second period (1948-1983) consists of the post-war boom period followed by a period of slow growth. The 1950s and 1960s were characterized by an increasing number of firms paying dividends and dividend payout ratios returning to pre-war levels, caused by the tremendous post-war boom. The later period is characterized by a relatively high percentage of dividend-paying firms combined with low payout ratios caused by relatively slow growth. The analyses show the firms smooth both their dividends and their income in this period. We find that reserves also became important for dividend policies and some firms even built a specific reserve for dividends to be paid in hard times. This is consistent with the dominant practice.

In the 1980s, Dutch firms became influenced by Anglo-Saxon ideologies about shareholder value creation, including the academic work that accompanied these developments. In this period, agency and signalling models that were grounded in shareholder value-based theories became widely taught in universities and disseminated via academic work and popular media affected the beliefs of decision-makers. These theories prescribe that dividends are valuable for shareholders as a signal of future value and a sign of self-disciplining of managers. The third period (1988-2003) has high percentages of dividend paying firms together with further declining payout ratios, reflecting the relevance of modern theories. We find that profits are no longer driving

dividends. The relation between dividend and earnings has been uncoupled, consistent with findings by Brav *et al.* (2005). Most interestingly, market reactions to dividend changes become insignificant, which indicates that dividends are perceived by investors as symbolic without economic consequences (Zajac and Westphal, 2004).

This study adds to the literature on dividend policy. Other papers on dividend policy investigate a shorter period. For example, Braggion and Moore (2011) examine British firms over the period 1895-1905 and Turner, Ye and Zhan (2013) study British firms from 1825 to 1870. DeAngelo, DeAngelo and Skinner (2008) present an overview of contemporary work on dividend policy, which also focuses on shorter periods. Our analyses cover an extended period, which allows testing for different dividend regimes.

This chapter is organized as follows. In Section 2 we discuss the Dutch institutional background to dividends. Section 3 elaborates on the data and methodology. Section 4 provides an overview and explanation of the empirical results. Section 5 contains the conclusions.

2.2 Institutional background

The following describes the institutional background of Dutch firms during the twentieth century. We distinguish three main periods, i.e. the first period runs until the Second World War, the subsequent period is from the end of the Second World War to the mid-1980s, and the final period ends at the end of the twentieth century.

2.2.1 Early 20th century: *Distributing profits according to the statutes*

In the first decades of the twentieth century, the international economy was affected by economic and political instability, including two world wars. In between the wars, the world economy suffered from the Great Depression, which started in 1929 in the United States. The Netherlands has a small and open economy with a long tradition of international trade and foreign investments. Until 1914, the country experienced a long period of economic growth and international interconnectedness (Sluyterman, 2005). The neutrality of the Netherlands during the First World War provided challenges and opportunities for Dutch firms. In the period between 1918 and 1921, the Dutch economy benefited from the neutrality and grew strongly. According to Van Zanden (1998) the Dutch economy was not that badly affected by the period of the international downturn of 1921-1923 caused by, among other factors, hyperinflation in Germany and a banking crisis. However, the period from 1929 until the Second World War was a period of prolonged stagnation, due to the openness of the Dutch economy (Van Zanden, 1997: 106). From 1936 the Dutch economy recovered slightly after leaving the Gold Standard; however, it was affected again in 1938 by a short economic depression. In these years,

Dutch business prospered in the first two decades and then had to face a long period of distress. The Dutch capital market developed rapidly as many firms obtained an official listing at the Amsterdam stock exchange.

Since the nineteenth century, dividend practices had been prescribed in a firm's articles of association. Thus, compared to modern practices where managers have discretion in setting the dividends, these options were limited in the early decades of the twentieth century. The typical statutory arrangement would be as follows. First, profits were used to increase the firm's reserves up to a specified level. Then the shareholders (and directors) received a fixed payment, expressed as a percentage of their nominal equity value. The remainder was defined as excess profits and partially added to the reserves and partly paid out to directors and shareholders. The firm's profits are a key determinant of dividend payout and the level of the payout because higher profits increase the probability of a payout. However, because of the additions to the reserves, profits do not necessarily have a positive effect on the payout ratio. The practice also implies that firms with a reported loss would typically not pay a dividend. The firm's reserves affect the likelihood of a dividend in a positive way, because firms with higher reserves have fewer additional reservations to make, leaving more room for dividends.

Koert (1934) has empirically investigated the profit distribution of Dutch listed firms for the period 1900-1930.² His research focuses on Dutch firms that have not yet experienced a substantial change in their capital. Koert mentions that profit distribution as described above fitted to the majority of the firms, and could be considered the template for profit distribution (Koert, 1934: 111). Koert adds that since 1900 the final decision about the profit distribution lies with the shareholder's meeting (*Algemeene Vergadering van aandeelhouders or AvA*) (Koert, 1934: 122). Although, the decision power seems to lie with the shareholders, in practice, dispersed and unorganized shareholders rarely attended such meetings. These shareholders were more interested in short-term capital gains, rather than in firm policies leading to strong firms and/or long-term growth. He finds that firms used part of their profit to increase the reserves. Firms especially used the opportunity to do this during economically prosperous periods, e.g. during the First World War and in the following years, and during the period 1926-1929.³ He finds that these reserves have mainly been used to finance growth. The willingness to expand exceeded the availability of capital on the market (see also De Jongh, 1919:12), and, in general, firms preferred to finance their growth by using retained profits to remain independent from investors. Capital for growth could be related to investments and the increased need for working

² Koert (1934) investigated a sample of Dutch listed firms, i.e. mentioned in the *Officieele Prijscourant* ultimo 1930. Firms with a listing ultimo 1899 or with a founding year before 1900 are excluded. Koert was concerned about the bargaining power of providers of additional capital to the firm and the influence of these capital providers on the profit distribution.

³ De Jongh (1919) provides several explanations e.g. the anticipated increases in prices for replacement of (fixed) assets, or circumstances occurring that require substantial investments, in order to avoid staggeringly increasing dividends and correspondingly share valuations (which cannot be persevered), expected increases prices of materials, wages, etc., increasing the ability to redeem loans, etc.

capital. De Jongh (1919) and Koert (1934) mention that reserves were mainly used for increasing working capital, whereas fixed assets tend to be financed by debt (or preferred shares). An increasing equity capital, i.e. extra reserves, makes it easier for firms to attract additional debt (i.e. under better conditions) and to issue new shares. Some firms applied a policy of following the behaviour of other firms, according to the motto ‘*since everybody is doing it...*’ Another reason pointed out by Koert (1934: 122) is that adding parts of the earnings to the extra reserves also functioned as a way to stabilize dividends. The retained earnings were typically used to finance expansion, and no longer to cover operational losses. In addition to extra reserves, firms also applied part of the profits for increased depreciations. Another important aspect following 1900 is the introduction of preferred shares, which received a *preferred* primary dividend payment, and it could also be combined with an additional mostly capped payment based on the excess profit (*overwinst*). Koert concludes that even though the structure of the dividends remained similar throughout the period 1900-1930, the relative influence of the shareholders compared to the influence of founders and/or managers on the profit distribution dwindled over time.

Finally, as for practical considerations, liquid assets provide a source relevant for dividend payments, as do short-term liabilities (i.e. net working capital). In this period, the importance of financial markets and external financing was limited. Firms primarily relied on retained earnings to finance their investments.⁴

Until the Second World War, the prevailing type of dividend was a cash dividend. Share repurchases and stock dividends were present, but only on a minor scale (Van Keep, 1950: 87).⁵

There were different ways in which dividends have been taxed throughout this period (Brandsma, 1995). In 1892 the *Patentregt* (enactment 1805) was split into the Act on Wealth tax (*Wet op Vermogensbelasting 1892*) with an initial a fictional income tax of 4% (levied on a wealth of more than NLG 13,000) and the Act on operating tax (*Wet op Bedrijfsbelasting 1893*) 1893 which taxed both income from operation and labour at 4%, which lead to a double taxation. While the Act on dividend- and bonus/royalty tax (*Wet op de Dividend en Tantiëmebelasting 1917*) was active from 1917 till 1940, dividends and bonuses/royalties were moderately taxed. In the case of N.V.s (plc or Inc.) retained earnings or reservations were not taxed until distribution. Dividends of shares that could not be taxed according to the above act of 1917 were taxed according to the Act on coupon tax (*Wet op de Coupon Belasting 1933*) enacted in 1933, i.e. 2% tax on the income of foreign shares levied on Dutch persons or organizations. Although, short-lived the following resolution replaced the 1917 act, i.e. the Resolution on earnings tax (*Besluit op*

⁴ Polak (1923) no attention for dividends as financial policy, except on p.169 the retained earnings serve to repay debt, leading to a negative of leverage dividends (based on De Jongh, 1919).

⁵ Dorsman (1981: 8) mentions that the first stock dividend in the Netherlands was paid in 1930 by the Rubber Cultuur Maatschappij Amsterdam, and that many Dutch firms resorted to stock dividend in the Second World War due to difficulties to transfer cash (see also Van Keep, 1950, Appendix: 153-155).

de Winstbelasting 1940) 1940. Several months later the Resolution dividend tax was enacted in 1941, which was comparable to the Act of 1917.

In the Netherlands, the law on financial accounting as part of the Commercial Code was, despite the improvements in 1928 and 1929, underdeveloped until the enactment of the Company Law in 1976. Before the Second World War, financial accounting information was, because of the secret and the undisclosed reserves, typically inaccurate and it seldom disclosed more to the shareholders than required by law (Zeff, Van der Wel and Camfferman., 1992). Thus, dividends provided shareholders with information about the financial prospects.⁶

2.2.2 *Post-war developments: Smooth dividends*

Following the Second World War, there was a period of restoration and growth (1945-1973), followed by a period of economic slow-down (1974-1985).

In the period after the Second World War, the dividend policy of Dutch firms becomes influenced by ideas from US scholars and practitioners (Wilbur, 1932, and Buchanan, 1938) and these ideas are synchronous to the descriptions and models of Lintner (1956): companies aim to smooth dividends. Although they aim to pay out funds, they are hesitant to increase the dividend after profits have increased.

In the Netherlands, these ideas were first mentioned by Van Berkum in 1943 (and repeated in 1948). The influential work of Van Keep (1950) precisely describes the smoothing policies, which become the dominant paradigm (followers are De Lange, 1957; Meij and Snel, 1964; and Bouma, 1980). According to Van Keep (1950) smoothing can be justified in different ways, e.g. it can serve the best interest of shareholders. The following will provide other examples without attempting to be conclusive. It enables firms to pay more stable dividends. It strengthens the financial position of firms over time, allowing it to pay out increasing dividends. It has a positive influence on the nature of the firm's shareholders, i.e. they will be more loyal and less speculative shareholders. It improves the creditworthiness of the firm, i.e. improvement of leverage levels, and the liquidity of the firm. Financing new investments could be realized by retained earnings, i.e. at the managers' discretion, and without incurring costs of attracting additional capital. Although the determination of net income could lead to secret or undisclosed reserves, Van Keep considers these to be in line with the conservatism principle (*voorzichtigheids principe*). Although Van Keep acknowledges the potential risk that reserves from the past could be used to improve current net income (income smoothing), he assumes that managers are likely to engage in this anyway. A plausible motivation in favour of this practice is the turbulent days of the 1930s, where the aim for stability is a counter-force.

⁶ This situation was not uncommon to other countries either, e.g. Rutterford (2004) finds that before the reforms, i.e. the 1948 Companies Act and the 1965 taxation system, British investors needed to stick to dividend-based valuation techniques because of the low credibility of the British earnings figures.

Since the 1970s, some Dutch firms paid so-called choice-dividends, where the firm offered investors a choice between a cash dividend and a stock dividend (Dorsman, 1981; Klaassen, 1987; Van den Burg, 1990). Initially financial firms offered choice dividends, but later other firms followed.

There were different ways in which dividends have been taxed throughout this period (based on Brandsma, 1995). In 1941, there was a resolution for a dividend limitation (*Besluit op de Dividendbeperking 1941*) by imposing a ‘super’ tax on N.V.s that paid out more than 6% on paid-in capital, a tax ranging from 50% (for 7%) to (for 100%) 400%. This limitation remained intact until the book year of 1949. It was replaced in 1950 by a new dividend limitation (*Besluit op de Dividendbeperking 1950*) which remained intact until the book year of 1953. Both were based on social reasons following the Second World War. During the Second World War in 1942 corporate tax was introduced to the Dutch institutional setting. This tax was considered and planned by the Dutch government for some time before the Second World War. The Act on dividend tax (*Wet op Dividendbelasting 1965*) 1965 was a revision of Act 1941 (or resolution 1941), of which the main change was a tax increase from 15% to an internationally customary 25%. In 1969, there was another revision. Finally, the oil embargo by the OPEC countries in 1973 led to the Enabling Act (*Machtigingswet Inkomensvorming 1974*) enacted in 1974, which enabled the government to limit prices, income, dividends and rents. This meant for dividends that the dividend percentage could not be higher than the maximum of the percentage of the previous year or the average over the past five years.

Since the enactment of the Law on external financial reporting (*Wet op de Jaarrekening van Ondernemingen*) in 1971, the quality of financial reporting improved. However, in addition to dividend smoothing, firms were also managing their earnings in order to smooth the reported profits (Hoogendoorn, 1985).

2.2.3 *The influence of financial economics: Agency and signalling*

Since the 1980s, the Dutch firms have been increasingly influenced by international development. For example, the shares of Dutch firms were increasingly held by foreign investors, but also, Dutch firms expanded their business internationally. After the economic recessions of the 1970s and early 1980s the Dutch economy grew hand-in-hand with the world economy. At the same time, the collaborative structures from the 1960s and 1970s in which capital and labour joint forces were put under pressure (De Jong, Röell and Westerhuis, 2010). In this period, the ideology of shareholder value maximization was brought in from Anglo-Saxon countries. These developments led to attention for dividend policies that could help firms to maximize their stock prices.

It is interesting to sketch the academic developments in the US concerning dividend policies. In 1961, Miller and Modigliani had argued that dividend policy is not relevant for firm value under stringent assumptions. Later theorists have argued that dividends are relevant for shareholder value and two theoretical ideas have become important: moral

hazard agency and adverse selection signalling. The moral hazard agency arguments (Jensen and Meckling, 1976; Grossman and Hart, 1980; Easterbrook, 1984; Jensen, 1986) state that managers are inclined to act out of self-interest at the expense of shareholders. The (agency) costs of this behaviour can be reduced via dividends: firms should simply pay out their free cash flows to prevent managers from wasting the funds. Moreover, cash constrained managers – thanks to the dividends – were forced to approach the capital market for additional funding, which allows for a disciplining role of this market. This leads to free cash flow having a positive effect on dividends because firms with high earnings should return these to financial markets. At the same time, alternative disciplinary devices reduce the need for dividends (for example leverage, ownership and board structures).

The signalling theory argues that firms can convey valuable signals to financial markets about future prospects (Spence, 1974; Bhattacharya, 1979; Miller and Rock, 1985). The dividend decision is related to information asymmetry between managers and outside shareholders. It is thus expected that small and newly established firms may be more likely to pay dividends. However, there may also be the inverted size effect as larger firms become complex and are more difficult to value. The tangibility of assets also relates to information asymmetry as tangible assets are easier to value objectively. Interestingly, the signalling theory puts a strong emphasis on the decision to pay a dividend or not, and *not* on the level of the dividend vis-à-vis the profits. We would expect more companies to pay lower dividends.

The Anglo-Saxon theories provided by financial economists strongly influenced Dutch academics in their research and teaching. For example, Duffhues (1997) discusses in several chapters of his widely-used textbook the modern dividend theories; while in the previous generation of textbooks, these were absent (Bouma, 1980).

In the Netherlands share repurchases were still relatively uncommon, mainly for fiscal reasons: the revenues of repurchased shares were treated as dividend income. As late as 2001 this disadvantage was removed. Several empirical studies on share repurchases show the minor importance of this way to distribute profits (Herst and Rebers, 1996; Baltus and Schouten, 2000; Roosenboom, Gorjaev and Van den Beemt, 2001).

There were different ways in which dividends have been taxed throughout this period (based on Brandsma, 1995). The Act on dividend tax (*Wet op Dividendbelasting 1965*) 1965 requires a tax rate of an internationally customary 25%, and currently, it is 15%. As of 2001, there is a new tax system based on three *so-called* boxes. Box 1 includes income from wages, profits, social security benefits and pensions, and home ownership and taxes with progressive tax brackets. Box 2 includes income from substantial business ownership taxed at a flat tax rate of 25% on income. Finally, box 3 includes income from savings and investments at a flat tax rate of 1.2% (4% fictional return taxed at 30%) on the total value of savings and investments.

2.3 Data, variables and methodology

We divide our sample of 1903-2003 into three periods, based on the differences between dominant ideas about dividend policies. For each of the three periods we conduct a set of analyses to measure whether the dominant ideas are represented in the data and estimations. Our first period is 1903-1938, which ends before the Second World War. The second period runs from 1948 to 1983, and the final period from 1988 to 2003. In section 3.1 we list our data sources. Section 3.2 introduces the variables in our tests and section 3.3 explains our methods.

2.3.1 Data sources

We investigate a sample of Dutch non-financial corporations that are listed on the stock exchange of Amsterdam. Our data covers the period 1903 to 2003. We collect firm data for one year per five-year period and exclude the Second World War, which yields twenty cross-sections of five-year intervals. The financial and non-financial data comes from different sources. First, the *Gids bij de Prijscourant* contains share and dividend information of all securities listed in Amsterdam. Second, the *Van Oss Effectenboek* is a contemporary investor manual. The manual was published annually from 1903 until 1978 and includes balance sheets, profit and loss statements, share information, names of directors, and information on the distribution of profits. Third, the *Tabel - Der laagste en hoogste koersen* provide information on stock prices and dividends. Fourth, for the period from 1977 to 2003 firm data was collected from a database with exchange-listed firms of the *Centraal Bureau Statistiek (Statistiek Beurs NV's)*. We include firms in our sample when in a given year complete information is available for the variables in our analyses.⁷ This limits our sample, as in the early part of the twentieth century firms disclosed their financial data on a voluntary basis and some firms provided only a limited number of items. Our sample has 3,638 firm-year observations for 704 unique firms.

2.3.2 Variables

In Appendix I, we list the variables used in this study. To facilitate a comparison over the twentieth century, we standardize balance sheets and profit and loss statements. We transform all accounting information as good as possible to modern financial statement structures (see Westerhuis and De Jong (2015) and Colvin, De Jong and Fliers (2015) for detailed descriptions). The most important adjustment relates to the nature of early balance sheets, which are provided in values prior to the distribution of profits. As a result, we transform these balance sheets as well as the profit and loss statements into *post-distribution* statements. This transformation yields the net income, and also affects the reserves by adding the retained earnings.

⁷ An exception is the market price of the shares (2,961 observations).

The dividend measures in the study are dividend payments, which is an indicator variable with a value of one in case a firm pays a cash or choice dividend, and zero otherwise. We thus exclude stock dividends from our dividend measure. The payout ratio is defined as the amount of cash or choice dividend scaled by free cash flow. The latter metric is the net income according to modern standards plus depreciation. We opt for this denominator to include the amount cash available to the firm for dividend payment. Following standard conventions in the literature, we set the payout ratio to one when loss-making firms pay dividends and we cap the ratio at one. For firms and investors both the actually published profits (without transformation) as well as the economic profitability (with transformation) are relevant. We include both reported and modern profits.

For dividend policies, the reserve position of firms is important as a resource for dividend payments when profits are insufficient. Over time, the accounting practices and regulations for Dutch firms have changed. In particular, in the first half of the twentieth century, many firms held hidden reserves by depreciating assets much faster than the decrease of their economic value. As mentioned before, this conservatism leads to deflated assets values and thus an underestimation of the equity reserves. We benefit from the fact that many firms openly value assets at minimal and unrealistic values, such as one guilder for a factory. Of course, we cannot measure the actual value of the assets, but we use the revelation of the practice to construct an indicator variable Conservatism for firms with at least one asset valued at less than ten guilders.

Firms with preferred shares can pay dividends both to ordinary and preferred shareholders. Typically the expectations of preferred shareholders and – when applicable – the cumulative nature of dividends increase the probability of dividend payouts by a firm. Therefore, we include an indicator variable for firms with preferred shares. Additionally, we include a control variable for Family firms. We construct this variable as a dummy variable which takes the value of one if the name of a family is present in the firm's name or if two or more board members are from the same family. We realize that this metric is limited as a firm can also be controlled through ownership of shares by a particular family. However, ownership data is not available until 1992 in the Netherlands.

2.3.3 Methods

In our analyses, we aim to explain reasons for firms to pay a dividend and also the determinants of the level of dividends paid. We do this in separate analyses. First, we use binomial choice models to understand the firms' decision to pay dividends. In addition, we use binomial choice models to explain firm decisions to initiate or discontinue dividend payments. Equation 1 provides a reduced form of our logit model.

$$\text{Log}_e \frac{\pi_{i,t}(\text{Propensity to pay})}{1 - \pi_{i,t}(\text{Propensity to pay})} = \alpha_i + \beta_n X_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where dividend payments are the firms' choice variable on whether the firm (a) pays a dividend, (b) starts (quits) paying dividends. $X_{i,t}$ is a vector of explanatory variables. All logit models include corrections for unobserved industry and macro-economic effects. Standard errors are clustered at the firm level. For these models, we report the marginal effects at the median. Subsequently we use OLS-regressions to explain the cross-sectional variation in dividend payouts. The dependent variable is the dividend payout ratio. Equation 2 illustrates these models.

$$\text{Payout ratio}_{i,t} = \alpha_i + \beta_n X_{i,t} + \varepsilon_{i,t} \quad (2)$$

Payout ratio_{i,t} is the firm's payout ratio, i.e. dividend payment to free cash flow. $X_{i,t}$ is a vector of explanatory variables. All OLS-models include corrections for unobserved industry and macro-economic effects and standard errors are clustered at the firm level. To assess the overall relative relevance of our models compared across periods, we report both the AIC-information criterion (Akaike, 1974) and (pseudo or adjusted) R-squared statistics.

As we aim to compare the relevance of specific explanatory variables over three time periods, we need to assess the relative contribution to the explanatory power of the models. This allows us to measure the importance of dominant logic. We use Shapely variance-decomposition algorithms to attribute portions of the models' explanatory power to specific factors in our model. This methodology is commonly used in household finance (see Sastre and Trannoy, 2002; Bourguignon, Robilliard and Robinson, 2005; and, of course, Shapley, 1953).

2.4 Results

In this section, we describe the results of the analyses. We start with the descriptive statistics of our full sample (section 2.4.1). Then we explain for each of the three periods why firms pay dividends and how much (section 2.4.2). Next we investigate the antecedents of firms that start and quit dividend payments (section 2.4.3). We also measure the market value effects of dividend policies (section 2.4.4). Finally, we conduct some robustness checks (section 2.4.5).

2.4.1 Descriptive statistics

Table 2.1 describes the evolution of dividend policies over the period 1903-2003 and depicts the fraction of dividend-paying firms and payout ratio for the full sample of firms and for dividend-paying firms. Moreover, it shows the percentages of firms that start or quit paying dividends. For example, in 1903, we have 82 firm-years. The reported return on equity was on average 5%, which equals the average return on equity after our

corrections to modern standards. The free cash flow is 7% of the book value of equity, on average. 13% of the firms reported a loss. Of the firms in our sample in 1903, 56% have paid a dividend. The average payout ratio for the full sample is 37% of the free cash flow. If we only consider dividend-paying firms, the payout is on average 65%. In 1908, we saw that some firms have adjusted their dividend policy relative to 1903, i.e. 14% of the firms with information for 1903 and 1908 decide to start paying a dividend whereas 2% decided to discontinue their dividend payments. The other 84% of the sample have not adjusted their dividend policy, i.e. they continue paying or not paying dividends.

The average fraction of dividend paying firms over the twentieth century is 68% and the payout ratio is 26% for the full sample and 39% when focusing only on dividend payers. Figure 1 graphically summarizes the development of the fraction of dividend-paying firms and the average payout ratio. In this figure, we observe some striking movements throughout the 1903-2003 period. The development of the percentage of dividend-paying firms shows an initial upward movement until 1918 (74%) followed by a drop until 1933 (27%). Clearly, the great depression has a strong effect on firms' ability to pay dividends and by 1993, only one out of four firms can afford a dividend. Next, we see the fraction of dividend paying firms increasing rapidly until 1948 back to 74%, after which it continues to move up until 1963 (88%). During the period after the Second World War, we observe some variation, but the norm is to pay a dividend. The payout ratio between 1908 and 1938 is relatively high: it ranges between 53% and 66% for dividend-paying firms. Then the payout ratio is fairly constant between 1948 (36%) and 1963 (37%) until it subsequently drops to the lowest average payout ratio in the century in 1983 (19%).

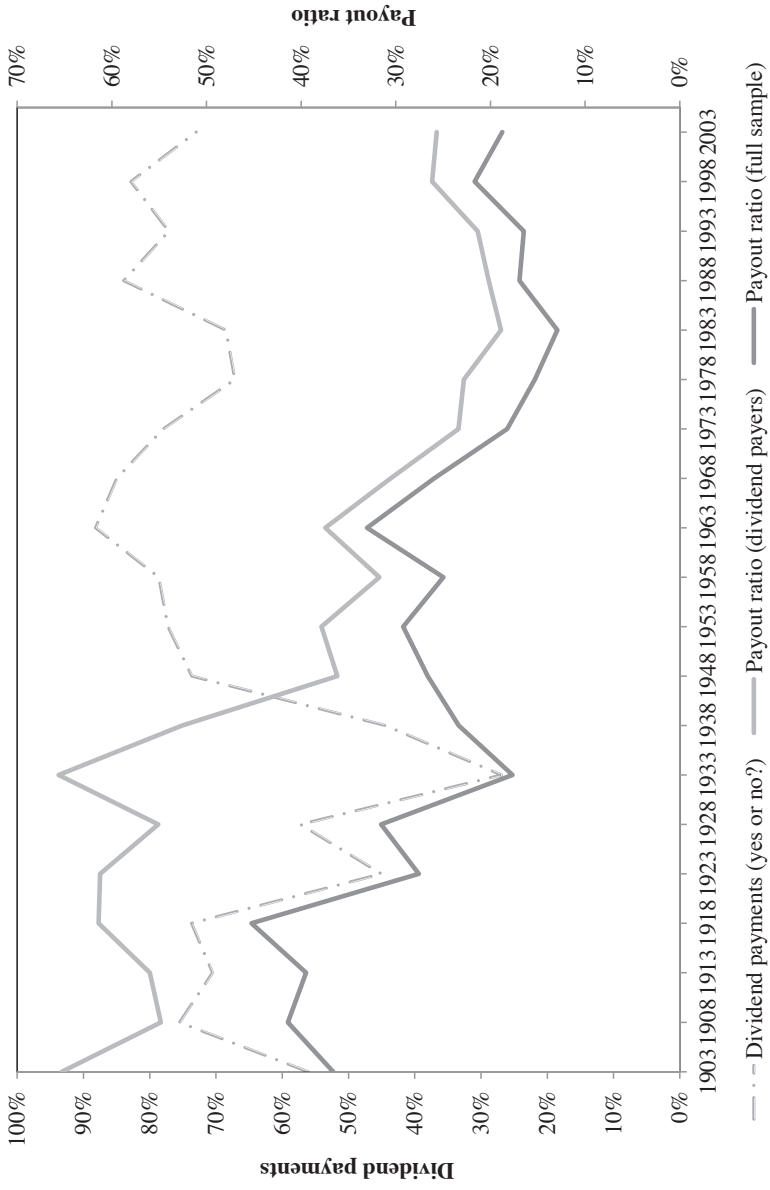
Finally, we observe a modest upward movement from 1988 (20%) until 2003 (26%). It is clear that the three regimes we have identified are represented in the data. Until the 1940s, we have many dividend-paying firms except in the 1930s crisis and these firms pay out the majority of their profits. Then after the Second World War, the aim for smooth dividends leads to most firms paying a dividend, which is somewhat lower due to precautionary reserve-building. By the late 1980s dividends almost seem symbolic, with many firms paying very modest dividends.

Table 2.1 Descriptive statistics of dividend policy and profitability measures

Year	N (full sample)	Profitability				Dividend payments (yes or no?)				Payout ratio	
		Return on Equity (modern)	Return on Equity (reported)	Free cash flow (modern)	Losses (reported)	Firms that pay dividends	Firms that start paying dividends	Firms that quit paying dividends	Payout ratio for dividend payers	Payout ratio for full sample	
1903	82	5%	5%	7%	13%	56%	n.a.	n.a.	65%	37%	
1908	98	7%	7%	10%	9%	76%	14%	2%	55%	41%	
1913	78	8%	8%	12%	10%	71%	6%	4%	56%	39%	
1918	152	8%	12%	15%	9%	74%	3%	5%	61%	45%	
1923	271	1%	-1%	6%	27%	45%	3%	14%	61%	28%	
1928	269	8%	7%	12%	11%	57%	17%	11%	55%	32%	
1933	249	-1%	-4%	2%	41%	27%	5%	36%	66%	18%	
1938	259	6%	4%	10%	19%	44%	21%	7%	53%	23%	
1948	258	11%	10%	18%	4%	74%	16%	3%	36%	27%	
1953	303	8%	7%	17%	11%	77%	7%	3%	38%	29%	
1958	234	11%	7%	20%	4%	79%	6%	11%	32%	25%	
1963	271	8%	8%	18%	8%	88%	8%	3%	37%	33%	
1968	233	8%	8%	18%	8%	85%	4%	9%	31%	26%	
1973	168	7%	8%	18%	10%	78%	3%	13%	23%	18%	
1978	137	6%	6%	19%	16%	67%	6%	22%	23%	15%	
1983	108	5%	5%	22%	14%	69%	12%	19%	19%	13%	
1988	112	12%	12%	28%	8%	84%	15%	4%	20%	17%	
1993	105	9%	9%	26%	16%	77%	4%	11%	21%	16%	
1998	140	20%	20%	37%	9%	83%	9%	2%	26%	22%	
2003	111	4%	4%	23%	27%	73%	5%	9%	26%	19%	
Total	3,638	7%	7%	16%	14%	68%	9%	10%	39%	26%	

This table contains descriptive statistics for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. For each cross-section, we report the number of observations and the fraction or mean for all variables mentioned in the top row of the table. For the profitability variables, we mention the return on equity (modern), return on equity (reported), free cash flow (modern) and losses (reported). The dividend policy measures are separated for dividend payers and payout ratio. Dividend payments consist of 1) firms that pay dividends, which are firms that pay dividends, 2) firms that start paying dividends are firms that did not pay in the previous period but do in this period, and 3) firms that quit paying dividends are firms that did not pay in the previous period but do in this period. Payout ratio consists of payout ratio for dividend payers and payout ratio for the full sample. Definitions of the variables are provided in Appendix I.

Figure 2.1 Dividend payments and payout ratio



Based on Table 2.1

In Table 2.2 we investigate the volatility of profitability and dividends over time. Table 2.2 shows in Panel A the mean value for payout and profitability measures per period of five pooled cross-sections. For these five-period windows, we calculate the variances for each firm and present the median of these variances (to be included in this analysis we require at least two firm-year observations per cross-section). Lower variances imply that firms smooth their dividends and profits. The periods are moving forward in time, with a break due to the missing data for 1943. For the period 1903-1923, we use data of 1903, 1908, 1913, 1918 and 1923 and we find an average payout of 8% of the equity, a return on equity of 12% and a free cash flow of 15%, the latter two according to modern standards. For this period, we find that the median variances have values of 0.04%, 0.11%, and 0.20%, respectively. We summarize our findings for the median variances in Figure 2. In Figure 2 we see that in the period until 1938 that the median values of the variances of payout, return on equity and free cash flow increased over time. This reflects an increasing volatility of measures and the values reaching a high towards the end of the first period which corresponds to the turbulent times prior to World War II. The earnings were increasingly volatile and this volatility was passed to investors in the dividend policies because smoothing was not yet a purpose in dividend policies.

In the subsequent period we see that especially the volatility of payout is very low until the 1980s. While return on equity is less volatile, we see a downward sloping movement in the median variance of free cash flow. The difference between the two lines can be explained primarily by the investments in the recovery period and the custom of depreciating assets faster their economic lifespan, the effect of which is visible until this approach was considered inappropriate at the end of the 1950s and the beginning of the 1960s. The period from the 1940s to the 1980s we have characterized as dividend smoothing indeed demonstrate smooth dividends of the firms in our sample. The most recent period shows a relatively moderate increase in the volatility of payout compared to the rapid increase in volatility for both return on equity and free cash flow.

Table 2.2 Volatility and distribution of profitability and dividends

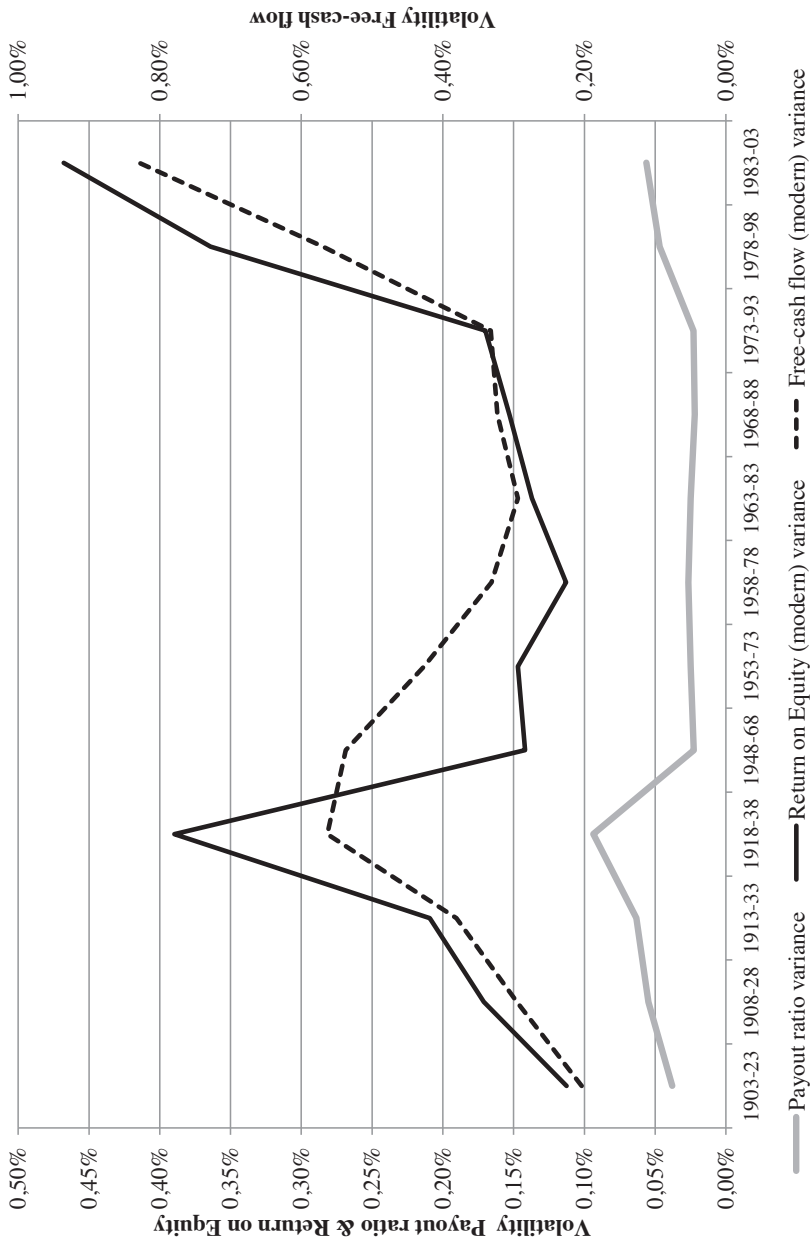
Panel A Averages and volatility of profitability and dividends		Payout ratio/Total equity		Return on Equity (modern)		Free cash flow (modern)		Payout ratio variance		Return on Equity (modern) variance		Free cash flow (modern) variance	
Period	N	mean	equity	mean	mean	mean	mean	p50	p50	p50	p50	p50	p50
1903-23	212	8%	8%	12%	15%	0.04%	0.11%	0.04%	0.11%	0.04%	0.11%	0.04%	0.11%
1908-28	256	9%	9%	13%	16%	0.05%	0.17%	0.05%	0.17%	0.05%	0.17%	0.05%	0.17%
1913-33	258	9%	9%	14%	16%	0.06%	0.21%	0.06%	0.21%	0.06%	0.21%	0.06%	0.21%
1918-38	320	9%	9%	14%	16%	0.09%	0.39%	0.09%	0.39%	0.09%	0.39%	0.09%	0.39%
1948-68	722	6%	6%	11%	20%	0.02%	0.14%	0.02%	0.14%	0.02%	0.14%	0.02%	0.14%
1953-73	677	6%	6%	10%	21%	0.02%	0.15%	0.02%	0.15%	0.02%	0.15%	0.02%	0.15%
1958-78	560	5%	5%	10%	21%	0.03%	0.11%	0.03%	0.11%	0.03%	0.11%	0.03%	0.11%
1963-83	458	5%	5%	10%	22%	0.02%	0.14%	0.02%	0.14%	0.02%	0.14%	0.02%	0.14%
1968-88	399	5%	5%	11%	24%	0.02%	0.15%	0.02%	0.15%	0.02%	0.15%	0.02%	0.15%
1973-93	318	5%	5%	13%	27%	0.02%	0.17%	0.02%	0.17%	0.02%	0.17%	0.02%	0.17%
1978-98	325	7%	7%	16%	31%	0.05%	0.36%	0.05%	0.36%	0.05%	0.36%	0.05%	0.36%
1983-03	296	7%	7%	17%	34%	0.06%	0.47%	0.06%	0.47%	0.06%	0.47%	0.06%	0.47%

Panel B Profitability, dividend payments and payout ratios for different profit classes

Profit class	1903-1938				1948-1983				1988-2003			
	N	Free cash flow (modern)	Dividend paying firms	Payout ratio	N	Free cash flow (modern)	Dividend paying firms	Payout ratio	N	Free cash flow (modern)	Dividend paying firms	Payout ratio
Loss	229	-7%	3%	3%	83	-5%	2%	2%	36	-17%	11%	11%
Q1	240	2%	26%	18%	276	6%	59%	35%	91	14%	66%	19%
Q2	252	6%	51%	36%	330	12%	85%	33%	88	24%	88%	19%
Q3	245	9%	74%	47%	346	17%	86%	25%	88	30%	93%	20%
Q4	239	15%	76%	39%	346	24%	88%	23%	83	39%	93%	20%
Q5	253	26%	73%	33%	331	36%	89%	18%	82	60%	88%	18%
Total	1458	9%	51%	30%	1712	18%	78%	25%	468	29%	80%	19%

This table contains descriptive statistics for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. Panel A reports the number of observations and the mean and the median of the variances for payout and profitability measures per five-period window (each window is a pooled cross-section). For these five-period windows, we calculate the variances for each firm and present the median of these variances, i.e. to be included in this analysis we require at least two firm-year observations per cross-section. Payout ratio/total equity is defined as (dividends paid to free cash flow) scaled by total equity. Panel B reports for the periods 1903-1938, 1948-1983 and 1988-2003, per profit class the number of observations, the mean of free cash flow (modern), the fraction of firms that pay dividends (compare to dividend payments) and the mean of payout ratio. Profit classes are created based on free cash flow (modern), i.e. 1) the class 'loss' consists of observations which have a free cash flow (modern) less than zero, 2) the remaining observations with free cash flow (modern) of zero and larger are added to the quintiles 'Q1' to 'Q5' according to the size of their free cash flow (modern). In order to account for trends in profitability, we add observations to a profitability group on a yearly basis, which explains why the number of observations is not constant across quintiles. Note that the payout ratio is set to one in case a firm with a loss pays a dividend, which explains that for loss-making firms the fraction of firms that pay dividends equals the payout ratio. Definitions of the variables are provided in Appendix I.

Figure 2.2 Volatility of profitability and dividends



Based on Table 2.2

In Panel B of Table 2.2, we analyse the percentage of firms that pay dividends and the payout ratio for different profitability groups for each period. The purpose of this analysis is to show the dividend effects of losses and non-linearity in the effect profits on dividends. First, we create profitability groups based on free cash flow values. The first group 'loss' consists of observations which have experienced a loss. The remaining observations 'Q1' to 'Q5' are put in quintiles, with increasing free cash flows values, where observations will be grouped increasing quintiles. To account for trends in profits, we add observations to a profitability group on a yearly basis, which explains why the number of observations is not constant across quintiles. Next, we present per period for each profitability group the average free cash flow, the percentage of dividend-paying firms and payout ratio. Note that the payout ratio is set to one in case a firm with a loss pays a dividend. For loss-making firms the fraction of firms that pay dividends equals the payout ratio.

In the period up to 1938, the percentage of dividend-paying firms increased with profitability. However, the payout ratio increased until quintile three and then subsequently decreased. The more profitable a firm is, the more likely they will pay dividends, which is line with typical statutory arrangements. The payout ratio is increasing with profitability, but not across all groups, which can be partially explained by the fact that firms strive to pay the promised dividend amounts and that these statutes also include some additions to reserves. For the period 1948-1983, we observe an increasing fraction of dividend paying firms when moving along the quintiles. In this period payout ratio decreases with increasing profitability only until the second quintile. These findings are in line with expectations based on dividend smoothing, even though the majority of firms pay dividends, they tend to pay low and stable dividends. Finally, in the period 1988-2003, we find that regardless of the profitability group that the percentage of dividend-paying firms is high and the payout ratio is low. Even the loss-making firms have 11% of dividend paying firms, as compared to 2-3% in earlier periods. In this most recent period, we see that dividend policy is largely independent of profitability or profitability levels. The majority of the firms pay dividends and if they do, it is of a low level.

2.4.2 Determinants of dividends

To get a better understanding about dividend policy and its determinants, we first provide descriptive analysis for each of the three periods. In Table 2.3 we provide the mean and the median values for our variables and in Table 2.4 we report the results based on comparing the dividend policy determinants for paying and non-paying firms, i.e. we provide the means, and the results of *t*-tests based on the means. These results provide an indication about which variables are likely to determine whether or not a firm will pay dividends. Next, we provide multivariate analyses in Table 2.5 and Table 2.6.

Table 2.3 Descriptive statistics for different time periods

Variables	1903-1938		1948-1983		1988-2003	
	(N = 1458)		(N = 1712)		(N = 468)	
	mean	median	mean	median	mean	median
Dividend payments	0.511	1.000	0.784	1.000	0.795	1.000
Payout ratio	0.298	0.121	0.252	0.211	0.187	0.179
Return on Equity (modern)	0.049	0.047	0.085	0.082	0.119	0.138
Return on Equity (reported)	0.036	0.037	0.077	0.074	0.119	0.138
Free cash flow (modern)	0.088	0.074	0.182	0.174	0.292	0.282
Reserves (scaled by total assets)	0.023	0.018	0.163	0.149	0.136	0.176
Losses (reported)	0.203	0.000	0.085	0.000	0.147	0.000
Leverage	0.346	0.335	0.451	0.458	0.545	0.547
Net working capital	0.185	0.123	0.243	0.238	0.156	0.157
Liquidity	0.210	0.157	0.343	0.327	0.377	0.338
Tangibility	0.403	0.369	0.284	0.252	0.336	0.332
Firm size (inflation corrected), in millions	110	49	376	80	2298	565
Conservatism (dummy)	0.352	0.000	0.345	0.000	0.000	0.000
Market-to-Book	1.052	0.906	1.632	1.305	2.693	1.568
Asset Growth (past 5 years)	0.065	-0.003	0.633	0.435	0.555	0.361
Asset Growth (next 5 years)	0.078	0.008	0.582	0.414	0.589	0.382
Family firm (weak)	0.308	0.000	0.304	0.000	0.090	0.000
Board size	6.915	6.000	7.395	7.000	7.959	8.000
# of interlocks with banks	1.121	1.000	0.998	1.000	0.900	0.000
# of interlocks with firms	8.011	5.000	7.477	5.000	4.885	4.000
Preferred shares	0.046	0.000	0.330	0.000	0.442	0.000

This table contains descriptive statistics for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. For the periods 1903-1938, 1948-1983 and 1988-2003, we report per variable the mean and median. Definitions of the variables are provided in Appendix I.

Table 2.4 Differences between firms that pay dividends and those that do not pay dividends

Variables	1903-1938			1948-1983			1988-2003		
	Dividend Payers (N=745)	Non-dividend Payers (N=713)	Difference in means	Dividend Payers (N=1342)	Non-dividend Payers (N=369)	Difference in means	Dividend Payers (N=372)	Non-dividend Payers (N=96)	Difference in means
	mean	mean	t-value	mean	mean	t-value	mean	mean	t-value
Payout ratio	0.583	0.000	-60.837***	0.321	0.000	-54.673***	0.235	0.000	-30.052***
Return on Equity (modern)	0.105	-0.009	-24.693***	0.107	0.006	-16.276***	0.172	-0.087	-9.863***
Return on Equity (reported)	0.113	-0.044	-27.3***	0.102	-0.014	-19.934***	0.172	-0.087	-9.863***
Free cash flow (modern)	0.141	0.032	20.615***	0.203	0.107	12.335***	0.335	0.127	-6.486***
Reserves (scaled by total assets)	0.057	-0.012	-11.378***	0.190	0.065	-14.473***	0.209	-0.143	-6.179***
Losses (reported)	0.007	0.408	21.511***	0.005	0.374	14.576***	0.035	0.583	10.654***
Leverage	0.360	0.331	-2.599***	0.451	0.450	-0.082	0.534	0.589	2.935***
Net working capital	0.190	0.181	-0.682	0.251	0.214	-3.321***	0.160	0.143	-0.825
Liquidity	0.242	0.177	-7.037***	0.352	0.310	-4.099***	0.377	0.374	-0.167
Tangibility	0.367	0.439	4.36***	0.282	0.292	0.732	0.341	0.316	-1.103
Firm size (inflation corrected), in millions	131	88	-7.494***	384	345	-6.743***	2592	1156	-6.001***
Conservatism (dummy)	0.334	0.370	1.44	0.347	0.339	-0.304			
Market-to-Book	1.389	0.668	-16.809***	1.829	0.891	-17.533***	2.649	2.860	0.425
Asset Growth (past 5 years)	0.174	-0.047	-9.449***	0.706	0.361	-7.385***	0.603	0.338	-2.504**
Asset Growth (next 5 years)	0.131	0.014	-5.397***	0.638	0.333	-6.029***	0.631	0.365	-2.078*
Family firm (weak)	0.313	0.303	-0.405	0.331	0.206	-5.059***	0.102	0.042	-2.341*
Board size	7.230	6.586	-5.497***	7.600	6.631	-6.106***	8.191	7.063	-4.042***
# of interlocks with banks	1.195	1.045	-2.855***	1.025	0.892	-1.945**	1.003	0.500	-4.547***
# of interlocks with firms	8.491	7.509	-2.391**	7.741	6.453	-3.688***	5.347	3.094	-5.325***
Preferred shares	0.043	0.049	0.559	0.337	0.306	-1.121	0.438	0.458	0.354

This table contains descriptive statistics for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. We report separately for the periods 1903-1938, 1948-1983 and 1988-2003, per variable the mean and median for dividend payers and non-dividend payers. Definitions of the variables are provided in Appendix I.

Table 2.5 elaborates on the question why do firms pay dividends in the periods 1903-1938, 1948-1983, and 1988-2003. We summarise the results of the logit regressions, including industry and year dummies (not tabulated). In Panel A, we report per variable the regression coefficient and the p-value and per model the number of observations, the pseudo R-squared and the AIC-information criterion. Panel B contains the results of the Shapely variance decomposition based on the logit regressions in Panel A. Panel B shows the contribution explanatory power of each variable and the sum of the fixed effects to the overall explanatory power of the model.

In 1903-1938 we found that firm size has a positive significant relation with the decision to pay dividends (also often referred to in the literature as the propensity to pay); this result has been documented in several previous studies. As expected, we find that the decision to pay dividends in this period is determined first and foremost by profitability, i.e. we estimate a positive significant relation for free cash flow, and a significant negative effect of reported losses both at the one percent level. Also, we see a negligible effect for the reserves. In other words, until the 1940s Dutch firms pay dividends when profits allow this and refrain from dividends when losses occur. Reserves are not used to pay dividends when profits are insufficient. This result is consistent with the notion that dividends are determined by statutory arrangements. We find that for each additional percentage point of free cash flow to total assets, i.e. moving from 7% to 8%, the median firm 120 percent more likely to pay dividends. Similarly, firms that report a loss are 50 percent less likely to pay dividends compared to the median firm in our sample.

We find that net working capital decreases the likeliness that firms decide to pay a dividend (significant at the five percent level). Possible explanations are that investment in current assets requires funding and thus lower the opportunity to pay dividends, or that the relation is actually of a mechanical nature, i.e. dividends to be paid out are part of the current liabilities. In line with the notion that one needs cash to be able to pay dividends, we observe a significant positive effect of liquidity on the decision to pay dividends (significant at the one percent level). In addition, Panel B reports the results of the variance decomposition, which show that free cash flow and losses are the variables that contribute two-thirds to the explanatory power of the model in this period (24% out of the R^2 of 36%).

Table 2.5 Why do firms pay a dividend?

Panel A Logit regression on dividend payments				
Variables	(1) 1903-1938	(2) 1948-1983	(3) 1988-2003	
Firm size (log and inflation corrected)	0.033* (0.054)	0.029*** (0.008)	0.039*** (0.002)	
Free cash flow (modern)	1.254*** (0.000)	0.390*** (0.000)	0.177 (0.168)	
Losses (reported)	-0.523*** (0.000)	-0.438*** (0.000)	-0.230*** (0.000)	
Reserves (scaled by total assets)	0.231 (0.105)	0.609*** (0.000)	0.387*** (0.000)	
Leverage	-0.011 (0.897)	0.044 (0.420)	-0.270* (0.057)	
Net working capital	-0.162** (0.025)	-0.113* (0.072)	-0.212 (0.125)	
Liquidity	0.329*** (0.001)	0.085 (0.180)	0.177* (0.081)	
Tangibility	-0.037 (0.434)	0.015 (0.773)	-0.002 (0.987)	
Conservatism (dummy)	-0.026 (0.327)	-0.003 (0.881)		
Board size	0.048 (0.396)	0.021 (0.603)	-0.019 (0.771)	
# of interlocks with firms	-0.019 (0.242)	-0.019 (0.124)	0.011 (0.551)	
# of interlocks with banks	0.003 (0.922)	0.001 (0.969)	-0.008 (0.820)	
Family firm (weak)	0.008 (0.780)	0.023 (0.256)	0.200*** (0.000)	
Preferred shares	-0.056 (0.354)	0.015 (0.421)	-0.028 (0.274)	
Year	Yes	Yes	Yes	
Industry	Yes	Yes	Yes	
Observations	1,458	1,711	468	
Pseudo R-squared	36%	38%	55%	
AIC-criterion	1359.836	1171.218	259.084	
Panel B Logit variance decomposition on dividend payments				
Variables	(1) 1903-1938	(2) 1948-1983	(5) 1988-2003	
Firm size (log and inflation corrected)	0.53%	0.75%	3.71%	
Free cash flow (modern)	10.78%	5.50%	7.13%	
Losses (reported)	12.94%	16.10%	17.23%	
Reserves (scaled by total assets)	2.07%	7.00%	13.30%	
Leverage	0.32%	0.31%	1.83%	
Net working capital	0.37%	0.17%	0.57%	
Liquidity	1.32%	0.22%	0.26%	
Tangibility	0.21%	0.03%	0.24%	
Conservatism (dummy)	0.28%	0.08%	0.00%	
Board size	0.47%	0.48%	0.88%	
# of interlocks with firms	0.06%	0.11%	1.06%	
# of interlocks with banks	0.04%	0.15%	0.36%	
Family firm (weak)	0.02%	0.54%	1.18%	
Preferred shares	0.11%	0.07%	0.25%	
Fixed effects	5.98%	5.99%	6.69%	

Continues ...

Table 2.5 Why do firms pay a dividend? (continued)

This table presents the results of the logit regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variable is dividend payments. In Panel A, we report per variable the regression coefficient and the *p*-value and per model the number of observations, the pseudo R-squared and the AIC-information criterion. Panel B contains the results of the Shapely variance decomposition based on the logit regressions in Panel A, i.e. it shows the contribution of each variable and the sum of the fixed effects to the overall explanatory power of the model. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying a logit regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

For the period 1948-1983, we again find a positive relation for firm size, now at the one percent level. We see similar results for the two profitability variables in this period, i.e. both in sign and significance levels. However, we find a considerable lower value for the coefficient of free cash flow, the added value of this variable is considerably lower according to the variance-decomposition. In this period reserves increase the likeliness to pay a dividend (significant at the one percent level). This can be explained by the aim for smoothing of dividend policy, which perceives reserves of previously retained earnings as an additional source for paying dividends. Dividend policy was in this period even referred to as reservation policy (*reserveringspolitik*). We find that for each additional percentage point of reserves relative to the firm's assets, the median firm is about 60 percent more likely to pay a dividend. This means that a firm with 16% of its assets in reserves will be 60 percent more likely to pay a dividend than a firm with 15% (median) of its assets in reserves. We also see a significant negative relation between net working capital and the fraction of dividend paying firms at the ten percent level. Panel B shows that free cash flow, losses and reserves are the variables that contribute most to the explanatory power of the model in this period. We also see that there is a shift in contribution from free cash flow to reserves.

In 1988-2003, as for the previous periods, we found that firm size increases the likeliness to pay dividends (significant at the one percent level). Profitability is still an important aspect of the decision to pay dividends, however now only losses have a significant effect. Losses have a significant negative effect at the one percent level. It is a striking result that firm profitability no longer yields a significant effect. As in the previous period, reserves have a positive relation with the decision to pay dividends (significant at the one percent level). We report a significant negative relation between leverage and the decision to pay dividends. In line with the modern finance theory, we interpret this finding such that leverage functions as a corporate governance mechanism. In particular, there is a substituting effect between leverage and dividends. Paying dividends reduces the cash over which management has discretion and thus the agency costs. Likewise increased leverage reduces cash (due to increased interest payments and face value), which would be at the discretion of management. This is referred to as the substituting effect and should lead to a negative sign. The significant positive sign for liquidity (ten percent level) in this period can be explained by the free cash flow theory, where liquidity represents actual cash, i.e. cash which is not yet used in a project with a positive net present value and which should be returned to firms the shareholders. We find that the family firm (weak) has a positive effect on the likeliness to pay dividends (significant at the one percent level). So far this variable was not significant. In fact the relative number of family firms is lower than in the two previous periods, furthermore family members of the founder are less likely to be on the board in this period. We, therefore, perceive this dummy as a proxy for ownership by the founding family, who is likely to rely on dividends as a form of income. We, therefore, assume that this proxy functions as a corporate governance mechanism. Panel B shows

that firm size, free cash flow, losses and reserves have increased their contribution to the explanatory power of the model in this period.

Table 2.6 elaborates on the question how much dividends firms pay in the three periods. We report the results of the regressions including industry and year dummies. In Panel A, we report per variable the regression coefficient and the p-value and per model the number of observations, the R-squared, the adjusted R-squared and the AIC-information criterion. Panel B contains the results of the Shapely variance decomposition based on the OLS regressions in Panel A. Panel B shows the contribution explanatory power of each variable and the sum of the fixed effects to the overall explanatory power of the model.

In 1903-1938, we found that the dividend payout increases with firm size, significant at the five percent level, earlier firm size also significantly increased the decision to pay dividends in all periods. As expected, we find that the decision to pay dividends in this period is determined first and foremost by profitability. Obviously, we observe a significantly negative relationship between free cash flow and payout ratio (significant at the five percent level), because the ratio scales by free cash flow and dividends do not increase proportionally to free cash flow. We find that leverage decreases the payout ratio (significant at the one percent level). The commitments to pay an increased interest and face value are assumed to make managers more careful about simultaneously increasing the payout. Similarly to our findings for the decision to pay dividends, we also find that net working capital decreases the payout ratio (significant at the five percent level). Possible explanations are that investment in current assets requires funding and thus lower the opportunity to pay dividends, or that the relation is actually of a mechanical nature, i.e. dividends to be paid out are part of the current liabilities. We find that liquidity significantly increases the payout ratio (significant at the five percent level). Tangibility has a significant negative relation with the payout ratio (significant at the five percent level). With increasing tangibility a firm is committing more of its capital to financing fixed assets, which is an important consideration especially in periods with considerable investments. The variance-decomposition in Panel B shows that free cash flow has the largest contribution to the explanatory power of the model for payout ratio, followed by tangibility.

Table 2.6 How much dividend do firms pay?

Panel A OLS-regression on payout ratio			
Variables	(1) 1903-1938	(2) 1948-1983	(3) 1988-2003
Firm size (log and inflation corrected)	0.030** (0.042)	-0.014** (0.017)	-0.005 (0.548)
Free cash flow (modern)	-1.180*** (0.000)	-1.063*** (0.000)	-0.022 (0.718)
Reserves (scaled by total assets)	-0.175 (0.144)	-0.296*** (0.000)	0.122** (0.023)
Leverage	-0.204*** (0.003)	-0.263*** (0.000)	-0.113 (0.234)
Net working capital	-0.374*** (0.000)	-0.317*** (0.000)	-0.058 (0.513)
Liquidity	0.344*** (0.000)	0.082** (0.045)	0.143** (0.027)
Tangibility	-0.230*** (0.000)	-0.290*** (0.000)	-0.182** (0.014)
Conservatism (dummy)	0.003 (0.890)	0.021* (0.050)	
Board size	-0.034 (0.422)	0.047** (0.025)	0.030 (0.416)
# of interlocks with firms	-0.016 (0.263)	-0.019*** (0.006)	0.003 (0.793)
# of interlocks with banks	0.008 (0.750)	0.002 (0.878)	-0.003 (0.872)
Family firm (weak)	-0.019 (0.386)	-0.008 (0.410)	-0.000 (0.997)
Preferred shares	0.009 (0.833)	0.000 (0.978)	0.007 (0.608)
Years	Yes	Yes	Yes
Industry	Yes	Yes	Yes
Observations	737	1,336	368
R-squared	32%	50%	27%
Adjusted R-squared	29%	50%	22%
AIC-criterion	-128.84	-1251.37	-537.81
Panel B OLS variance decomposition on payout ratio			
	(1) 1903-1938	(2) 1948-1983	(5) 1988-2003
Firm size (log and inflation corrected)	0.46%	4.01%	0.10%
Free cash flow (modern)	15.39%	27.41%	0.16%
Reserves (scaled by total assets)	0.09%	2.09%	2.25%
Leverage	0.71%	3.72%	1.16%
Net working capital	1.78%	1.92%	1.72%
Liquidity	1.00%	0.37%	4.06%
Tangibility	5.26%	4.36%	8.29%
Conservatism (dummy)	0.15%	0.38%	0.00%
Board size	0.06%	0.54%	0.08%
# of interlocks with firms	0.06%	0.38%	0.17%
# of interlocks with banks	0.03%	0.27%	0.14%
Family firm (weak)	0.21%	0.10%	0.01%
Preferred shares	0.01%	0.47%	0.07%
Fixed effects	6.69%	4.39%	8.37%

Continues ...

Table 2.6 How much dividend do firms pay? (continued)

This table presents the results of the OLS regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variable is payout ratio. Where both dividends paid profits should be larger than zero. In Panel A, we report per variable the regression coefficient and the p -value and per model the number of observations, the R-squared, the adjusted R-squared and the AIC-information criterion. Panel B contains the results of the Shapely variance decomposition based on the OLS regressions in Panel A, i.e. it shows the contribution of each variable and the sum of the fixed effects to the overall explanatory power of the model. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying an OLS regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

In 1948-1983, we found that the dividend payout decreases with firm size, significant at the five percent level, especially in the after war period in which firms made many investments to rebuild their firm and their contribution by investing in the economy. We also observe a significantly negative relationship between free cash flow and payout ratio (significant at the five percent level) in this period. An increase in reserves leads to a lower payout ratio: we assume an inverse causality that dividends decrease reserves. We find that leverage decreases the payout ratio (significant at the one percent level). The commitments to pay an increased interest and face value are assumed to have made managers more careful about simultaneously increasing the payout. It seems not surprising in a period in which it was very important to smooth dividends. Again, we find that net working capital decreases the payout ratio (significant at the one percent level). We find that liquidity significantly increases payout and tangibility significantly decreases the payout ratio (significant at the five percent level). We find that conservatism has a positive effect on the payout ratio (significant at the ten percent level). Panel B shows that free cash flow again has the largest contribution to the explanatory power of the model for payout ratio. Other variables that contribute to the overall explanatory power are tangibility, firm size and leverage. Liquidity was not very important in this period.

In 1988-2003, we found that firm size, leverage and net working capital are no longer significant in this period. We also find that profitability is no longer relevant for explaining payout ratio. However, we find that reserves significantly increase payout ratio (significant at the five percent level); apparently firms use their reserves to boost dividends. We find that liquidity significantly increases the payout ratio (significant at the five percent level). In this period, this finding can be explained by the free cash flow theory, where liquidity represents actual cash, i.e. cash which is not yet used in a project with a positive net present value and which should be returned to firms the shareholders. Tangibility has a significant negative relation with the payout ratio (significant at the five percent level). On the one hand increasing tangibility leads to an increased long-term commitment of capital, on the other hand, it reduces information asymmetry about what capital is used for and it, therefore, requires less signalling. Especially, given that the financial reporting improved since the enactment of the law on external financial reporting (*Wet op de Jaarrekening van Ondernemingen*) in 1971. This may also explain the increased explanatory power in the Shapley-variance-decomposition. Conservatism is no longer included in the model due to the law on reporting and because of the (increased) consensus amongst managers that it was no longer appropriate. Panel B reports that tangibility has become the most important variable in this period based on its contribution to the explanatory power of the model. Free cash flow lost much of its importance in this period. In fact, one could consider that dividends are decoupled from profitability. Other variables that contribute most to the overall explanatory power are liquidity, reserves and net working capital (despite being statistically insignificant).

2.4.3 *Why do firms start and quit dividend payments?*

In the previous analyses, we have treated firm-year observations as independent. In the dividend practices, typically changes in dividend policy are considered to be important. Therefore, in this subsection, we also investigate the determinants of changes in the dividend policy, i.e. we focus on firms that start to pay dividends and those that quit paying dividends. Table 2.7 presents bivariate statistics, and the multivariate analysis is presented in Table 2.8. The results in Table 2.8 elaborate on the questions why firms start or quit paying dividends in the three periods 1903-1938, 1948-1983, and 1988-2003 based on logit regressions.

When we look at relation between the determinants and the decision to start paying dividends or to quit paying dividends in Table 2.8 and if we compare these to the determinants that explain the relation with the decision to pay in Table 2.5), then we observe a strong resemblance of the results for changes in dividend policy that reinforces our earlier conclusions matching with our ideas of a logic for in specific periods. Furthermore, determinants that increase the likeliness to start paying, or the determinants that decrease the likeliness to quit, are likely to have a positive relation with the decision to pay dividends, and oppositely. In our results, we find determinants that have significant relation with likeliness to start and quit, of which all have a sign that also contributes to a higher likeliness to pay dividends, e.g. firm size, free cash flow, reserves and family firms for more than one period. Of the remaining determinants that also have a significant relation with likeliness to pay, we only observe determinants that have a significant relation with likeliness to quit and with a sign that could be contributing to the likeliness to pay dividends, e.g. losses (reported) leverage, net working capital and liquidity. This is not surprising because what increases the likeliness to pay dividends is also likely to increase the likeliness to start paying and to decrease the likeliness to quit paying.

Table 2.7 Differences between firms that start or quit paying a dividend and those that do not change their dividend policy

Variables	1903-1938				1948-1983				1988-2003			
	Starter (N=145)		Non-starter (N=297)		Starter (N=135)		Non-starter (N=132)		Starter (N=38)		Non-starter (N=33)	
	mean	t-value	mean	t-value	mean	t-value	mean	t-value	mean	t-value	mean	t-value
Payout ratio	0.487	0.000	0.000	-21.722***	0.370	0.000	0.000	-17.529***	0.159	0.000	0.000	-13.293***
Return on Equity (modern)	0.088	0.009	-10.725***		0.093	0.022	-6.243***		0.153	0.022	-0.095	-5.881***
Return on Equity (reported)	0.088	-0.035	-14.703***		0.085	-0.005	-8.49***		0.153	-0.095	-0.095	-5.881***
Free cash flow (modern)	0.134	0.050	-8.793***		0.177	0.122	-3.43***		0.333	0.080	0.080	-5.222***
Reserves (scaled by total assets)	0.044	-0.007	-5.125***		0.136	0.022	-6.185***		0.149	-0.116	-0.116	-3.703***
Losses (reported)	0.000	0.387	13.676***		0.007	0.348	8.066***		0.026	0.545	0.545	5.651***
Leverage	0.343	0.335	-0.423		0.445	0.427	-0.655		0.556	0.583	0.583	0.822
Net working capital	0.234	0.176	-2.223**		0.250	0.221	-1.237		0.132	0.140	0.140	0.184
Liquidity	0.248	0.171	-4.411***		0.347	0.303	-2.086**		0.372	0.324	0.324	-1.278
Tangibility	0.374	0.450	2.492**		0.253	0.303	1.791*		0.379	0.337	0.337	-0.964
Firm size (inflation corrected), in millions	89.924	96.141	-1.338		382.086	195.855	-5.195***		2528.120	607.379	607.379	-2.992***
Conservatism (dummy)	0.490	0.421	-1.36		0.385	0.364	-0.362		0.000	0.000	0.000	n.a.
Market-to-Book	1.036	0.652	-5.646***		1.412	0.921	-4.928***		1.585	2.428	2.428	1.116
Asset Growth (past 5 years)	0.091	-0.054	-4.172***		0.701	0.273	-4.644***		0.412	0.276	0.276	-0.673
Asset Growth (next 5 years)	0.071	0.008	-1.421		0.534	0.390	-1.403		0.558	0.136	0.136	-1.541*
Family firm (weak)	0.386	0.236	-3.17***		0.252	0.189	-1.23		0.026	0.030	0.030	0.1
Board size	6.979	6.475	-2.307**		7.378	6.061	-4.037***		7.658	6.091	6.091	-2.118**
# of interlocks with banks	1.152	1.081	-0.564		1.193	0.674	-3.111***		1.132	0.424	0.424	-2.09**
# of interlocks with firms	8.014	7.936	-0.735		8.570	5.523	-3.434***		6.395	2.939	2.939	-3.336***
Preferred shares	0.048	0.061	n.a.		0.289	0.318	0.519		0.368	0.455	0.455	0.729

Continues ...

Table 2.7 Differences between firms that start or quit paying a dividend and those that do not change their dividend policy (continued)

Variables	1903-1938			1948-1983			1988-2003		
	Quitter (N=187)	Non-quitter (N=356)	Difference in means t-value	Quitter (N=147)	Non-quitter (N=904)	Difference in means t-value	Quitter (N=30)	Non-quitters (N=252)	Difference in means t-value
	mean	mean		mean	mean		mean	mean	
Payout ratio	0.000	0.611	44.385***	0.000	0.307	45.405***	0.000	0.239	25.714***
Return on Equity (modern)	-0.021	0.105	16.007***	-0.019	0.107	12.937***	-0.119	0.164	6.155***
Return on Equity (reported)	-0.042	0.113	15.353***	-0.028	0.102	14.162***	-0.119	0.164	6.155***
Free cash flow (modern)	0.020	0.138	13.198***	0.098	0.206	10.001***	0.115	0.330	3.621***
Reserves (scaled by total assets)	0.001	0.068	5.892***	0.130	0.202	6.271***	0.063	0.223	4.184***
Losses (reported)	0.433	0.008	-11.587***	0.408	0.003	-9.942***	0.633	0.036	-6.622***
Leverage	0.325	0.355	1.598*	0.514	0.457	-2.999***	0.645	0.528	-4.403***
Net working capital	0.211	0.162	-2.084**	0.201	0.250	3.208***	0.116	0.155	1.346
Liquidity	0.202	0.238	2.188**	0.335	0.357	1.458	0.324	0.364	1.241
Tangibility	0.406	0.352	-1.887*	0.283	0.287	0.24	0.340	0.344	0.131
Firm size (inflation corrected), in millions	107.977	166.130	4.42***	615.761	427.185	0.578	2002.325	3048.100	2.86**
Conservatism (dummy)	0.422	0.326	-2.199**	0.293	0.343	1.235	0.000	0.000	n.a.
Market-to-Book	0.675	1.588	12.999***	0.873	1.827	11.437***	1.634	2.551	1.561**
Asset Growth (past 5 years)	-0.034	0.207	6.724***	0.440	0.707	4.216***	0.406	0.631	1.587
Asset Growth (next 5 years)	-0.013	0.125	4.305***	0.321	0.665	4.507***	0.449	0.623	0.861
Family firm (weak)	0.364	0.253	-2.63***	0.218	0.352	3.559***	0.067	0.099	0.571
Board size	6.797	7.514	3.464***	7.320	7.808	2.096**	7.733	8.599	1.771**
# of interlocks with banks	1.176	1.250	1.059	1.218	1.054	-1.38	0.900	1.151	1.245
# of interlocks with firms	8.561	9.399	0.603	7.007	8.154	1.813*	4.667	5.849	1.71*
Preferred shares	0.048	0.039	-0.483	0.340	0.348	0.196	0.467	0.456	-0.107

This table contains descriptive statistics for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. Panel A reports for the periods 1903-1938, 1948-1983 and 1988-2003, per variable the mean and median for starters, i.e. firms that start to pay dividends in the current period but did not do so in the previous period, and for non-starters, i.e. those firms that continue not to pay dividends. Panel B reports for the periods 1903-1938, 1948-1983 and 1988-2003, per variable per variable the mean and median for quitters, i.e. firms that quit paying dividends in the current period but they did do so in the previous period, and non-quitters, i.e. firms that continue to pay dividends. Definitions of the variables are provided in Appendix I.

Table 2.8 Why do firms start paying a dividend or quit paying a dividend?

Variables	Why do firms start paying dividends?						Why do firms quit paying dividends?					
	(1) 1903-1938	(2) 1948-1983	(3) 1988-2003	(4) 1903-1938	(5) 1948-1983	(6) 1988-2003	(1) 1903-1938	(2) 1948-1983	(3) 1988-2003	(4) 1903-1938	(5) 1948-1983	(6) 1988-2003
Firm size (log and inflation corrected)	-0.011 (0.662)	0.050* (0.069)	-0.019 (0.754)	-0.040** (0.017)	-0.002 (0.796)	-0.043*** (0.002)	1.325*** (0.000)	0.714*** (0.000)	1.039*** (0.000)	-1.045*** (0.000)	-0.586*** (0.000)	-0.022 (0.879)
Free cash flow (modern)												
Losses (reported)												
Reserves (scaled by total assets)	0.561*** (0.004)	1.160*** (0.000)	0.984*** (0.000)	-0.162 (0.333)	-0.291*** (0.001)	-0.071 (0.202)						
Leverage	0.050 (0.705)	0.134 (0.367)	0.104 (0.739)	0.189* (0.065)	0.086 (0.147)	0.535*** (0.002)						
Net working capital	-0.022 (0.874)	-0.264 (0.260)	-0.038 (0.886)	0.254*** (0.003)	0.023 (0.719)	0.257 (0.176)						
Liquidity	0.177 (0.330)	0.353 (0.196)	0.176 (0.473)	-0.368*** (0.004)	-0.036 (0.529)	-0.173 (0.108)						
Tangibility	-0.021 (0.802)	-0.126 (0.417)	0.255 (0.278)	0.024 (0.687)	-0.021 (0.703)	0.046 (0.673)						
Conservatism (dummy)	0.021 (0.635)	0.037 (0.505)	0.037 (0.473)	0.022 (0.471)	0.014 (0.473)							
Board size	0.083 (0.270)	0.101 (0.422)	0.146 (0.606)	-0.060 (0.370)	-0.043 (0.150)	0.064 (0.314)						
# of interlocks with firms	0.006 (0.851)	0.006 (0.872)	0.045 (0.326)	0.040* (0.070)	0.019 (0.109)	-0.011 (0.468)						
# of interlocks with banks	-0.024 (0.652)	0.009 (0.898)	0.033 (0.716)	0.020 (0.584)	-0.007 (0.722)	0.020 (0.447)						
Family firm (weak)	0.109*** (0.021)	-0.013 (0.862)	-0.007 (0.942)	0.004 (0.919)	-0.045** (0.042)	-0.109*** (0.023)						
Preferred shares	-0.125 (0.126)	0.075 (0.267)	-0.051 (0.481)	0.081 (0.246)	-0.019 (0.298)	0.003 (0.907)						
Years	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	442	267	71	543	1,051	282						
Pseudo R-squared	21%	29%	71%	46%	42%	60%						
AIC-criterion	495.89	316.00	68.94	429.99	549.45	120.10						

Continues ...

Table 2.8 Why do firms start paying a dividend or quit paying a dividend? (continued)

This table presents the results of the logit regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variables are starters and quitters. Starters are firms that pay dividends in the current period but did not in the previous, whereas quitters are firms that paid dividends in the previous period but do not in the current period. We report per variable the regression coefficient and the p -value and per model the number of observations, the pseudo R-squared and the AIC-information criterion. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying a logit regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, **, or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

2.4.4 Market price consequences of dividends

So far, we have explained firm dividend policies using a set of variables based on the three periods identified in the twentieth century Dutch setting. These analyses approach the dividend policies from the perspective of corporate decision-makers. Of course, shareholders influence these decisions directly when managers follow the directions of larger shareholders, and indirectly when managers take into account shareholder preferences (Baker and Wurgler, 2004). In this sub-section, we measure the reactions of shareholders to dividend policies via the market valuations of firms. We measure the market value of equity relative to its book value. Even though, shareholder value creation as a key goal of firms became dominant in the 1980s. For this reason, market valuation is a meaningful measure in the entire twentieth century. Table 2.9 investigates the effect of dividend policy on firm value.

In Panel A, we present the contemporaneous correlation between dividend policies and market valuation. We perform OLS regressions to explain the effect of the decision to pay dividends and payout ratio on market-to-book for three periods, again in all regressions both year and industry fixed effects are applied. The models (1)-(3) investigate the effect of dividend payments and the models (4)-(6) report on the effect of payout ratio for the paying firms. In the period 1903-1938, firm dividends depend on the statutory arrangements and firm profits. It should be noted that this period the information provided by financial reporting was very limited. We find in models (1) and (4) that both, the decision to pay dividends and payout ratio, have significant positive effects on market-to-book valuations, both at the one percent level. The economic effects are large, as model (1) shows that paying a dividend increases the value by 40.5% of book equity. Clearly, paying dividends provides information about firm performance and also the fraction of distributed earnings adds to firm value.

The results for 1948-1983 are in line with the idea that firms smooth dividends, have limited access to capital but are investing heavily after World War II. As of 1971 the financial reporting information improved considerably due to the enactment of the law on external financial reporting (*Wet op de Jaarrekening van Ondernemingen*). We still find that dividend payments have a significant positive effect on market-to-book, but now the payout ratio has an insignificant negative effect. Whether dividends are paid provides information about firm performance. The smoothing of the dividends implies that the dividends should not increase because of increased profitability; additionally, the internally generated capital was needed to finance investments. Due to the smoothing, the actual dividend becomes less informative about firm value.

Table 2.9 Market price consequences of dividends

	Panel A Understanding the relation between dividend payments, payout ratios and market-to-book					
	Full sample			Dividend payers		
Variables	(1)	(2)	(3)	(4)	(5)	(6)
	1903-1938	1948-1983	1988-2003	1903-1938	1948-1983	1988-2003
Dividend payments	0.405*** (0.000)	0.452*** (0.000)	-0.344 (0.520)	0.587*** (0.000)	-0.169 (0.478)	2.296 (0.118)
Payout ratio						
Firm size (log and inflation corrected)	-0.205*** (0.000)	-0.279*** (0.003)	-0.298 (0.593)	-0.629*** (0.000)	-0.185 (0.717)	-1.267* (0.060)
Losses (reported)	0.210*** (0.000)	0.161*** (0.000)	0.093 (0.436)	0.263*** (0.000)	0.208*** (0.000)	0.118 (0.391)
Leverage	-0.356*** (0.008)	-0.169 (0.379)	5.715*** (0.000)	-0.312 (0.144)	-0.582*** (0.019)	6.950*** (0.000)
Liquidity	0.430** (0.010)	0.512*** (0.007)	2.381 (0.151)	0.359 (0.137)	0.389* (0.077)	0.514 (0.782)
Tangibility	-0.353*** (0.001)	0.069 (0.715)	-1.145 (0.311)	-0.381*** (0.003)	0.135 (0.596)	-1.159 (0.368)
Conservatism (dummy)	-0.038 (0.452)	0.027 (0.713)		-0.105 (0.167)	0.139 (0.109)	
Years	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,129	1,382	450	601	1,092	356
R-squared	44%	44%	25%	36%	45%	24%
Adjusted R-squared	43%	44%	23%	34%	44%	20%

	Panel B Changes in Market-to-Book for firms that change their dividend policies		
	(1)	(2)	(3)
	1903-1938	1948-1983	1988-2003
Starters	13.09% 115	0.22% 101	4.81% 34
Quitters	-4.93% 146	-4.52% 104	-3.75% 28
Difference between Starters and Quitters	18.02%	4.75%	8.56%
P-value	0.000	0.000	0.054
Chi-squared	48.36***	12.26***	3.73*

This table presents the results of the OLS regressions and a long-term event study for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variables are market-to-book or changes in market-to-book. In Panel A we summarise the OLS regression results for market-to-book, i.e. we report per variable the regression coefficient and the *p*-value, and per model the number of observations, the R-squared, the adjusted R-squared. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying an OLS regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. *P*-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

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Table 2.9 Market price consequences of dividends (continued)

Panel B reports the results of a long-term event study of dividend policies changes (starter and quitter) on abnormal returns for market-to-book. We focus on the events where firms start and quit paying dividends. We specify a simple OLS model where we explain the change in market-to-book values over a five-year period by the change in the average market-to-book of all firms over the whole period and indicator variables, i.e. the interaction of the three specified periods with starters resp. quitters result in 1903-1938xstarter, 1948-1983xstarter, 1988-2003xstarter, 1903-1938xquitter, 1948-1983xquitter, and 1988-2003xquitter. The coefficients for the indicators can be interpreted as five-year abnormal returns. The relevant betas are divided by five to give yearly excess changes in market-to-book for each of the indicator variables. We express the abnormal returns in yearly returns. Definitions of the variables are provided in Appendix I. The results for the intercept are not reported. The standard errors are clustered at the firm level. Furthermore, we report the difference between the betas of starters and quitters, and per difference a p-value and Chi-squared (marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided)).

The final period 1988-2003 does not show significant results for the decision to pay dividends nor for payout ratio to explain market-to-book. We have reported in Table 2.1 and Table 2.2 that the fraction to pay a dividend is high, and the payout ratio is low. This explains the insignificance of dividend payments and payout ratio, as paying a small dividend is the norm, but it has become a symbolic action with no informational value about the firm's prospects. It is an interesting paradox to conclude that signalling theory has boosted the number of dividend-paying firms such that the signal does no longer discriminate between 'good' and 'bad' firms.⁸

Panel B contains the results of a long-term event study on changes of dividend policies, i.e. we focus on the events where firms start and quit paying dividends. For this purpose, we specify a simple OLS model where we explain the change in market-to-book values over a five-year period by the change in the average market-to-book of all firms over the whole period and indicator variables, i.e. the interaction of the three periods with starters resp. quitters.⁹ The coefficients for the indicators can be interpreted as five-year abnormal returns. The relevant betas are divided by five to give yearly excess changes in market-to-book for each of the indicator variables. We express the abnormal returns in yearly returns. The results for the intercept are not reported. The standard errors are clustered at the firm level.

In period 1903-1938 we observe that changes in dividend policy have an undeniable effect, we find an average annual abnormal return for starters of +13.1% and for quitters -4.9%. When comparing starters with quitters, we find a difference in the annual abnormal returns of 18.0% significant at the one percent level. Due to the limited financial reporting shareholders used the dividend policy change as information about the firm's performance. Starting to pay means that firms will provide information depending on whether they pay in line with their statutes and their reported profitability, or not. If a firm quits paying dividends it might imply it is no longer able to pay, in any case, investors will have less information about firm performance.

For 1948-1983, we find that starters only gain an abnormal return of +0.2%, whereas quitters are punished by a value reduction of -4.5%. These results are in line with the idea that firms smooth dividends. Stable dividends have little informational value. In this period following the Second World War, firms are investing heavily and have limited access to capital via the capital market. If financing needs exceed the availability of new capital, investors might prefer to use the internally generated funds to invest in value creating projects instead of returning cash in the form of dividends. Under a regime of stable

⁸ An interesting side-result is that leverage has a negative effect on firm value in the first two periods, but a positive effect in the final period. One can easily imagine that the agency theories (Jensen, 1986) and tax benefits (Modigliani and Miller, 1963; Miller, 1977 but popularized by Myers, 1984) of leverage are contributing to the positive effects in recent years, while conservative debt policies were the norm until the 1970s.

⁹ The indicator variables are interactions between the 3 periods (1903-1938, 1948-1983 and 1988-2003) and the dividend policy changes (starter and quitter). This leads to six indicator variables, e.g. 1903-1938*starter, 1948-1983*starter, 1988-2003*starter, and likewise for quitters.

dividends quitting to pay dividends has informational value, which is reflected in the negative abnormal return we find for quitters. Again, we compare starters with quitters, we find a difference in the annual abnormal returns of 4.8% significant at the one percent level.

Finally, for the period 1988-2003, we find an abnormal return for starters of +4.8% and an abnormal return of -3.8% for quitters. This period is related to modern dividend policy theories. Starting or quitting to pay a dividend is especially related to the signalling theory. Starting is a signal that is perceived as good news, and quitting is perceived as bad news. By starting the firm is telling to the investors, that it firm will be able to pay dividends now and in the future, and that it will be able to attract additional capital despite to scrutiny of the capital market. Quitting is no longer able to do the above. Typically, quitting leads to a more negative abnormal return than the positive abnormal return for starting to pay dividends.

Summarizing the above results, we can conclude that dividend policy has a significant effect on firm performance. The results of the different periods are in line with a dominant logic for different periods.

2.4.5 Robustness

Additionally, we run five robustness checks, where we include new variables and address relevant sub-groups.

In Appendix II, we include asset growth of past and upcoming years because this may be a determining factor of dividend policies. We find that are findings remain robust. However, the decoupling between dividends and earnings is less apparent in the decision to pay dividends or not. The decoupling remains apparent in the level of dividend payments. In Appendix III we check whether the results are not driven by conservative firms, we find that the results remain fairly consistent for both the decision to pay dividends and payout ratio. In Appendix IV, we investigate whether firms with preferred shares drive our results, as firms with preferred shares have additional voting and dividend rights attached to these shares. We find that firms with preferred shares show significant decoupling between cash-flow and dividend policies on the level of deciding whether or not to pay dividends. Moreover, they do not exhibit a liquidity or tangibility effect, which is consistent with the additional dividend rights attached to these shares (i.e. these rights usually entitled to a time-fixed payment structure, irrespective of corporate conditions). Moreover, we find that with respect to the level of dividends paid by firms with preferred shares, that liquidity is only important in the post-war boom period. We find that, contrary to the finding in the full sample, as liquidity increases the amount of dividend decreases. In Appendix V, we only include firms with a complete set of firm-year observations in a specified period. Although this reduces our number of observations, we have a balanced panel in each period, such that overrepresentation in a specific set of years cannot influence the results. The results are very similar to Tables 2.5 and 2.6. In Appendix VI,

we only include firms that have at least eight firm-year observations. These firm-year observations can be part of different specified periods. Again, the results are very similar to Tables 2.5 and 2.6. Overall, our findings are very robust to alternative subsamples.

2.5 Discussion and conclusion

We aim to understand dividend policies of Dutch firms over the course of the twentieth century by answering four related questions: (a) Why do firms pay a dividend? (b) How much dividend do firms pay? (c) Why do firms start or quit paying a dividend? (d) What are the value effects of dividend policies? We find that the determinants of the answers to these questions are by no means stable over time.

This study illustrates that there have been significant changes in the dominant logic of dividend policies across the twentieth century. We identify three dividend policy regimes. In the pre-war years the fraction of dividend-paying firms is volatile and the payout ratio high. In the post-war period, we observe stable dividend policies, whereby the level of dividend payments has decreased somewhat. From the early 1980s onwards, paying a dividend seems to be the norm, while the actual profits distributed become much smaller.

This study has a number of limitations. First, comparing analyses based on annual reporting data over a long period is challenging and subject to noise. It is comforting that our key variable – dividends – is objectively measurable as the guilder reward for investors. A second limitation is that we cannot fully distinguish cause and effect in the relations between dividend policies and the dominant logic. We observe the logic simultaneously with the practices. In the first period, the dividend policies are based on long-standing practices that go back to the 18th century (Koert, 1934). Thus, our analyses of the twentieth century will be a derivative of these practices. Then, the economic crises that induced the innovations in dividend policies based on smoothing to create stability in the dividend seem to be a simultaneous development in practice and academia, for which we cannot disentangle cause and effect. However, in the most recent revisions of best dividend practices the academic innovations in financial economics seem to be leading the way for Dutch firms' policies (see MacKenzie, 2006, for a parallel with the effects of option pricing theory on the development of options markets).

Appendix I Variable description and definition

Variable	Unit	Definition
Dividend payments	Dummy	Dividend payments score 1 if the firm pays a dividend (free cash flow), and otherwise 0.
Payout ratio	Ratio	Dividends paid to free cash flow
Return on Equity (modern)	Ratio	Net profit (modern) to total equity
Return on Equity (reported)	Ratio	Net profit (as reported) to total equity
Free cash flow (modern)	Ratio	Free cash flow (modern) to total equity
Reserves (scaled by total assets)	Ratio	Equity reserves and reserves from retained earnings to total assets
Losses (reported)	Dummy	Losses (reported) scores 1 if the firm reports a loss, and otherwise 0.
Leverage	Ratio	Total debt to total assets
Net working capital	Ratio	Current assets minus current liabilities tot total assets
Liquidity	Ratio	Current assets minus inventories to total assets
Tangibility	Ratio	Fixed assets to total assets
Firm size (inflation corrected), in millions	Guilders	Total assets (in millions) corrected for inflation (base year 2003)
Firm size (log and inflation corrected)	Log	Log of total assets (in thousands) corrected for inflation (base year 2003)
Conservatism (dummy)	Dummy	Conservatism scores 1 if the firm depreciates fixed assets to values below 10 guilders, and otherwise 0.
Market-to-Book	Ratio	Market value of equity to book value of equity
Asset Growth (past 5 years)	Ratio	5-year compounded growth rate
Asset Growth (next 5 years)	Ratio	Future 5-year compounded growth rate
Family firm (weak)	Dummy	Family firm (weak) scores 1 if the firm has either two or more board members from the same family or a family name in the firm name, and otherwise 0.
Board size	Continuous	Number of board members
# of interlocks with banks	Continuous	Number of interlocks with a bank
# of interlocks with firms	Continuous	Number of interlocks with another firm
Preferred shares	Dummy	Preferred shares score 1 if the firm has preferred shares outstanding, and otherwise 0.

This table includes the variables included in this study, their units and definitions. The first column includes for each variable either the name or an abbreviated version. The second column includes the unit of the variable. The third column includes the definitions of the variables. I will highlight two groups. The first group of variables are dividend policy measures, e.g. dividend payments (this is also the basis for starters and quitters) and payout ratio. The second group consists of variables related to profitability, e.g. return on equity based on a modern approach or based on reported values, free cash flow based on a modern approach, reserves and losses as reported. The remaining are typically explanatory variables, except market-to-book.

Appendix II Robustness check: Including asset growth

Variables	Why do firms pay a dividend?					How much dividend do firms pay?				
	(1) 1903-1938	(2) 1948-1983	(3) 1988-2003	(4) 1903-1938	(5) 1948-1983	(6) 1988-2003				
Asset Growth (past 5 years)	-0.008 (0.889)	0.036* (0.080)	0.062*** (0.000)	-0.003 (0.943)	-0.014** (0.047)	0.012 (0.405)				
Asset Growth (next 5 years)	0.043 (0.328)	0.020 (0.231)	0.026 (0.271)	0.022 (0.463)	0.009 (0.204)	-0.003 (0.798)				
Firm size (log and inflation corrected)	0.038* (0.075)	0.017 (0.186)	-0.046 (0.184)	0.036* (0.072)	0.000 (0.984)	0.014 (0.362)				
Free cash flow (modern)	0.889*** (0.000)	0.505*** (0.000)	0.530*** (0.010)	-1.207*** (0.000)	-1.091*** (0.000)	-0.147** (0.033)				
Losses (reported)	-0.529*** (0.000)	-0.376*** (0.000)	-0.229*** (0.001)							
Reserves (scaled by total assets)	0.012 (0.948)	0.536*** (0.000)	0.661*** (0.000)	-0.270* (0.086)	-0.351*** (0.000)	0.104 (0.175)				
Leverage	-0.008 (0.953)	-0.013 (0.876)	-0.155 (0.327)	-0.278*** (0.003)	-0.265*** (0.001)	-0.008 (0.948)				
Net working capital	-0.201** (0.038)	-0.133* (0.083)	-0.061 (0.616)	-0.412*** (0.000)	-0.319*** (0.000)	-0.087 (0.431)				
Liquidity	0.458*** (0.001)	0.094 (0.247)	0.276** (0.014)	0.331*** (0.009)	0.092 (0.100)	0.074 (0.335)				
Tangibility	-0.045 (0.464)	-0.026 (0.712)	-0.011 (0.932)	-0.228*** (0.000)	-0.268*** (0.000)	-0.228** (0.032)				
Conservatism (dummy)	-0.034 (0.298)	-0.000 (0.988)		-0.020 (0.463)	0.019 (0.137)					
Board size (log)	0.103 (0.207)	0.024 (0.600)	0.287* (0.054)	-0.063 (0.274)	0.029 (0.203)	0.020 (0.691)				
# of interlocks with firms	-0.020 (0.396)	-0.012 (0.407)	-0.007 (0.607)	0.004 (0.839)	-0.024*** (0.004)	0.000 (0.986)				
# of interlocks with banks	-0.051 (0.205)	0.009 (0.706)	0.091* (0.069)	-0.006 (0.849)	-0.000 (0.998)	-0.034 (0.237)				
Family firm (weak)	-0.004 (0.901)	0.042 (0.100)	0.240*** (0.000)	-0.022 (0.461)	-0.004 (0.762)	-0.015 (0.494)				
Preferred shares	-0.086 (0.214)	0.006 (0.796)	0.070* (0.070)	0.043 (0.415)	0.008 (0.483)	0.034 (0.132)				
Years	Yes	Yes	Yes	Yes	Yes	Yes				
Industry	Yes	Yes	Yes	Yes	Yes	Yes				
Observations	769	980	200	408	798	171				
Pseudo R-squared/R-squared	37%	38%	84%	33%	53%	39%				
Adjusted R-squared				28%	52%	30%				
AIC-criterion	733.04	-35.42	638.69	-875.21	71.90	-294.01				

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Appendix II Robustness check: Including asset growth (continued)

This table presents the results of the logit and the OLS regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variables are dividend payments (model 1-3) and payout ratio (model 4-6). In model 4-6 both dividends paid profits should be larger than zero. In the models, we add Asset Growth (past 5 years) and Asset Growth (next 5 years) as a robustness check. We report per variable the regression coefficient and the p-value and per model the number of observations, the pseudo R-squared and the AIC-information criterion. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying a logit and an OLS regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

Appendix III Robustness check: Excluding conservative firms

Variables	Why do firms pay a dividend? (Logit)			How much dividend do firms pay?		
	(1)	(2)	(3)	(4)	(5)	(6)
	1903-1938	1948-1983	1988-2003	1903-1938	1948-1983	1988-2003
Firm size (log and inflation corrected)	0.031* (0.060)	0.029*** (0.008)	0.036*** (0.003)	0.040*** (0.007)	-0.005 (0.473)	0.003 (0.753)
Free cash flow (modern)	1.288*** (0.000)	0.303*** (0.004)	0.174 (0.171)	-1.120*** (0.000)	-0.943*** (0.000)	-0.021 (0.732)
Losses (reported)	-0.459*** (0.000)	-0.454*** (0.000)	-0.228*** (0.000)			
Reserves (scaled by total assets)	0.474*** (0.005)	0.545*** (0.000)	0.381*** (0.000)	-0.188 (0.183)	-0.270*** (0.003)	0.126** (0.019)
Leverage	0.068 (0.494)	0.004 (0.955)	-0.266* (0.058)	-0.196** (0.020)	-0.241*** (0.007)	-0.114 (0.237)
Net working capital	-0.165* (0.052)	-0.119 (0.117)	-0.206 (0.136)	-0.416*** (0.000)	-0.249*** (0.000)	-0.047 (0.592)
Liquidity	0.271*** (0.043)	0.134* (0.084)	0.174* (0.088)	0.373*** (0.001)	0.079* (0.078)	0.153** (0.020)
Tangibility	-0.036 (0.522)	0.002 (0.973)	0.002 (0.985)	-0.210*** (0.000)	-0.281*** (0.000)	-0.174** (0.020)
Board size (log)	0.000 (0.997)	-0.003 (0.921)	-0.012 (0.828)	-0.023 (0.578)	0.027 (0.230)	0.005 (0.877)
# of interlocks with firms	-0.008 (0.703)	-0.015 (0.277)	0.011 (0.559)	-0.031* (0.094)	-0.013 (0.166)	0.001 (0.921)
# of interlocks with banks	-0.020 (0.591)	0.015 (0.460)	-0.007 (0.845)	0.009 (0.770)	-0.015 (0.231)	-0.007 (0.697)
Family firm (weak)	0.010 (0.785)	0.005 (0.848)	0.200*** (0.000)	-0.017 (0.520)	-0.017 (0.166)	0.001 (0.962)
Preferred shares	-0.077 (0.287)	0.031 (0.162)	-0.027 (0.289)	0.007 (0.885)	-0.009 (0.477)	0.006 (0.638)
Years	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Observations	945	1,120	468	489	873	368
Pseudo R-squared/R-squared	37%	44%	55%	33%	46%	27%
Adjusted R-squared				30%	44%	22%
AIC-criterion	877.095	732.478	258.159	-100.514	-891.223	-543.154

Continues ...

Appendix III Robustness check: Excluding conservative firms (continued)

This table presents the results of the logit and the OLS regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variables are dividend payments (model 1-3) and payout ratio (model 4-6). In model 4-6 both dividends paid profits should be larger than zero. In these models, we exclude conservatism (dummy) as a robustness check. We report per variable the regression coefficient and the p-value and per model the number of observations, the pseudo R-squared/R-squared, the adjusted R-squared and the AIC-information criterion. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying a logit and an OLS regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

Appendix IV Robustness check: Differences between firms with and without preferred shares

Variables	Preferred shares						Non-preferred shares					
	Why do firms pay a dividend?			How much dividend do firms pay?			Why do firms pay a dividend?			How much dividend do firms pay?		
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Firm size (log and inflation corrected)	1903-1938 (0.312)	1948-1983 (0.315)	1988-2003 (0.036*)	1903-1938 (0.384)	1948-1983 (0.181)	1988-2003 (0.753)	1903-1938 (0.050)	1948-1983 (0.024)	1988-2003 (0.001)	1903-1938 (0.047)	1948-1983 (0.396)	1988-2003 (0.677)
Free cash flow (modern)	2.132*** (0.003)	0.596*** (0.000)	-0.039 (0.861)	-1.325*** (0.040)	-0.793*** (0.000)	0.052 (0.573)	1.207*** (0.000)	0.329*** (0.003)	0.325*** (0.040)	-1.153*** (0.000)	-1.178*** (0.000)	-0.062 (0.400)
Losses (reported)		-0.317*** (0.000)	-0.323*** (0.000)				-0.527*** (0.000)	-0.488*** (0.000)	-0.156*** (0.000)			
Reserves (scaled by total assets)	0.660 (0.176)	0.733*** (0.000)	0.387*** (0.008)	0.494 (0.374)	-0.202** (0.017)	0.080 (0.369)	0.189 (0.200)	0.595*** (0.000)	0.361** (0.000)	-0.171 (0.176)	-0.368*** (0.000)	0.171*** (0.006)
Leverage	-0.182 (0.496)	-0.051 (0.540)	-0.224 (0.391)	-0.469* (0.085)	-0.231*** (0.000)	-0.328* (0.090)	-0.004 (0.963)	0.088 (0.207)	-0.131 (0.490)	-0.178*** (0.011)	-0.305*** (0.000)	0.053 (0.577)
Net working capital	0.017 (0.960)	-0.141 (0.199)	-0.240 (0.371)	-0.304 (0.297)	-0.259*** (0.004)	-0.225* (0.082)	-0.170*** (0.019)	-0.098 (0.207)	-0.068 (0.645)	-0.381*** (0.000)	-0.351*** (0.000)	0.109 (0.266)
Liquidity	0.453 (0.324)	-0.077 (0.466)	0.277 (0.124)	-0.090 (0.870)	-0.028 (0.630)	0.123 (0.171)	0.309*** (0.003)	0.126 (0.113)	0.023 (0.864)	0.337*** (0.000)	0.140*** (0.005)	0.148* (0.093)
Tangibility	-0.129 (0.348)	-0.142 (0.130)	0.188 (0.448)	-0.646*** (0.034)	-0.345*** (0.000)	-0.276** (0.026)	-0.044 (0.369)	0.060 (0.329)	-0.104 (0.400)	-0.224*** (0.000)	-0.274*** (0.000)	-0.121 (0.190)
Conservatism (dummy)	0.033 (0.783)	-0.022 (0.427)		-0.099 (0.244)	0.041** (0.029)		-0.030 (0.254)	0.003 (0.905)		0.006 (0.780)	0.010 (0.457)	
Board size	0.333*** (0.033)	-0.014 (0.771)	0.106 (0.295)	-0.143 (0.432)	0.052* (0.080)	0.032 (0.499)	0.027 (0.596)	0.029 (0.492)	-0.132* (0.053)	-0.032 (0.405)	0.018 (0.420)	0.002 (0.968)
# of interlocks with firms	-0.126* (0.063)	0.006 (0.754)	-0.013 (0.737)	-0.055 (0.281)	-0.020* (0.066)	-0.002 (0.870)	-0.015 (0.378)	-0.023 (0.144)	0.043** (0.020)	-0.017 (0.259)	-0.022** (0.013)	0.007 (0.622)
# of interlocks with banks	0.022 (0.886)	0.013 (0.669)	-0.040 (0.624)	-0.010 (0.893)	0.004 (0.756)	-0.024 (0.505)	-0.001 (0.963)	-0.001 (0.967)	0.019 (0.576)	0.008 (0.740)	-0.004 (0.779)	0.010 (0.624)
Family firm (weak)	0.152 (0.158)	0.032 (0.272)	0.236*** (0.000)	-0.199* (0.073)	-0.039** (0.014)	-0.008 (0.746)	0.005 (0.857)	0.022 (0.391)	0.187*** (0.017)	-0.010 (0.660)	0.009 (0.474)	0.023 (0.487)
Years	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	67	565	207	32	452	161	1,391	1,146	261	705	884	207
Pseudo R-squared/R-squared	54%	50%	49%	85%	46%	29%	36%	34%	68%	31%	53%	37%
Adjusted R-squared				66%	43%	19%				29%	52%	30%
AIC-criterion	78.30	337.28	150.38	-14.45	-492.25	-198.31	1296.72	860.16	124.98	-119.43	-770.99	-343.64

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Appendix IV Robustness check: Differences between firms with and without preferred shares (continued)

This table presents the results of the logit and the OLS regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variables are dividend payments (model 1-3) and payout ratio (model 4-6). In model 4-6 both dividends paid profits should be larger than zero. As a robustness check, we divide our sample into subsamples based on preferred shares, i.e. a subsample of firms with preferred shares and a subsample of firms without preferred shares. We report per variable the regression coefficient and the p-value and per model the number of observations, the pseudo R-squared/R-squared, the adjusted R-squared and the AIC-information criterion. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying a logit and an OLS regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

Appendix V Robustness check: Balanced cross-sections

Variables	Why do firms pay a dividend? (Logit)						How much dividend do firms pay?					
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
	1903-1938	1948-1983	1988-2003	1903-1938	1948-1983	1988-2003	1903-1938	1948-1983	1988-2003	1903-1938	1948-1983	1988-2003
Firm size (log and inflation corrected)	0.031 (0.371)	0.029 (0.139)	0.014 (0.326)	0.060** (0.016)	0.003 (0.762)	0.017 (0.133)						
Free cash flow (modern)	1.346*** (0.002)	0.597*** (0.000)	0.094 (0.703)	-1.112*** (0.000)	-0.968*** (0.000)	0.019 (0.831)						
Losses (reported)	-0.373** (0.013)		-0.176*** (0.005)									
Reserves (scaled by total assets)	0.396 (0.540)	0.920*** (0.000)	0.459*** (0.000)	-0.455 (0.244)	-0.147 (0.220)	0.289*** (0.004)						
Leverage	0.040 (0.858)	-0.018 (0.896)	-0.048 (0.791)	-0.112 (0.423)	-0.282*** (0.002)	-0.003 (0.978)						
Net working capital	-0.349** (0.041)	-0.056 (0.734)	-0.239 (0.196)	-0.387** (0.044)	-0.437*** (0.000)	-0.049 (0.580)						
Liquidity	0.187 (0.476)	0.287 (0.169)	0.197 (0.259)	0.452* (0.056)	0.174* (0.092)	-0.011 (0.900)						
Tangibility	-0.048 (0.658)	0.174* (0.084)	0.306* (0.064)	-0.099 (0.242)	-0.340*** (0.000)	-0.165** (0.020)						
Conservatism (dummy)	0.035 (0.559)	-0.039 (0.404)		-0.054 (0.198)	0.006 (0.789)							
Board size	0.067 (0.577)	-0.006 (0.935)		0.056 (0.501)	-0.001 (0.980)	-0.037 (0.449)						
# of interlocks with firms	0.064 (0.152)	-0.014 (0.595)	0.019 (0.483)	0.004 (0.889)	-0.036** (0.020)	0.011 (0.449)						
# of interlocks with banks	-0.166** (0.011)	-0.025 (0.475)	0.015 (0.704)	-0.018 (0.707)	-0.010 (0.699)	-0.053 (0.114)						
Family firm (weak)	-0.065 (0.323)	-0.005 (0.915)	0.170** (0.011)	-0.164*** (0.002)	0.013 (0.575)	-0.037** (0.050)						
Preferred shares	-0.084 (0.537)	0.014 (0.769)	-0.064 (0.172)	-0.069 (0.433)	0.018 (0.432)	0.007 (0.740)						
Years	Yes	Yes	Yes	Yes	Yes	Yes						
Industry	Yes	Yes	Yes	Yes	Yes	Yes						
Observations	276	360	171	164	290	147						
Pseudo R-squared/R-squared	44%	41%	63%	55%	57%	44%						
Adjusted R-squared				47%	53%	35%						
AIC-criterion	261.70	260.58	92.31	-42.56	-331.02	-248.73						

Continues ...

Appendix V Robustness check: Balanced cross-sections (continued)

This table presents the results of the logit and the OLS regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variables are dividend payments (model 1-3) and payout ratio (model 4-6). In model 4-6 both dividends paid profits should be larger than zero. As a robustness check, we only include firms with a complete set of firm-year observations in the specified period 1903-1938, 1948-1983, and/or 1988-2003. We report per variable the regression coefficient and the p-value and per model the number of observations, the pseudo R-squared/R-squared, the adjusted R-squared and the AIC-information criterion. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying a logit and an OLS regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

Table VI Robustness check: Minimal 8 observations per firm

Variables	Why do firms pay a dividend? (Logit)				How much dividend do firms pay?			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Firm size (log and inflation corrected)	1903-1938 0.024 (0.257)	1948-1983 0.015 (0.265)	1988-2003 0.011 (0.325)	1903-1938 0.040** (0.012)	1948-1983 -0.003 (0.651)	1988-2003 0.014 (0.265)		
Free cash flow (modern)	1.084*** (0.000)	0.393*** (0.002)	0.237 (0.444)	-1.199*** (0.000)	-0.993*** (0.000)	-0.124 (0.132)		
Losses (reported)	-0.641*** (0.000)	-0.512*** (0.000)	-0.234*** (0.009)					
Reserves (scaled by total assets)	-0.027 (0.891)	0.527*** (0.000)	0.520*** (0.000)	-0.235 (0.127)	-0.344*** (0.000)	0.124 (0.175)		
Leverage	0.030 (0.830)	0.062 (0.431)	-0.058 (0.815)	-0.127 (0.174)	-0.312*** (0.000)	-0.090 (0.407)		
Net working capital	-0.118 (0.256)	-0.040 (0.619)	-0.131 (0.462)	-0.304*** (0.003)	-0.356*** (0.000)	-0.113 (0.281)		
Liquidity	0.251* (0.063)	0.031 (0.723)	0.237 (0.224)	0.267** (0.029)	0.078 (0.189)	0.165* (0.070)		
Tangibility	-0.069 (0.324)	0.037 (0.565)	0.320 (0.134)	-0.233*** (0.000)	-0.320*** (0.000)	-0.159* (0.098)		
Conservatism (dummy)	0.011 (0.756)	-0.001 (0.982)		-0.022 (0.371)	0.009 (0.583)			
Board size	0.115 (0.112)	0.025 (0.625)	0.043 (0.618)	-0.027 (0.591)	0.023 (0.369)	0.028 (0.625)		
# of interlocks with firms	-0.004 (0.864)	-0.004 (0.816)	0.025 (0.327)	-0.011 (0.537)	-0.022** (0.037)	-0.025 (0.157)		
# of interlocks with banks	-0.034 (0.419)	0.005 (0.835)	-0.010 (0.844)	-0.009 (0.764)	-0.017 (0.321)	-0.022 (0.499)		
Family firm (weak)	-0.026 (0.489)	0.029 (0.328)	0.179** (0.029)	-0.072** (0.018)	-0.003 (0.819)	-0.015 (0.603)		
Preferred shares	-0.052 (0.532)	0.014 (0.615)	-0.037 (0.267)	-0.015 (0.731)	-0.006 (0.706)	0.028 (0.269)		
Years	Yes	Yes	Yes	Yes	Yes	Yes		
Industry	Yes	Yes	Yes	Yes	Yes	Yes		
Observations	709	920	196	416	734	159		
Pseudo R-squared/R-squared	37%	37%	66%	37%	51%	38%		
Adjusted R-squared				33%	49%	29%		
AIC-criterion	663.021	635.336	107.059	-96.120	-668.676	-242.006		

Continues ...

Table VI Robustness check: Minimal 8 observations per firm (continued)

This table presents the results of the logit and the OLS regressions for the periods 1903-1938, 1948-1983 and 1988-2003 for Dutch non-financial firms listed on the stock exchange of Amsterdam during the period 1903-2003, which consists of 20 cross-sections of five-year intervals. The explained variables are dividend payments (model 1-3) and payout ratio (model 4-6). In model 4-6 both dividends paid profits should be larger than zero. As a robustness check, we only include firms that have at least eight firm-year observations, i.e. these firm-year observations can be part of different specified periods. We report per variable the regression coefficient and the p-value and per model the number of observations, the pseudo R-squared/R-squared, the adjusted R-squared and the AIC-information criterion. Definitions of the variables are provided in Appendix I. To avoid biased standard errors, we estimate our models by applying a logit and an OLS regression method with firm clustered standard errors, including industry and year dummies. The intercept is included in the model but not reported in the table. P-statistics are included in parentheses. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

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Chapter 3

The price impact of block transactions in the Netherlands¹⁰

3.1 Introduction

One way for shareholders to prevent managers from pursuing their own interests in running the company is to hold large blocks of shares. Large blockholdings may benefit shareholders if they yield sufficient power to exercise control. However, block transactions can be costly if markets are too shallow to absorb the trade. As a result, the well-known free-rider problem may occur, in which case the benefit of active monitoring for small investors is too low to compensate for the cost of it (Grossman and Hart, 1980). Large blockholdings are more common outside the US and the UK. In fact, this corporate governance mechanism is the dominant governance arrangement in continental Europe and other OECD-countries (Becht *et al.*, 2003; and LaPorta *et al.*, 1998 and 1999). Apparently, the benefits of concentrated ownership can be large enough to overcome the liquidity discount inherent in block ownership, at least in the aforementioned countries. The purpose of this study is to investigate the price effects of block transactions and its determinants by studying a sample of Dutch block transactions.

Block transactions are intriguing events since they have differing price effects. First, trading large portions of shares may result in a liquidity effect. If the trade volume is so large that the market cannot absorb it directly, adverse price effects result for the block trader that are higher the less liquid the market (Scholes, 1972). Second, block trades can result in a disclosure effect. Block trades may convey information about the prospects of a firm (Becht *et al.*, 2003). Shareholders can infer new information about underpricing or

¹⁰ This chapter is the result of a research project conducted with Abe de Jong and Teye Marra. The authors thank Hans Degryse, Frank de Jong, Luc Renneboog, and seminar participants at Tilburg University and Erasmus University for helpful comments. This chapter is accepted for publication in the *International Journal of Corporate Governance*. The authors thank Koos Alfrink for excellent research assistance.

overpricing of stocks from the sale or purchase by a current or incoming blockholder. Third, block transactions can have a monitoring effect. The changing ownership structure may change the monitoring incentives and capabilities.

Most empirical papers on block transactions focus on the US and the UK stock market (e.g., Holderness and Sheehan, 1985; Mikkelsen and Ruback, 1985; and Holderness and Sheehan, 1988; and Fidrmuc *et al.*, 2006). More recently, there is increasing interest in the effects of block transactions in other countries, such as Frino *et al.* (2007) for Australia, Chen *et al.* (2008), Fan *et al.* (2012) and Bian *et al.* (2012) for China, Alzahrani *et al.* (2012) for Saudi Arabia, and Trojanowski (2008) for Poland.

We contribute to the international empirical literature on block transactions by studying block trades in the Netherlands. This country provides an interesting setting to study block trades, given the widespread presence of large shareholders. The concentration of shares is relatively high in the Netherlands compared with the US and the UK. According to Becht and Roëll (1999), the largest block in the Netherlands has a median of 43.5%, while in the UK this block is 9.9% and the median US firm has no block above the disclosure threshold.

In this exploratory study, we analyse the stock price effects of block trades and their subsequent disclosures for Dutch firms over the period 2000-2004. We construct a large sample with 476 block sales and 590 block purchases. Under Dutch law, shareholders have to disclose ownership and trading date information when passing specific thresholds, starting at 5%. We test a conventional event study model and measure abnormal price effects directly around the trading date and around the subsequent disclosure date for both block sales and purchases. We explore possible determinants of the price effect of block transactions by studying the characteristics of the firm, the transaction, and the trader.

In the Netherlands, the years 2000-2004 can be seen as a transition period in corporate governance. In the late 1990s, initiatives were taken to strengthen the role of shareholders in the governance of listed firms. The report by the Peters Committee in 1997, which was followed by an extensive monitoring report about the intentions of the firms to follow Peters' recommendations, provided two outcomes. The first was an increased awareness of the differences between the Dutch setting in terms of weak shareholder rights protection, while the second was a very limited willingness to adapt to Anglo-Saxon developments (De Jong *et al.*, 2005). The second governance committee (Tabaksblat) advocated improved reporting on governance and more ambitious standards; their report was strongly influenced by the Ahold scandal in 2003 and was adapted in 2004. Clearly the years 2000-2004 are different both from earlier and later periods. In addition, the Dutch securities market authority extended and intensified its activities with the launch of the *Autoriteit Financiële Markten (AFM)* as the successor of the *Stichting Toezicht Effectenverkeer (STE)* in March 2002.

We find that the market reacts to the trade, and to a much lesser extent to the subsequent disclosure. On average the abnormal return equals -1.13% for sales and 0.83%

for purchases. These effects are economically meaningful, as the average trade sizes are 9.4% and 11.6% for sales and purchases, respectively. The price effects are mainly explained by liquidity and disclosure effects. In addition, we also find evidence for the influence of agency effects. We find that the market reacts positively to the entrance of a new blockholder. The market reacts negatively to the purchase of a stake of over 25% of total shareholdings. The differing effects related to the size of the block purchase may reflect the conflicting roles of blockholders in the governance of the firm. Blockholders can discipline firms' management in the interest of all shareholders. However, when a blockholder becomes too large, this shareholder may pursue private benefits at the expense of small investors. For block sales, we find a strong negative impact of insider sales. The conclusion that disclosures of trade are followed by weak market reactions is consistent with the limited enforcement of timely disclosures by the Dutch securities markets authorities, which is typical for the early 21st century.

The remainder of the paper is organized as follows. Section 3.2 discusses the literature and describes the Dutch institutional setting. The data is introduced in section 3.3 and the empirical evidence is presented in section 3.4. Section 3.5 concludes.

3.2 Background

In this section, we provide the theoretical background on block trading in section 3.2.1 and sketch the empirical literature in section 3.2.2. We discuss the Dutch institutional setting in section 3.2.3.

3.2.1 Theoretical background

In their seminal contributions to the block trading literature, Scholes (1972) and Kraus and Stoll (1972) develop three hypotheses to explain stock price reactions to block trades, i.e. the substitution hypothesis, the price pressure hypothesis, and the distribution of information hypothesis. According to the substitution hypothesis each large trade of shares consists of infinitely small trades, which have a small effect on prices, because shares with similar risk are considered substitutes in investor portfolios (Scholes, 1972: 182). As results, block trades have no price impact. In line with the price pressure hypothesis sell-initiated trades induce a temporarily enlarged supply, which will lead to a temporary price decrease in case demand does not increase. Buy-initiated trades have the opposite impact. A substantial increase in trade size will lead to stronger effects on prices (Scholes, 1972: 181). Only liquid markets can absorb large volumes without substantial price changes. Market liquidity is reduced by ownership concentration. The distribution of information hypothesis argues that if a party sells a large block, it signals that the stock price is currently overvalued, and if it buys a large block, it signals that stock price is undervalued.

Another perspective on block trades can be gained by applying agency theory. Agency theory originates in the separation of ownership and control (Jensen and Meckling, 1976). Originally, agency problems are associated with the principal-agent relation between the financing and the management of the firm. Effective monitoring by widely dispersed shareholders is rather difficult (Grossman and Hart, 1980; Shleifer and Vishny, 1986). Dispersed shareholders do not have sufficient incentives to monitor management, i.e. the benefits of monitoring management do not exceed the costs that are incurred by doing so. Dispersed shareholders will, therefore, wait for other shareholders to take action in the hope to benefit from that action, i.e. they will free ride. In addition, there is a collective action coordination problem for diffused shareholders. For this reason, shareholders may choose to increase their shareholdings, resulting in higher ownership concentration. Becht and Röell (1999), and LaPorta *et al.* (1998, 1999) find that blockholdings in continental Europe, and especially in the Netherlands, are strikingly higher than in the US and the UK. At the same time, continental European countries have weak minority shareholder protection (La Porta *et al.*, 1998, 1999). According to Becht and Röell (1999) large blockholders in most continental European countries can exercise control over management, but at the same time, there is a potential conflict of interest between controlling and minority shareholders.

Three agency relations prevail in the setting where both block and minority shareholders coexist. The first is between block and minority shareholders. Large shareholders can incur costs, like the cost caused by free riding (Grossman and Hart, 1980), collective action coordination problems (Shleifer and Vishny, 1986), less liquid markets (Bolton and Von Thadden, 1998), and less well-diversified portfolios. These costs can lead to an agency conflict between minority and block owners. Zwiebel (1995) distinguishes between shared benefits of control and private benefits of control, where the first type is enjoyed by all shareholders, whereas the second type is enjoyed by large shareholders only. The latter benefit could be regarded as a compensation for the cost that a large shareholder bears which leads to the shared benefits for all shareholders. If large shareholders can extract firm value at the expense of minority shareholders, this is likely to lead to serious agency problems (see also Pagano and Röell, 1998; and Johnson *et al.*, 2000).

The second agency relationship is the relationship between large shareholders and management. Maug (1998) analyses the incentives of a large shareholder to monitor management and shows that large shareholders will be reluctant to engage in monitoring if stock markets are illiquid (Maug, 1998: 88). Due to their control rights, large shareholders can exert more influence. At the same time, large shareholders have more incentive to do so, because of economies of scale, and their wealth depends more on the value of the firm since it is less well diversified. Monitoring will be more effective the more the interests of both large and minority shareholders are aligned.

A third agency relationship exists between inside and outside shareholders. Inside shareholders are shareholders with a position on the management or supervisory board of the same firm. Therefore inside shareholders have access to more information. Demsetz (1986) argues that a blockholder can compensate monitoring costs by gaining the opportunity for insider trading at the expense of small shareholders. Similarly, one could expect large inside blockholders to benefit at the expense of large outside blockholders. The debate in the literature whether insider trading should be allowed or prohibited is still unresolved (e.g. Leland, 1992); and seems to remain an empirical question. In practice, most countries have introduced insider trading laws (Bhattacharya and Daouk, 2002). The authors show that it is essential that the insider trading laws pose a credible threat. They find that the cost of equity does not reduce until the first prosecution.

3.2.2 Empirical evidence

Several studies find positive abnormal performance for the target firm (purchase). Holderness and Sheehan (1985) report 1.8% for trades by six raiders and 0.4% for trades by regular shareholders. Mikkelson and Ruback (1985) find an average stock price reaction of 2.9% for purchases. Holderness and Sheehan (1988) find a significant average effect after block trades of 7.3%. Barclay and Holderness (1989) find average premiums for block trades of 20.4%, block trades with premiums show significant positive abnormal returns of 2.7%. Additional regressions show a significant positive relationship between trade size and block premium. Barclay and Holderness (1991) find significant positive abnormal returns of 5.1% for all announcements, and abnormal returns are 9.8% for firms that are ultimately acquired and 2.1% for firms that remain independent. Shome and Singh (1995) find abnormal returns on initial announcement of 1.94%. Their regressions show a significant positive relationship for percentage holdings of the block purchasers and a positive effect of non-financial traders and of financial traders on abnormal returns. The positive effect of financial traders is consistent with the efficient monitoring hypothesis and with the evidence of Agrawal and Mandelker (1990), Brickley *et al.* (1988, 1994), and Jarrell and Poulsen (1987). The joint result is that the financial and non-financial relative to the individual trader (blockholder after the trade), suggests in line with Demsetz (1986) and Holderness and Sheehan (1988) finding that large individual blockholders are more likely to engage in perquisite consumption and insider trading, at the expense of minority shareholders.

Empirical research on block transactions outside the US or the UK is limited. Frino *et al.* (2007) study the determinants of the price impact of block trades in Australia and zoom in on the liquidity effects of the trades. They find that block trades during the first hour of the trading experience the greatest price impact. Chen *et al.* (2008), Fan *et al.* (2012) and Bian *et al.* (2012) study block trades in China and find significant block discounts of 4% (Fan *et al.*, 2012), as strong effect of government-related party involvement (Chen *et al.*, 2008 and Bian *et al.*, 2012). The evidence by Alzahrani *et al.* (2012) for intraday data in

Saudi Arabia suggests that market microstructure variables cannot explain the asymmetry between purchases and sales. Trojanowski (2008) investigates block transfers in Poland. The average returns are 1.158% for a sample of 53 observations. He shows that the shareholder's opportunities depend on both the size of the blockholding and the relative power by the other blockholders. These empirical findings demonstrate large institutional variations, which warrant further research under different institutional conditions.

3.2.3 Dutch setting

In this study, we analyse the stock price effects of block trade announcements for Dutch firms over the period 2000-2004. This subsection discusses the Dutch regulation on disclosure of block ownership, the execution of block trades on the Dutch securities market and governance characteristics of Dutch firms.

In 1992 the *Wet Melding Zeggenschap* (WMZ, Law on Disclosure of Major Holdings) was enacted in the Netherlands. This act is the Dutch implementation of the European Commission's 1988 Transparency Directive (Large Holdings Directive 88/627/EEC) and requires legal and natural persons to notify publicly a crossing (in both directions) of share ownership of 5%, 10%, 25%, 50%, or 75% of total shares. Since the WMZ revision of 1996, shareholders need to disclose their positions in capital interests and voting rights as soon as they cross the 5%, 10%, 25%, 50% and 66⅔% levels. In addition, the 2002 revision of WMZ requires both management and supervisory board members to disclose all changes in their personal shareholdings.

The Amsterdam Stock Exchange merged in September 2000 with the Brussels Stock Exchange and the Paris Stock Exchange to form Euronext and is now known as Euronext Amsterdam. Block trades in Amsterdam can be executed either on the upstairs market (i.e. by specialists or brokers) or on the downstairs market (i.e. electronically).

In the Netherlands, dispersion of shares is much more an exception than a rule. According to Kabir *et al.* (1997) blockholders hold (on average) more than half of all shares in Dutch companies (51%), where the largest blockholder owns on average 31% and the sum of the holdings of the three largest blockholders is 45% on average. They also report the following ranking of important blockholders in the Netherlands: companies (20%), financial institutions (10%), management and supervisors (including their family members, 8%), other institutional blockholders (6%), and individual blockholders (5%). De Jong *et al.* (2005) find that blockholdings by outside shareholders, industrial companies and financial institutions have a significant negative impact on performance (Tobin's Q) in the period from 1992 to 1999.

The blockholders in Dutch companies face an array of obstacles in using their voting rights. These limitations of shareholder rights are commonly referred to as *beschermingsconstructies* (i.e. anti-takeover defences or instruments), they generally also mute shareholder voice without a hostile takeover attempt (see Van Schilfgaarde, 2001 and Voogd, 1989). A key Dutch anti-takeover instrument is the structured regime. Within the

(full) structured regime, both a general meeting and a supervisory board are mandatory. Certain rights of the general meeting are transferred to the supervisory board: the supervisory board adopts the annual accounts, appoints and dismisses managing directors, approves certain management decisions, and appoints its own members by a system of co-optation. The structured regime applies to corporations that: (i) regularly employ one hundred or more employees in the Netherlands, (ii) have established a work council, and (iii) have equity capital of at least € 13 million on their latest balance sheet. A second important takeover obstacle are preference shares. In the Netherlands, the management board is allowed, without further consent of the shareholders, to issue preference shares for which only 25 per cent of the nominal value needs to be paid up. In the case of a (hostile) takeover attempt, the management board can place these shares with a befriended party and have the shares paid up with a loan, which dilutes the stake of the hostile party. A third anti-takeover instrument are certificates. Holders of certificates only have cash flow rights. The voting rights remain with the trust that issues the certificates. Fourth, priority shares may be issued, which carry important powers of the general meeting, e.g. a binding appointment for board members. In addition, these shares carry superior voting rights, e.g. with regard to take-over attempts.

3.3 Data, variables and methodology

This section presents our sample selection procedure, the data sources used, variable definitions and empirical methods. The sample and data sources are described in section 3.3.1. We define the variables used in this study in section 3.3.2. Section 3.3.3 describes the empirical methods.

3.3.1 Sample selection

This study focuses on Dutch companies with a listing on the Euronext Amsterdam in the period 2000 to 2004. We retrieve our data from the WMZ-register, a public register published by the Dutch securities market authority (*Autoriteit Financiële Markten, AFM*). This register contains ownership information for transactions where specific thresholds (5%, 10%, 25%, 50% and 66⅔%) are passed, like the identity of the shareholder, the transaction date and the size of the shareholdings (the percentage of equity ownership and voting rights). The AFM discloses the trading dates (i.e. the date on which the threshold is passed) via advertisements in the Dutch financial newspaper (*Het Financieele Dagblad*). These public announcements contain the same information as the WMZ- register and are the first official announcements of block trades.

The WMZ-register does not report trade sizes or trade types, i.e. whether it was a purchase or a sale. To assess the size and type of trades, we compared successive WMZ-

registers. We define the difference between two successive announcements as the trade size and an increase (decrease) in a shareholding as a purchase (sale). When a shareholder discloses a position in a firm for the first time, it is assumed to be a purchase. In case previous disclosures of shareholdings are not available in the WMZ-register, we consulted a stock exchange guidebook which includes positions of individual blockholders (*Handboek Nederlandse Beursondernemingen*).

We start with all registrations in the WMZ-register and exclude transactions related to financial firms and initial public offerings. Our initial sample consists of 1303 observations. Observations are excluded in the following cases: the trading date should not be followed by the disclosure date in *Het Financieele Dagblad* (2 cases); news releases in *Het Financieele Dagblad* referring to a block trade occur on the same date as the trade (6 cases); news releases in *Het Financieele Dagblad* referring to a block trade occur on the same date as the disclosure (9 cases); no announcement is found in *Het Financieele Dagblad* (47 cases); information about the size of the transaction could not be derived (59 cases); the sale is related to a share issue or the purchase is related to a share repurchase (19 and 36 cases); missing firm information (52 cases); and outliers for abnormal returns (7 cases). The final sample, thus, consists of 1066 observations.

We use Datastream for retrieving share price information. This study uses indexed price returns and the All Shares Index, as defined in Datastream. Firm characteristics are retrieved from the following Dutch datasets: REACH, *Gids bij de Officiële Prijscourant* and *Handboek Nederlandse Beursondernemingen*.

3.3.2 Variable descriptions

The variables in this study can be grouped into transaction characteristics, trader characteristics and firm characteristics. In this section, each variable is described.

We first define the transaction characteristics of block trades. *Trade size* is denoted in percentages. In addition, there are four dummies variables for *trade size* that correspond to a range: $Trade\ size < 5\%$, $5\% < Trade\ size \leq 10\%$, $10\% < Trade\ size \leq 25\%$ and $Trade\ size > 25\%$. If *trade size* is within the range of one of the four dummy variables, its value is 1, and otherwise 0. The variable *Seller withdraws completely* is a dummy variable that equals 1 if a trader does not own stock in a company after the trade (i.e., total shareholdings after the trade equals 0%), and otherwise 0. The *Buyer becomes blockholder* is a dummy variable that equals 1 if a trader owns 5% or more of the company's stock after the trade and otherwise 0. Based on news releases in *Het Financieele Dablad* we can trace whether a trade took place between two or more parties. *Changing hands 1-to-1* is a dummy variable that equals 1 if the trade is executed between two parties, and otherwise 0. *Changing hands n-to-n* is a dummy variable that equals 1 if the trade takes place between more than 2 traders (e.g., 1-to-n: if a block is split up and sold to two or more traders, or

vice versa, n-to-1: two or more blocks are bought by one trader).¹¹ The next four dummy variables show whether the trader's share ownership of company i has changed (increased or decreased) in the previous periods (cumulative), i.e. 1, 3, 6 or 12 months before the trade. If there was a change in ownership, then *ownership change (previous 1 month)*, *ownership change (previous 3 months)*, *ownership change (previous 6 months)*, or *ownership change (previous 12 months)* equals 1, and otherwise 0.

All trader characteristics are dummy variables. Traders can be classified into four main groups: *financial companies*, *non-financial companies*, *personal*, and *other*. We further distinguish several subgroups. A financial company is either a *bank*, an *investment trust*, an *insurance company* or a *venture capitalist*. A personal investor can be an *insider* (i.e., a member of the management or supervisory board of the company he trades in) or an *outsider* (i.e., an individual or a family). The group *other* contains all traders that do not classify within one of the previously mentioned groups. If a trader belongs to a group, then the value of that dummy variable equals 1, and otherwise 0. Trader belongs to either one of the main groups, and possibly to one of the subgroups.

All firm-specific variables are based on the end of the book year previous to the transaction date. *Size* is the natural logarithm of the book value of total assets divided by 1000. *Leverage* is defined as book value of total debt divided by book value of total assets. *Tobin's Q* is defined as the market value of total assets divided by the book value of total assets. *Return on assets (ROA)* is defined as operating profit divided by book value of total assets. *Largest shareholder* is the percentage of total shares owned by the largest shareholder. *Largest 3 shareholders* is the sum of the percentages of shares owned by the largest three shareholders. *Free float* is 1 minus the sum of the percentages of shares owned by all shareholders that own at least 5% of total shares. *Number of shareholder rights limitations* is the sum of the number of following four possible limitations that are relevant in the Netherlands: structured regime, preference shares, certificates and priority shares. A company scores 1 for each limitation that applies; the sum, thus, ranges between 0 and 4. *Listed UK/US* is a dummy variable that equals 1 if the company is cross-listed in the UK, the US, or both, and otherwise 0.

3.3.3 Methodology

The effects of the transactions and subsequent announcements of blockholdings are measured using a standard event study methodology, as described in Brown and Warner (1985) and MacKinlay (1997). Our estimation period ranges from day -115 to -16 and the event window from day -15 to day +15, where the announcement date is day 0. Abnormal returns are measured using an Ordinary Least Squares market model regression: $AR_{it} = R_{it} - \alpha_i - \beta_i R_{Mt} + \varepsilon_{i,t}$. AR_{it} is the abnormal return for firm i at day t , R_{it} is the stock return for

¹¹ However, not all trades are covered in news releases, therefore 1 - *Changing hands 1-to-1* does not equal *Changing hands n-to-n*.

firm i at day t (defined as $\ln(P_{i,t}/P_{i,t-1})$) and R_{Mt} is the return on the market index. The parameters α_i and β_i are estimated over the estimation period by running an OLS regression of the stock returns on a constant and on the return of the market index. The test statistic is calculated using the following method as described by Seiler (2004). For the AR, the test statistic is the Z-statistic:

$$\frac{\sum SAR_t}{\sqrt{\sum_{i=1}^N \frac{D_i - 2}{D_i - 4}}}$$

and for the CAR the test statistic is the cumulative Z-statistic:

$$\left(\frac{1}{\sqrt{N}}\right) \frac{\left(\sum_{T_1}^{T_2} SAR_{it}\right)}{\sqrt{(T_2 - T_1 + 1) \left(\frac{D_i - 2}{D_i - 4}\right)}}.$$

SAR_t is the sum of standardized abnormal returns at day t , D_i is the number of observed trading day returns for firm i over the estimation period. N is the number of firms in the events in the sample. SAR_{it} is the SAR for each firm i for each day in the event window. T_1 is the first date of the event window, $t = -2$, and T_2 the last date of the event window, $t = +2$. According to de Roon and Veld (1998), the standard error (non-systematic risk: $\hat{\sigma}_i$) of the returns will differ across firms. Therefore, the abnormal returns will not be distributed identically.¹² For this reason de Roon and Veld propose to use a Weighted Least Squares regression instead of an OLS regression, where both the dependent and independent variables are weighted with the inverse of the estimate of the non-systematic risk, $\hat{\sigma}_i$, from the estimation period in the event study. In line with De Roon and Veld, this study will perform a WLS regression and use $\hat{\sigma}_i$ based on the period from -115 through -16.

3.4 Results

In this section, we present the results of our analyses. In section 3.4.1 we discuss the results of the descriptive statistics of transaction, trader and firm characteristics for block sales and purchases. The effects of block transactions and the disclosure of these transactions on firm value are reported in section 3.4.2. The bivariate analysis of the impact of transaction, trader and firm characteristics on the returns is discussed in section

¹² See also Judge *et al.* (1988, p. 359).

3.4.3. Section 3.4.4 describes the results of the regression analysis of the returns around the transaction and the announcement date of the sale or purchase of blocks of shares.

3.4.1 Descriptive statistics

Table 3.1 summarizes the descriptive statistics of our sample. We separately present transaction, trader and firms characteristics.

Panel A shows that the average trade size is 9.39% for block trade sale announcements (sell) and 11.64% for block trade purchase announcements (buy). The lower median values for trade size show that both distributions are right-skewed. The size of most block trades (80% for sell and 78% for buy) does not exceed the 10%-level. In almost half of the cases (48%), sellers withdraw completely by selling all their shares. For 77% of the block trade purchases, buyers become new blockholders. Block trades are executed between two parties for 18% of the sale announcements and 16% of the purchase announcements. Block trades between several parties occurred in 16% of all sale and 5% of all purchase announcements. We measure the change in ownership in the last 1, 3, 6, and 12 months before a block trade announcement. The results show that 14% of all sale announcements in our sample are preceded by at least one transaction by the same trader in the previous year. For purchase announcements, this percentage is somewhat smaller, i.e. 11%.

Panel B summarizes the results of the identity of the traders. Financial institutions, in particular, banks and investment trusts, are important shareholders in the Netherlands, which is reflected in their share of the block transactions in our sample. The most active trader type is the financial corporation for both the announcements of block sales and purchases (56% and 57%, respectively), followed by the personal trader (31% for both block sales and purchases). Non-financial corporations are much less active as block traders (4% and 7%, respectively). The most active financial traders are investment trusts (24% for both subsamples) and banks (22% and 19%, respectively). The remaining financial traders are venture capitalists (6% and 8%, respectively) and insurance companies (5% and 7%, respectively). The group personal traders can be divided into insiders (8% and 3%, respectively) and outsiders (23% and 28%, respectively). An insider is a management or a supervisory board member or someone that trades indirectly, e.g. via an investment vehicle.

The firm characteristics are described in Panel C. The size of the mean firm is 208 million euro's for the sell sample and 204 million euros for the buy sample. Firms from the sell sample are on average more highly levered than firms from the buy sample. The mean debt ratio is 0.41 for the buy sample and 0.36 for the sell sample. The mean Tobin's Q is 1.50 for the sell sample and 1.55 for the buy sample. The medians, both 1.15, are lower, indicating that Q is somewhat right-skewed. The mean (median) return on assets is 3% (7%) and 4% (8%) for the sell and buy samples, respectively. The mean (median) percentage of shares owned by the largest shareholder is 22% (13%) for the sell sample

and 21% (13%) for the buy sample. The mean shareholdings of the largest three shareholders are 37% for sells and 35% for buys. For both the sell and the buy sample the free float is about 50%. These summary statistics confirm the general finding that shareholdings in the Netherlands, as in other continental European countries, are more concentrated than in the US and the UK (see, Becht and Röell, 1999). The number of shareholder rights limitations is almost equal for both subsamples, with a mean of 1.79 and 1.87 for the sell and buy samples, respectively. Several companies are cross-listed in either the US or the UK: 14% of the sell subsample and 13% of the buy subsample, on average.

Table 3.1 Summary statistics

Panel A: Transaction characteristics								
	Sell				Buy			
	Mean	Median	St.dev.	N	Mean	Median	St.dev.	N
Trade size (in %)	9.39	5.25	15.95	476	11.64	5.45	18.32	590
Trade size $\leq 5\%$	0.38	0	0.49	476	0.17	0	0.38	590
$5\% < \text{Trade size} \leq 10\%$	0.42	0	0.49	476	0.61	1	0.49	590
$10\% < \text{Trade size} \leq 25\%$	0.14	0	0.34	476	0.13	0	0.33	590
Trade size $> 25\%$	0.07	0	0.25	476	0.09	0	0.28	590
Seller withdraws completely	0.48	0.00	0.50	476				
Buyer becomes blockholder					0.77	1.00	0.42	590
Changing hands 1-to-1	0.18	0	0.39	476	0.16	0	0.37	590
Changing hands n-to-n	0.16	0	0.36	476	0.05	0	0.23	590
Ownership change (prev. 1 month)	0.04	0	0.19	476	0.04	0	0.19	590
Ownership change (prev. 3 months)	0.06	0	0.24	476	0.05	0	0.23	590
Ownership change (prev. 6 months)	0.11	0	0.31	476	0.09	0	0.28	590
Ownership change (prev. 12)	0.14	0	0.35	476	0.11	0	0.31	590

Panel B: Trader characteristics								
	Sell				Buy			
	Mean	Median	St.dev.	N	Mean	Median	St.dev.	N
Trader: Financial	0.56	1	0.50	476	0.57	1	0.50	590
Trader: Bank	0.22	0	0.41	476	0.19	0	0.39	590
Trader: Investment trust	0.24	0	0.43	476	0.24	0	0.42	590
Trader: Insurance company	0.05	0	0.21	476	0.07	0	0.25	590
Trader: Venture capitalist	0.06	0	0.23	476	0.08	0	0.27	590
Trader: Non-financial	0.04	0	0.19	476	0.07	0	0.26	590
Trader: Personal	0.31	0	0.46	476	0.31	0	0.46	590
Trader: Insider	0.08	0	0.27	476	0.03	0	0.18	590
Trader: Outsider	0.23	0	0.42	476	0.28	0	0.45	590
Trader: Other	0.09	0	0.29	476	0.05	0	0.21	590

Panel C: Firm Characteristics								
	Sell				Buy			
	Mean	Median	St.dev.	N	Mean	Median	St.dev.	N
Size ln(book value total assets)	12.18	12.29	1.72	444	12.21	12.51	1.79	554
Leverage	0.41	0.39	0.28	444	0.36	0.34	0.28	554
Tobin's Q	1.50	1.15	1.18	442	1.55	1.15	1.33	552
ROA	0.03	0.07	0.21	443	0.04	0.08	0.24	554
Largest shareholder	0.22	0.13	0.18	449	0.21	0.13	0.18	555
Largest three shareholders	0.37	0.29	0.21	449	0.35	0.28	0.21	555
Free float	0.48	0.48	0.24	449	0.53	0.53	0.24	555
Number of shareholder rights limitations	1.79	2	0.99	448	1.87	2	0.94	553
Listed UK/US	0.14	0	0.34	449	0.13	0	0.33	555

The total sample of 1066 observations is divided into two subsamples. The subsamples include 476 block trade sale announcements (Sell) and 590 block trade purchase announcements (Buy) for Dutch non-financial companies that were listed on the Amsterdam Stock Exchange between 1 January 2000 and 31 December 2004. The table reports for each variable and each subsample the mean, median, standard deviation, minimum, maximum and the number of observations. Values without decimals are exact numbers (not rounded). Panel A Transaction characteristics: *Trade size* is denoted in percentages. In addition, there are four dummies variables for trade size that correspond to a range: *Trade size < 5%*, *5% < Trade size $\leq 10\%$* , *10% < Trade size $\leq 25\%$* and *Trade size > 25%*. If the trade size is within the range of one of the four dummy variables, the value of the dummy is 1, otherwise 0. The variable *Seller withdraws completely* is a dummy variable that equals 1 if a trader does not own stock in a company after the trade (i.e., total shareholdings after the trade equals 0%) and otherwise 0. *Buyer becomes blockholder* is a dummy variable that equals 1 if a trader owns 5% or more of the company's stock after the trade and otherwise 0. Based on news releases in *FD* we can trace whether a trade took place between two or more parties. *Changing hands 1-to-1* is a dummy variable that equals 1 if the trade is executed between two parties, otherwise 0. *Changing hands n-to-n* is a dummy variable that equals 1 if the trade takes place between more than 2 traders (e.g., if a block is split up and sold to two or more traders, or *vice versa*, two or more blocks are bought by one trader). However, not all trades are covered in news releases, therefore, *1 - Changing hands 1-to-1* does not equal *Changing hands n-to-n*.

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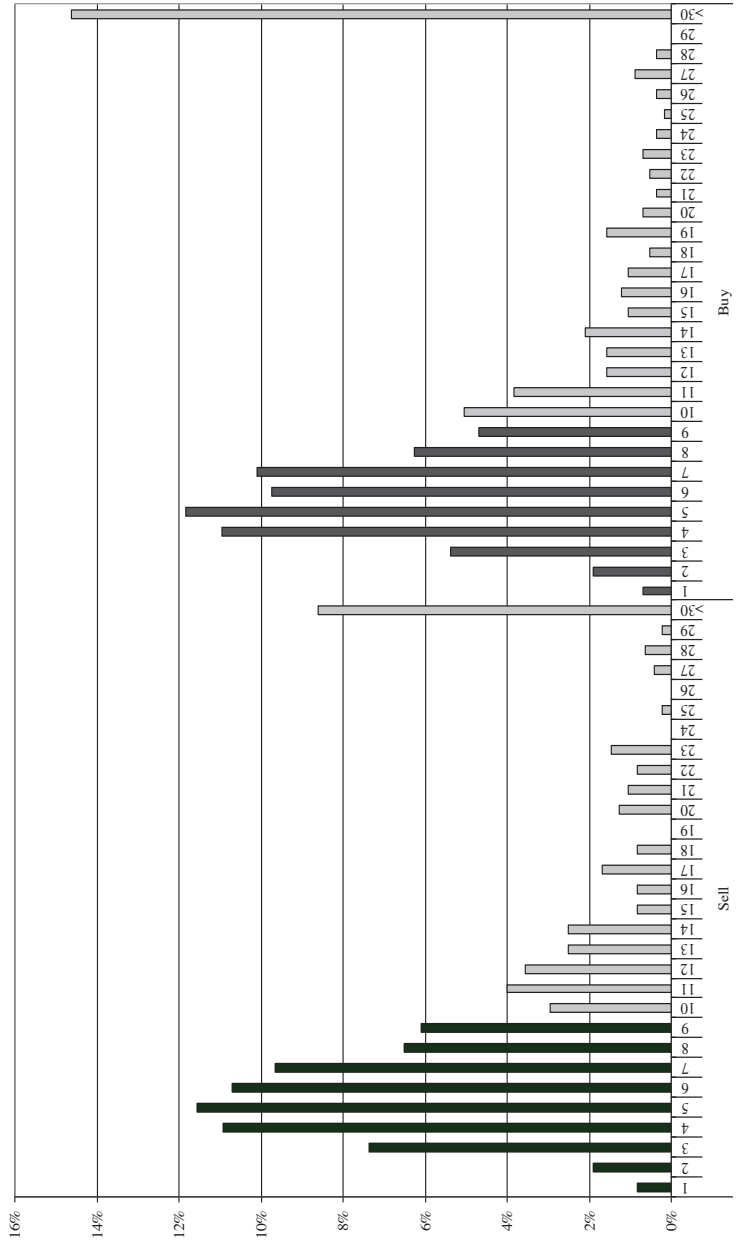
Table 3.1 Summary statistics (continued)

The next four dummy variables show whether the trader's share ownership of company i have changed (increased or decreased) in the previous period (cumulative), i.e. 1, 3, 6 or 12 months before the trade. If there was a change in ownership in the previous period, then *Ownership change (previous 1 month)*, *Ownership change (previous 3 months)*, *Ownership change (previous 6 months)*, or *Ownership change (previous 12 months)* equals 1, otherwise 0. Panel B Trader characteristics: All trader characteristics are dummy variables. Traders can be classified into four main groups: Financial companies, Non-financial companies, Personal, and Other. A financial company is either a Bank, an Investment trust, an Insurance company or a Venture capitalist. A Non-financial company is a company that does not qualify as a company according to the former definition. A Personal investor can be an Insider (i.e., a member of the management or supervisory board of the company s/he trades in) or an Outsider (i.e., an individual or a family). The group Other contains all traders that do not classify within one of the previously mentioned groups. If a trader belongs to a group, then the value of that dummy variable equals 1, otherwise 0. A trader belongs to either one of the main groups, and possibly to one of the subgroups. Panel C Firm characteristics: All firm-specific variables are based on the end of the book year previous to the transaction date. Size is the natural logarithm of the book value of total assets divided by 1.000. Leverage is defined as book value of total debt divided by book value of total assets. Tobin's Q is defined as the market value of total assets divided by the book value of total assets. Return on assets (ROA) is defined as operating profit divided by book value of total assets. Largest shareholder is the percentage of total shares owned by the largest shareholder. Largest 3 shareholders is the sum of the percentages of shares owned by the largest three shareholders. Free float is 1 minus the sum of the percentages of shares owned by all shareholders that own at least 5% of total shares. Number of shareholder rights limitations is the sum of the number of four possible limitations that are relevant in the Netherlands: structured regime, preference shares, certificates and priority shares. A company scores 1 for each limitation that applies, otherwise 0. Listed UK/US is a dummy variable that equals 1 if the company is cross-listed in the UK or the US, or both, and otherwise 0.

According to Dutch company law, shareholders have to report their positions immediately, as soon as their capital interest or voting right crosses the respective levels of 5, 10, 25, 50 and 66⅔%. Then authorities make a public announcement in the Dutch financial daily and at their website within 5 to 9 trading days. We define the time gap between the trade and the subsequent disclosure as the disclosure lag. Figure 3.1 presents a frequency distribution of the disclosure lag.

The median disclosure lag is 7 days for sales and 8 days for purchases. For 73% of the sell sample and 50% of the buy sample is the disclosure lag within the 9 day period after the transaction date. Strikingly, 9% of the disclosures of the purchases and over 14% of the sales lag the transaction date by more than 30 days. For this reason, the average disclosure lag is quite high, 24.85 and 34.10 for sales and purchases, respectively. This result is remarkable since a violation of the disclosure rule can induce legal procedures. Our results show that selling blockholders are more likely to disclose in time than buying blockholders. Apparently, investors who are building up an ownership stake have a higher incentive to postpone disclosure than investors who are selling ownership rights. In our analyses, we control for large disclosure lags by introducing an indicator variable *late disclosure* with a value of one for announcements made more than 30 days after the sale of purchase, and zero otherwise. In a similar vein, we define *timely disclosure* for observations where the announcement is made within 30 days.

Figure 3.1 Frequency distribution of the number of trading days between transaction and disclosure dates



According to the Dutch law on the disclosure of major holdings (WVZ 1996) traders have a duty to disclose within 9 days if their percentage holding in the capital and/or voting rights reaches, exceeds or falls below a threshold. The dark coloured bars show the percentage of timely notifications for each day following the transaction and the lighter bars reflect the late notifications.

3.4.2 *The market reaction to block transactions and disclosures*

Table 3.2 presents the average abnormal returns and the cumulative average abnormal returns of the transactions and subsequent disclosures of the 476 block sales and the 590 block purchases. Panel A presents the returns around the actual block transactions and Panel B the returns around the disclosures of the block transactions. Figures 3.2a and Figure 3.2b present the plots of the cumulative average abnormal returns for the block transactions and the block disclosures, respectively.

Our results show that block transactions as well as the disclosures of block transactions impact market prices in a predictable way. Block sales result, on average, in a negative abnormal return on the transaction date, of -1.14% (significant at the 10% level). Block purchases result in a positive and highly significant average abnormal return on the transaction date of 0.69% (1% significance). We also find expected price effects for the disclosures of the block transactions, albeit less pronounced (respectively -0.14% and 0.21%). The results on the price impact of the disclosures of a block transaction show that these disclosures have little incremental information content. Apparently, most relevant information related to block transactions has been absorbed by the market at and around the transaction day. This result is consistent with limited enforcement of timely disclosures by the Dutch securities markets authorities, but also indicates that market participants are informed about block trades via other sources than the public channels.

Table 3.2 Trade and disclosure: abnormal returns for the event window [-15,+15]

Days		Sell				Buy				
		Pos. %	AAR	P-value	CAAR	P-value	CAAR	P-value		
-15	44%	-0.01	0.70	-0.01	0.70	48%	-0.02	0.17	-0.02	0.18
-14	40%	-0.29	0.62	-0.30	0.53	40%	-0.33	0.00	-0.35	0.00
-13	45%	0.64	0.03	0.34	0.45	51%	0.56	0.04	0.21	0.13
-12	43%	-0.02	0.70	0.32	0.39	44%	-0.12	0.67	0.09	0.12
-11	47%	-0.03	0.24	0.30	0.20	43%	-0.10	0.56	-0.01	0.27
-10	42%	-0.18	0.14	0.11	0.57	43%	-0.20	0.00	-0.21	0.03
-9	43%	-0.40	0.11	-0.29	0.94	46%	-0.39	0.04	-0.60	0.01
-8	45%	-0.22	0.17	-0.51	0.58	45%	0.36	0.20	-0.24	0.04
-7	42%	-0.04	0.87	-0.55	0.57	47%	-0.19	0.62	-0.42	0.07
-6	48%	0.04	0.44	-0.50	0.76	45%	0.11	0.38	-0.31	0.05
-5	48%	-0.09	0.87	-0.60	0.81	51%	0.30	0.01	-0.01	0.25
-4	45%	-0.18	0.56	-0.78	0.95	46%	-0.38	0.14	-0.38	0.13
-3	46%	0.03	0.93	-0.75	0.97	45%	-0.55	0.00	-0.93	0.01
-2	42%	0.04	0.34	-0.71	0.77	44%	-0.13	0.20	-1.07	0.00
-1	49%	-0.15	0.28	-0.85	0.58	50%	0.33	0.00	-0.74	0.06
0	47%	-1.14	0.05	-1.99	0.30	52%	0.69	0.00	-0.05	0.54
1	50%	0.18	0.13	-1.81	0.53	48%	0.18	0.10	0.12	0.85
2	47%	-0.08	0.84	-1.89	0.51	45%	-0.22	0.07	-0.10	0.53
3	45%	0.30	0.26	-1.59	0.70	46%	-0.07	0.95	-0.17	0.53
4	41%	-0.54	0.10	-2.13	0.46	46%	-0.08	0.56	-0.25	0.46
5	47%	0.11	0.23	-2.02	0.64	47%	0.05	0.02	-0.20	0.89
6	41%	-0.21	0.23	-2.23	0.48	44%	-0.16	0.17	-0.36	0.68
7	44%	0.04	0.25	-2.19	0.65	49%	0.28	0.36	-0.08	0.82
8	44%	-0.27	0.41	-2.46	0.54	49%	-0.16	0.63	-0.24	0.75
9	42%	0.01	0.81	-2.45	0.52	47%	0.22	0.24	-0.02	0.94
10	43%	-0.17	0.31	-2.62	0.40	43%	0.09	0.79	0.07	0.91
11	45%	-0.21	0.44	-2.83	0.33	46%	-0.01	0.44	0.06	0.79
12	45%	-0.12	0.71	-2.96	0.31	46%	0.00	0.27	-0.06	0.64
13	43%	-0.30	0.11	-3.26	0.19	45%	-0.12	0.26	-0.06	0.50
14	40%	-0.21	0.27	-3.47	0.14	48%	0.06	0.20	0.00	0.66
15	42%	-0.11	0.63	-3.58	0.12	48%	0.24	0.27	0.24	0.83
[-1,+1]	47%			-1.10	0.38	53%			1.19	0.00
[-2,+2]	44%			-1.13	0.23	48%			0.83	0.00

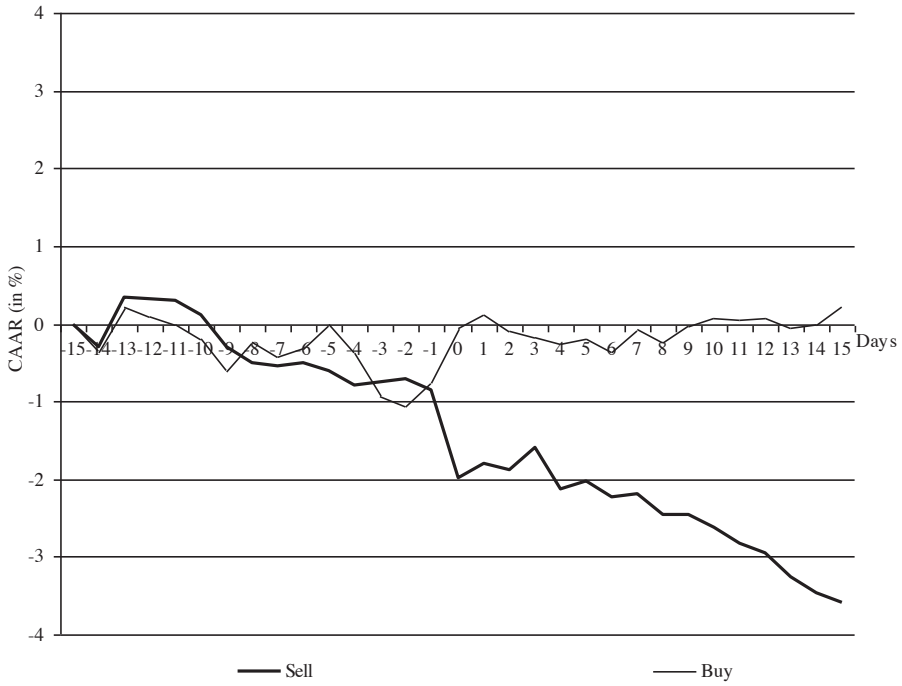
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Table 3.2 Trade and disclosure: abnormal returns for the event window [-15,+15] (continued)

Panel B Disclosure		Sell				Buy				
Days	Pos. %	AAR	P-value	CAAR	P-value	Pos. %	AAR	P-value	CAAR	P-value
-15	47%	0.33	0.34	0.33	0.34	46%	-0.07	0.61	-0.07	0.61
-14	45%	-0.29	0.51	0.62	0.25	48%	0.21	0.14	0.14	0.50
-13	46%	-0.29	0.30	0.33	0.73	48%	0.26	0.04	0.41	0.09
-12	45%	0.19	0.77	0.52	0.66	47%	0.09	0.41	0.50	0.06
-11	49%	-0.34	0.40	0.19	0.99	45%	-0.07	0.38	0.43	0.04
-10	43%	-0.36	0.45	-0.17	0.77	44%	-0.06	0.84	0.36	0.05
-9	43%	0.15	0.76	-0.02	0.87	48%	0.17	0.03	0.53	0.01
-8	42%	0.21	0.42	0.19	0.89	49%	-0.19	0.27	0.34	0.03
-7	47%	-0.03	0.75	0.16	0.98	50%	0.17	0.69	0.51	0.03
-6	42%	-0.82	0.00	-0.66	0.38	47%	0.08	0.29	0.60	0.02
-5	48%	0.02	0.50	-0.64	0.52	46%	0.04	0.02	0.63	0.00
-4	42%	-0.49	0.02	-1.13	0.20	45%	-0.08	0.41	0.55	0.01
-3	48%	0.08	0.74	-1.05	0.25	50%	0.41	0.01	0.96	0.00
-2	46%	0.00	0.11	-1.05	0.49	49%	-0.01	0.78	0.94	0.00
1	46%	-0.19	0.30	-1.24	0.35	42%	0.15	0.15	0.79	0.01
0	43%	-0.14	0.09	-1.38	0.18	52%	0.21	0.12	0.99	0.00
1	46%	0.07	0.86	-1.30	0.21	49%	0.24	0.16	1.24	0.00
2	44%	-0.34	0.24	-1.64	0.14	46%	-0.28	0.14	0.96	0.01
3	43%	-0.15	0.39	-1.79	0.10	45%	0.05	0.94	1.02	0.01
4	50%	0.34	0.67	-1.45	0.13	43%	-0.04	0.05	0.98	0.03
5	41%	-0.14	0.70	-1.59	0.12	45%	0.05	0.64	1.03	0.03
6	43%	-0.26	0.66	-1.85	0.11	42%	-0.41	0.04	0.61	0.08
7	43%	0.00	0.39	-1.85	0.08	43%	-0.08	0.81	0.54	0.10
8	45%	0.10	0.78	-1.75	0.10	47%	0.22	0.90	0.76	0.11
9	41%	-0.32	0.28	-2.06	0.06	50%	0.15	0.34	0.91	0.08
10	41%	0.10	0.57	-1.96	0.09	48%	0.05	0.29	0.95	0.06
11	42%	0.26	0.45	-1.70	0.13	45%	-0.09	0.21	0.86	0.10
12	42%	-0.30	0.12	-2.00	0.07	45%	-0.02	0.38	0.84	0.08
13	45%	0.07	0.44	-1.93	0.06	43%	-0.33	0.10	0.51	0.15
14	41%	-0.05	0.36	-1.98	0.04	46%	-0.63	0.00	-0.11	0.46
15	45%	-0.01	0.78	-1.99	0.05	47%	0.21	0.93	0.10	0.48
[-1,+1]	42%		0.14	-0.25	0.14	52%		0.30	0.30	0.40
[-2,+2]	40%		0.33	-0.59	0.33	45%		0.01	0.01	0.90

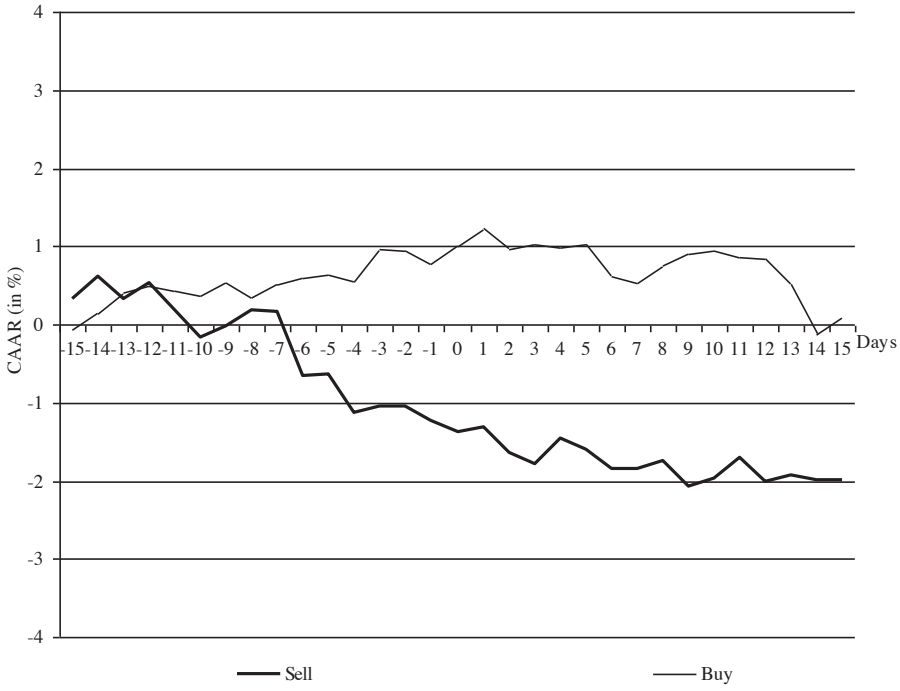
The sample includes 476 block trade sale announcements (Sell) and 590 block trade purchase announcements (Buy) of Dutch non-financial companies that were listed on the Amsterdam Stock Exchange between 1 January 2000 and 31 December 2004. This table reports per day and for the event periods [-1,+1] and [-2,+2] the percentage of positive average abnormal returns, the (cumulative) average abnormal return (i.e. AAR and CAAR), and the significance level. Day 0 is the block transaction date (in Panel A) or the block disclosure date (in Panel B). The transaction date is the day on which a trade was executed that caused the crossing of one of the AFM ownership percentages that require disclosure. The disclosure date is the day on which the block transaction was disclosed by the AFM. The abnormal returns are calculated using a standard event study methodology (risk-adjusted market model) as outlined by MacKinlay (1997). P-values marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

Figure 3.2a Trade: Cumulative average abnormal returns for the event window [-15,+15]



Based on Panel A of Table 3.2

Figure 3.2b Disclosure: Cumulative average abnormal returns for the event window [-15,+15]



Based on Panel B of Table 3.2

Furthermore, we measure highly significant price effects, positive as well as negative, before the transaction date. Strikingly, the average price increase of block purchases between days -1 till +1 is preceded by an equal decline in the price over the period from day -4 till day -2. This significant price effect a few days before block sale transactions shows signs of market timing. Block traders on the Euronext Amsterdam seem to be effective in buying shares when prices are relatively low. The significant price effects before the transaction date can also imply that block traders are buying blocks in smaller portions, thereby partially leaking information to the market.

With respect to block trade disclosures, the price effects before the disclosure date can partly be explained by the price effects of block transactions. The negative price effect of disclosures of block sales at day -6 and -4 is likely to be related to the transaction effect as shown in Figure 3.2a, since, as Figure 3.1 shows, the peak of disclosures of block sales occur some 4 to 6 days after the transaction.

Overall, our results on the market reaction to block trades show that the sign of the price effects is as predicted and that block transactions have more impact on market prices than the subsequent disclosures. In fact, the disclosure of block transactions hardly reveals value relevant information to the market. Further, since the value effects are not concentrated on the day of the announcement, we choose to use the event window $[-2,+2]$ in our further analysis. We will, however, check the robustness of our results to other event windows. We further choose to analyse the effect of block transactions only. In the next two sections, we report on the association between the CARs and characteristics of the transaction, the trader and the firm.

3.4.3 Bivariate analysis

Table 3.3 reports information about the association between the price effects of the block transactions and several characteristics of the transaction, the trader, and the firm.

We first report the relationship between characteristics of the transaction and the market reaction. For block sales with a timely disclosure, we find a significant negative price effect, while we find a larger highly significant positive price effect for a smaller set of block sales that are disclosed late. This may explain why we do not find a significant negative price effect for the whole sample of block sales. The ambivalent result on the relationship between the timeliness of the disclosure and the price reaction on the transaction date is driven by less than 10 per cent of the block sales observations (41). We cannot provide an explanation for this striking result.

Table 3.3 Bivariate analysis of the impact transaction, trader and firm characteristics on the cumulative abnormal returns for event window [-2,+2]

Panel A: Transaction characteristics					
	Sell		Buy		
	CAAR [-2,+2] in %	N	CAAR [-2,+2] in %		N
Total sample	-1.13 (-1.20) [-0.54]	476	0.83 (2.96) [-0.14]	***	590
Timely disclosure	-1.70 *** (-2.61) [-0.64]	435	0.93 (3.29) [-0.06]	***	491
Late disclosure	4.89 *** (4.41) [1.68]	41	0.34 (-0.10) [-1.11]		99
Trade size ≤ 5%	-0.96 (-0.68) [0.17]	181	1.84 (3.32) [-0.02]	***	101
5% < Trade size ≤ 10%	-1.69 (-1.52) [-0.64]	198	1.20 (2.12) [-0.04]	**	362
10% < Trade size ≤ 25%	-0.20 (0.82) [-0.76]	65	-0.90 (0.49) [0.89]		75
Trade size > 25%	-0.56 (-0.39) [-0.62]	32	-1.22 (-0.83) [-1.56]		52
Seller withdraws completely	-0.44 (0.62) [-0.64]	229			
Buyer becomes blockholder			0.89 (2.51) [-0.06]	**	455
Changing hands 1-to-1	0.73 (1.58) [-0.04]	86	0.58 (2.44) [-0.02]	**	95
Changing hands n-to-n	-1.70 (-1.56) [-0.76]	75	-4.89 (-1.99) [-1.04]	**	32
Ownership change (previous 1 month)	-12.40 *** (-2.91) [-1.49]	17	-0.77 (-1.34) [-1.70]		21
Ownership change (previous 3 months)	-7.76 *** (-2.76) [-1.07]	30	0.33 (-0.59) [-1.11]		32
Ownership change (previous 6 months)	-4.46 * (-1.72) [-0.99]	53	0.92 (0.30) [-0.65]		52
Ownership change (previous 12 months)	-3.21 (-1.25) [-1.14]	66	1.10 (1.03) [-0.19]		64

Continues ...

Table 3.3 Bivariate analysis of the impact transaction, trader and firm characteristics on the cumulative abnormal returns for event window [-2,+2] (continued)

Panel B: Trader characteristics					
	Sell		Buy		
	CAAR [-2,+2] in %	N	CAAR [-2,+2] in %		N
Trader: Financial	-1.41 (-0.70) [-0.43]	267	1.15 (2.78) [0.44]	***	336
Trader: Bank	0.53 (1.19) [-0.16]	103	1.30 (1.04) [0.73]		110
Trader: Investment trust	-4.57 *** (-3.47) [-0.65]	115	0.86 (1.02) [-0.12]		139
Trader: Insurance company	-0.26 (-0.16) [-0.87]	22	1.27 (1.19) [1.45]		39
Trader: Venture capitalist	3.66 *** (2.78) [1.79]	27	1.52 *** (2.97) [2.48]		48
Trader: Non-Financial	1.61 (0.54) [-1.35]	18	2.71 (1.57) [-0.64]		42
Trader: Personal	-0.39 (-0.06) [0.00]	148	-0.37 (0.40) [-0.01]		184
Trader: Insider	-4.12 (-1.60) [-1.30]	37	-4.90 *** (-2.62) [-2.23]		19
Trader: Outsider	0.01 (0.86) [-0.27]	111	0.00 (1.31) [-0.38]		165
Trader: Other	-3.12 ** (-2.48) [-1.70]	43	2.10 (0.99) [-1.29]		28

The sample includes 476 block trade sale announcements (Sell) and 590 block trade purchase announcements (Buy) of Dutch non-financial companies that were listed on the Amsterdam Stock Exchange between 1 January 2000 and 31 December 2004. This table contains cumulative abnormal returns for the event window [-2,+2] and the number of observations. Day 0 is the block transaction date, i.e. the day on which a trade was executed that caused the crossing of one of the AFM ownership percentages that require disclosure. The abnormal returns are calculated using standard event study methodology (risk-adjusted market model) as outlined by MacKinlay (1997). See the caption of Table 3.1 for the definitions of the variables. An exception is the dummy variable Late (Timely) disclosure, which equals 1 if the number of trading days between the transaction and disclosure exceeds (does not exceed) 30 days, and otherwise 0. Z-values are in parentheses and medians are in square brackets. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided).

The purchase of a block of shares elicits a significant positive price effect of almost 0.9% on average for the whole sample of block purchases. Buying relatively large numbers of shares in a short period of time is likely to drive prices upwards. Our result corroborates the general price effect caused by block purchases. The price effect of block purchases is principally caused by the block trades that are timely disclosed. Late disclosed block purchases have no significant effect on market prices.

The size of the transaction also influences the reaction of the market, however, only for relatively small block purchases that are, naturally, much more common than purchases of larger blocks. The positive market reaction to block purchases is driven by transactions with a size of 10% or smaller. Block purchases over 10% of total shareholdings result in an insignificant negative market reaction. We do not find any significant price effect for the different size categories of block sales. Obviously, this result may change once we control for other characteristics.

We do not find that the market reacts differently to the complete withdrawal or a partial withdrawal of a shareholder after selling a block of shares. This may imply that the market either is not yet informed around the transaction date of the total abandonment of a blockholder or it is indifferent about it. Similarly, we study the possible different price effect of a new blockholder, i.e. an investor that increases his stake in the firm for the first time to 5% or more. Block purchases that result in a new blockholder have a more positive effect on the market price of equity than block purchases that do not result in new blockholders. This result implies that the market generally appreciates the appearance of a new blockholder in the governance structure of a firm.

Blockholdings can be sold or bought at once or in stages. This may affect the sign and magnitude of the price reaction. Our results show that the exchange of a block of shares from one party to another does result in a positive market reaction, although this effect is only significant for block purchases. In contrast, when several parties (i.e. more than two) are involved in the selling or buying of a block of shares, we find a negative price effect that is significant only for block purchases. The market, thus, seems not to appreciate the establishment of a block of shares through the purchase from more than one seller. Such a transaction increases the ownership concentration. An increase in ownership concentration can increase the cost related to the entrenchment of a blockholder who may engage in activities that benefit him or her at the expense of minority shareholders.

Block traders may follow a strategy in which they sequentially sell or buy smaller equity stakes. For example, establishing an interest in the firm's equity by buying small stakes at a time, may not alert the market as much as buying such a stake in one transaction, thereby reducing the upwards pressure on share prices. Another reason for buying or selling smaller equity stakes is related to the (il)liquidity of the equity market, a serious concern considering the relative size and depth of the Euronext Amsterdam. Block sales that are preceded by transactions by the same trader in previous months result in a strong negative market reaction. The negative market reaction to subsequent block

purchases is stronger, the shorter the period in which an earlier transaction took place. We believe that the shorter the period in between two similar transactions, the more likely the strategic selling of a blockholding. Thus, the market seems to be able to identify the trader and punishes him or her more severe, the shorter the period in between two sales. We do not measure a significant market reaction in relation to the sequential purchase of blocks of shares.

Next, we report the effects of the identity of the trader on firm value for our sample. In general, the fact that a trader is a financial party elicits a negative market reaction to a block sale and a positive market reaction to a block purchase, where only the positive reaction to a block purchase is statistically significant. We further investigate the price effect of different types of financial traders. The sale of a block of shares by an investment trust causes a strong negative market reaction, whereas the sale by a venture capitalist results in a strong positive reaction. The positive influence of financial traders on block purchases is mainly caused by venture capitalists. The results, thus, show that the capital market considers a transaction by a venture capitalist always as good news, no matter the type of transaction (i.e., a sale or purchase). Block transactions by non-financial traders do not convey information to the market.

Another group of traders that we distinguish in our study are personal traders. Personal traders are either members of the management or supervisory board, individuals, and families. We divide the group personal traders into insiders and outsiders. Our analysis shows that block transactions by insiders generally cause a negative price reaction that is only significant for block purchases. The market may interpret the purchase of a block of shares by an insider as an increase in the likelihood that the insider will personally benefit at the expense of outsiders. Transactions by outsiders do not result in a market reaction, which is in line with the former deduction. The sale of a block of shares by traders other than financial, non-financial and personal traders has a strong and significant negative influence on the value of the firm.

3.4.4 Regression analysis

The previous analysis shows that block trades rather than the disclosures of block trades cause the market to react. Disclosures of block transactions do not provide much incremental value relevant information. Apparently, block trades are quite visible. In addition, the lag between block transactions and the subsequent mandatory disclosures might generally be too long to provide useful information to investors.

The bivariate analysis showed the several variables to influence the direction and magnitude of the market reaction to block transactions. The price effect of block sales is significantly related to the disclosure lag, an ownership change in the previous period and the identity of the trader. The price effect of block purchases is significantly influenced by the disclosure lag, the trade size, the fact that the buyer becomes a blockholder, the trading

strategy and the identity of the trader. We now will investigate to what extent these results hold taking into account mutual influences.

We first discuss the results regarding the influence of firm, transaction and trader characteristics on block sales. Table 3.4 reports the results for the mutual impact of firm, transaction and trader characteristics on the CARs in the 5-day period around the sale of a block of shares. We present five different models in order to control for possible confounding effects. Variables are – conservatively – excluded from the model if the t -value of the estimated coefficient is lower than 1. Model 1 includes firm characteristics only. The results show that firm characteristics are hardly related to the CARs around the transaction date of block sales. However, if we leave out the variables *Size* and *Number of shareholder limitations*, the *Tobin's Q* turns out to positively influence price in all other models. We conclude that firms with higher growth perspectives have higher block premiums around block sale transaction dates.

Model 2 adds the characteristics of the transaction. We find a strong positive influence of late disclosure on the price effect of block sales. This effect sustains through all subsequent models. Our result on the disclosure lag implies that block sales of late disclosing traders have a premium over early disclosing traders. As mentioned before, we are unaware of a fundamental reason that may drive this striking result. We further find that small block sales negatively impact prices (t -value of 1.616) and that the 1-to-1 sale of a block has a positive price effect (t -value of 1.509). These effects hold in the multivariate regression analysis in model 5, although only at the 10%-level.

In model 3 we include trader characteristics. We assume that certain traders have an advantage over other traders. For example, some traders can be privately informed about the prospects of a company. Others are better monitors or are more experienced in trading blocks of shares (i.e., have better knowledge of parties engaging in block trades). On first sight, it looks as if the influence of the identity of the trader as found in the bivariate analysis disappears in the multivariate analysis (model 3).

Table 3.4 The impact of firm, transaction and trader characteristics on the cumulative abnormal returns for event window [-2,+2] for block sale transactions

	(1)	(2)	(3)	(4)	(5)
Intercept	0.052	-0.096	-1.335		
Firm characteristics					
Size ln(book value total assets)	-0.002	-0.277			
Leverage	-0.121	-1.265	-0.075	-1.373	-0.098
Tobin's Q	0.014	1.446	0.019	2.219	0.016
Listed UK/US	0.077	1.889	0.037	0.870	0.007
Number of shareholder rights	-0.013	-0.561			0.205
Free Float		0.142	0.168	1.221	0.132
Transaction characteristics					
5% < Trade Size ≤ 10%		-0.074	-0.066	-1.297	-0.082
10% < Trade Size ≤ 25%		-0.015	-0.284		-1.759
Trade size > 25%		0.004	0.066		
Seller withdraws completely		0.003	0.054		
Changing hands 1-to-1		0.099	1.509	0.087	1.901
Changing hands n-to-n		0.056	0.999		*
Ownership change (prev. 3 months)		-0.018	-0.140		
Late disclosure		0.162	2.683	0.148	2.532
Trader characteristics					
Trader: Financial			-0.108	-0.986	
Trader: Bank				-0.012	-0.248
Trader: Investment trust				-0.122	-1.102
Trader: Insurance company				-0.052	-0.959
Trader: Venture capitalist				-0.051	-0.718
Trader: Non-Financial			-0.046	-0.507	
Trader: Personal			-0.062	-0.926	
Trader: Insider				-0.112	-2.482
Trader: Outsider				-0.010	-0.230
R-squared	0.039	0.110	0.112	0.144	0.142
Adjusted R-squared	0.028	0.085	0.092	0.118	0.124
N	441	442	442	442	442

This table reports the results of the WLS regressions for the subsample block trade sales (Sell) for Dutch non-financial companies that were listed on the Amsterdam Exchange between 1 January 2000 and 31 December 2004. The explained (or endogenous) variable is the cumulative abnormal return around block transaction dates for the event window [-2,+2], which is calculated using the event study methodology as outlined in Brown and Warner (1985), MacKinlay (1997), and Seiler (2003). Day 0 is the day on which a transaction was executed that caused the crossing of one of the AFM ownership percentages that require disclosure. The explanatory (or exogenous) variables are defined in the caption of Table 3.1. An exception is the dummy variable Late disclosure, which equals 1 if the number of trading days between the transaction and disclosure exceeds 30 days, and otherwise 0. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided). The t-statistics are White Heteroskedasticity-consistent. The weighted least squares (WLS) regressions are two-tailed.

However, by focusing on a few trader groups in particular (model 4 and 5), we find a strong negative price effect for personal insider traders. Hence, the price effects that we measure for investment trusts and venture capitalists in the bivariate analysis disappear in the multivariate analysis. Instead, insider trading comes out as a strongly negative determinant of price effects by the selling of blocks.

We next discuss the results for the impact of the firm, transaction and trader characteristics on buying blocks of shares, as reported in Table 3.5.

None of the firm characteristics that we use in our analysis significantly impact the value of the firm around the purchase of blocks of shares. With respect to the transaction characteristics, we find a strong negative price impact for relatively large block purchases. Block purchases over 25% of total shares negatively influence the share price around the transaction date on at least the 1% significance level in all four models in which this variable is included (models 2 till 5). For smaller blocks, with a trade size over 10% but less than 25% of total shares, we also find a negative price effect, albeit less significant. It, thus, seems that large block purchases are generally perceived as bad news on Euronext Amsterdam. One large blockholder may be preferred over a few larger blockholders, because of the difficulty of aligning the objectives of several blockholders resulting in less monitoring. However, larger blockholders are more likely to collude with management, or, managers may entrench themselves more easily. Apparently, the collusion and/or entrenchment hypotheses seem to override the general influence of large block purchase transactions for our sample. A buyer that becomes a blockholder positively affects the share price. This result is statistically significant for all models that include this variable (model 2 till 5). It, thus, strengthens the bivariate result we find for this variable. The disclosure lag and the changing hands variables lose their significance in explaining the CARs in a multivariate analysis.

In models 3 to 5, we explore the effect of the identity of the trader on firm value around the transaction date. Model 3 shows that we do not find an impact of the identity of the trader, in general, terms. However, if we further distinguish between the different trader types, we find evidence that both investment trusts and venture capitalists are associated with negative effects. Interestingly, this also applies to the personal trader, irrespective whether they are insiders or outsiders.

Table 3.5 The impact of firm, transaction and trader characteristics on the cumulative abnormal returns for event window [-2,+2] for block purchase transactions

	(1)	(2)	(3)	(4)	(5)
Intercept	-0.036	-0.870	-0.008	-0.161	
Firm characteristics					
Size ln(book value total assets)	0.005	1.636	0.003	0.994	0.003
Leverage	0.051	1.382	0.057	1.663 *	0.062
Tobin's Q	-0.003	-0.617	-0.005	-0.873 *	-0.005
Listed UK/US	-0.031	-1.637	-0.033	-1.696 *	-0.034
Number of shareholder rights	-0.009	-1.096	-0.009	-1.340	-0.010
Free float		-0.269		-0.010	-1.239
Transaction characteristics					
Trade size					
5% < Trade size ≤ 10%		-0.016		-0.943	
10% < Trade size ≤ 25%		-0.040		-1.789 *	
Trade size > 25%		-0.066		-3.054 ***	
Buyer becomes shareholder		0.040		2.355 **	
Changing hands 1-to-1		-0.012		-0.455	
Changing hands n-to-n		0.012		0.570	
Ownership change (prev. 3 months)		0.025		1.321	
Late disclosure		-0.006		-0.250	
Trader characteristics					
Trader: Financial					
Trader: Bank					
Trader: Investment trust					
Trader: Insurance company					
Trader: Venture capitalist					
Trader: Non-Financial					
Trader: Personal					
Trader: Insider					
Trader: Outsider					
R-squared	0.105	0.115	0.158	0.161	0.159
Adjusted R-squared	0.085	0.091	0.141	0.139	0.138
Observations	550	550	550	550	550

This table reports the results of the WLS regressions for the subsample block trade purchases (Buy) for Dutch non-financial companies that were listed on the Amsterdam Exchange between 1 January 2000 and 31 December 2004. The explained (or endogenous) variable is the cumulative abnormal return around block transaction dates for the event window [-2,+2], which is calculated using the event study methodology as outlined in Brown and Warner (1985), MacKinlay (1997), and Seiler (2003). Day 0 is the day on which a transaction was executed that caused the crossing of one of the AFM ownership percentages that require disclosure. The explanatory (or exogenous) variables are defined in the caption of Table 3.1. An exception is the dummy variable Late disclosure, which equals 1 if the number of trading days between the transaction and disclosure exceeds 30 days, and otherwise 0. Estimated coefficients marked with ***, ** or * are significant at the 1%, 5% or 10% level, respectively (two-sided). The t-statistics are White Heteroskedasticity-consistent. The weighted least squares (WLS) regressions are two-tailed.

3.5 Conclusions

We analyse the stock price effects of block sales and purchases and the disclosures thereof for Dutch firms over the period 2000-2004. Under Dutch law, shareholders have to disclose ownership and trading date information when passing specific ownership thresholds. We test a conventional event study model and measure abnormal price effects both on the trading date and the disclosure date for block sales and purchases.

Our results for 476 sales and 590 purchases indicate that block transactions sort abnormal price effects, particularly for block purchases, a few days around the transaction date. We report a highly significant average cumulative abnormal return of 0.83% for block purchases over a period of 5 days around the transaction date. We do not report abnormal returns on and directly around the date of the mandatory disclosure of block transactions. This result implies that block trades are observable to market participants on Euronext Amsterdam and/or that the lag between block transactions and the subsequent mandatory disclosures is generally too long to provide useful information to investors. A subset of the transactions in our sample was not disclosed within the legal term of nine trading days. We measure the determinants of the price effects around the block transaction dates using information about the firm, the transaction, and the trader. We find that most of the price effects can be explained by liquidity or information arguments. However, we do find that governance characteristics are informative too. When a new blockholder enters the firm, the market reacts positively. However, if the new blockholder buys too large a block, i.e. a block over 10% of total shareholdings, the market reacts negatively. This result reflects the conflicting concerns about the positive disciplining role of a blockholder on firms' performance and the negative effect of pursuing private benefits at the expense of small investors when this blockholder becomes too large.

Our results describe the period 2000-2004. As mentioned in the Introduction, this is a specific period in which attention to and enforcement of shareholder information and rights are increasing. We recommend conducting additional analyses for earlier periods, as well as for more recent announcements, in order to further investigate the price effects of block trades.

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Chapter 4

The relation between transparency, corporate governance and firm performance in the Netherlands¹³

4.1 Introduction

This study investigates the relations between transparency, corporate governance, and performance for a sample of Dutch exchange-listed firms. These firms have professional managers, who are at best partial owners of the company. This setting leads to agency problems, which can be influenced by transparency and corporate governance regimes. Agency problems are inherent to a corporation due to the separation of ownership from control (Berle and Means, 1930, 1932; Jensen and Meckling, 1976; Fama and Jensen, 1983). Corporate governance mechanisms and transparency (or disclosure) are mechanisms that mitigate these agency problems and maximize firm value. As a consequence, corporate governance mechanisms (e.g., Shleifer and Vishny, 1997; La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998; La Porta, Lopez-de-Silanes, and Shleifer, 1999) and corporate transparency (e.g., Core, 2001; Healy and Palepu, 2001; Botosan and Plumlee, 2002; Graham, Harvey, and Rajgopal, 2005; Lambert, Leuz, and Verrecchia, 2007) are expected to influence firm performance. Transparency can have different forms and can thus be based on different sources.¹⁴ In this study, our main focus is on the annual reports of firms.

¹³ Chapter 4 builds on a project by Abe de Jong, Doug DeJong, Gerard Mertens and Charles Wasley about reporting transparency in the Netherlands. I want to thank these researchers for the opportunity to use the annual report data of this project for my chapter. The author thanks Mark van den Einde and Rien Strootman for excellent research assistance.

¹⁴ Barth and Schipper (2008) point out that “‘financial reporting transparency’ lacks an agreed upon definition” (see p. 175), which differs depending on the context.

Transparency can be seen as part of the corporate governance mechanisms or as a separate area. To some extent the development of transparency and corporate governance seem to go hand-in-hand, i.e. often developments or events (fraud, collapses, misrepresentation in financial statements) in one area, tend to trigger the further development of the other, especially when it comes to improvements in law and regulation. According to the nature of this study, we make a distinction between the two.

The purpose of this study is twofold. Firstly, we document the relationship between corporate governance characteristics and transparency. Our sample consists of Dutch non-financial firms with shares listed on the Euronext Amsterdam exchange. IFRS became mandatory in 2005 and had to be applied to the annual reports by all Dutch listed firms. Secondly, we examine the relationship between transparency and subsequent firm performance. For both purposes, we investigate the effect of IFRS by comparing pre-IFRS (1997-2003) and post-IFRS (2005-2007) periods.

The Netherlands provides an ideal setting to observe the relations among corporate governance, transparency and performance. While the equity market is an important source of capital and all firms face a common set of legal, political and economic constraints, there is considerable discretion in the disclosure environment, in particular before the introduction of IFRS. With regard to the corporate governance environment, there are a number of interesting and subtle governance features related to legal form, takeover defences, and cross-listing unique to the Netherlands. In particular, there is not an active takeover market in the Netherlands and the country is known for constraining the rights of minority shareholders. All of these suggest that the Netherlands is an interesting setting to observe the relation between performance, and corporate governance and transparency.

We first investigate the determinants of corporate disclosure. Over the period 1997-2007 we find that the number of items disclosed in annual reports has increased, and in particular, after the introduction of IFRS, we observe a strong increase in transparency. In the period before IFRS, we find that disclosure is mainly driven by firm size and leverage. Large and highly levered firms are more inclined to disclose items in their annual reports. Interestingly, firms that are shielded against a hostile takeover with preference shares also have higher disclosure scores. This indicates that the lack of disciplining in the market for corporate control is compensated by additional disclosure. After the introduction of IFRS, we find much lower variation in disclosure practices, leaving less for the antecedents of disclosure to explain. Still, some interesting results emerge. For example, bank ownership reduces transparency, potentially because banks do not rely on annual report information when they serve as a firm's house bank. The effect of preferred shares in the post-IFRS period is only applicable to disclosure items on accounting standards, governance and strategy.

Next, we investigate the performance consequences of disclosure. Here, the pre-IFRS period yields systematically different results, when compared to the years after the introduction of IFRS. Before 2004 firms have much more discretion in their disclosure

policies. We find that higher disclosure is followed by lower Tobin's Q values, an effect that lasts, at least, four years. This may imply that firms' disclosure allows investors to assess firm value better and to remove optimistic judgement from the prices. This finding is in line with Miller's (1977) argument that divergences in opinion on firm prospects lead to higher prices. The exception to this effect is information on accounting standards, which has a positive value effect. Clearly, accounting standard information serves as a valuable governance device. After the introduction of IFRS, we find no systematic effects of transparency on performance.

This study contributes to the literature by an in-depth study of the relationships between corporate governance, transparency, and performance. We apply a new transparency index based on 186 data items, for which the data was hand-collected from annual reports (Botosan, 1997). We provide insight into the effects of IFRS on both transparency and performance, which became mandatory for Dutch firms as of 2005. In addition, we add to the literature on the adoption of IFRS (Suderstrom and Sun, 2007; Armstrong *et al.*, 2010; Brüggemann *et al.*, 2013).

The remainder of the chapter is organized as follows. Section 4.2 provides some background on corporate governance and transparency issues as they relate to the Netherlands. Section 4.3 describes the sample, data, variables definitions and research methods. Section 4.4 presents the results and section 4.5 concludes.

4.2 Governance, transparency, and the Dutch case

4.2.1 *The relations between corporate governance, transparency, and performance of firms*

Listed firms are managed by professional managers, which may or may not own a stake in the firm. In case the internally generated capital is insufficient to finance the activities of the firm, it needs additional outside capital. This outside capital can be obtained either by issuing shares or attracting new debt. The providers of outside capital will experience information asymmetries (Akerlof, 1970; Hölmstrom, 1979). Berle and Means (1930, p. 58) already indicated that '*the stockholder has no direct influence on management*' and '*their [management and stockholders] respective interests are often opposed.*' Berle and Means (1932) have a large influence on our understanding of the large corporation characterised by the separation of ownership and control.¹⁵ In line with the tradition of the separation of ownership and control, Jensen and Meckling (1976), analytically explain the relationships between shareholders (principals) who engage managers (agents) to manage

¹⁵ Other studies that contributed to our understanding of the (listed) firm, and the relationship between owners and management are Coase (1937) and Dodd (1932). Dodd makes a distinction between the private enterprise with profit-maximization goals and enterprises with a public function that also aim at serving the interest of society.

the firm on their behalf. Both the principal and agent are assumed to be utility maximizers. In order to make sure agents do not engage in activities which are not in the best interest of the principal, agency costs for monitoring and bonding are incurred as well as residual losses.

In other words, corporate governance devices, including transparency, serve to reduce agency costs and thus enhance firm value. The literature suggests that major outside shareholders constrain management's deviation from value-maximizing behaviour (e.g., Agrawal and Knoeber, 1996; Cho, 1998; Holderness and Sheehan, 1988; La Porta *et al.*, 1999; Morck, Shleifer, and Vishny, 1988). These outside shareholders can be individuals, financial institutions (i.e., banks, insurance companies and pension funds, etc.) and industrial firms. The influence of shareholders is adversely affected by constraints placed on their voting rights and by management's attempt to prevent changes in corporate control (e.g., Stulz, 1988; Malatesta and Walkling, 1988). Thus, anti-takeover defences or instruments limit the disciplining role of shareholders and the market for corporate control.

Two additional factors related to monitoring are debt markets and cross-listings. Debt markets can discipline management's deviation from value-maximizing behaviour (Jensen, 1986). When a firm increases its debt, it needs cash for interest payments and for paying back the principal amount borrowed. Management has to make sure that sufficient cash inflows are generated to be able to meet these future payments. This reduces the discretion for management because managers prefer to avoid financial distress. It is important to recognize the disciplining aspects of listing on a foreign exchange. In particular, UK and US listings require more company and compensation disclosure than Continental European exchanges (Lins, Strickland, and Zenner, 2005). These higher disclosure requirements are referred to as increased bonding costs.

Corporate governance mechanisms naturally evolve to mitigate agency costs, via practices, laws or regulations. Annual reports are a form of corporate disclosure enabling outsiders to monitor the firm's activities. Corporate disclosure is an important means of reducing information asymmetry between management and outside shareholders. Disclosure can be defined as any intentional release of financial or non-financial information (Gibbins, Richardson, and Waterhouse, 1990; Healy and Palepu, 2001). There are different ways by which information can be disclosed, i.e. by the firm itself (e.g. annual reports, interim reports, quarterly reports, prospectuses, press releases, conference calls, websites, etc.), or via intermediaries (e.g. financial analysts, brokerage firms, credit rating agencies, etc.). The external user could also assess the disclosed information on its fundamental qualities, such as relevance and faithful representation, and whether there is an acceptable combination of the enhancing qualities, such as comparability, verifiability, timeliness and understandability (Harrison, Horngren, Thomas, and Suwardy, 2013). Annual reports of listed firms are audited and require an auditor's report which improves the reliability of the information.

Disclosure can be quantitative or qualitative, mandatory or voluntary, and can take place via formal or informal channels. Mandatory disclosure is disclosure by which information is shared to fulfil external requirements, e.g. law (especially relevant in civil law countries), regulation, and standards. Standards can be defined by private organizations e.g. US GAAP by the U.S. Securities and Exchange Commission, IFRS by the International Accounting Standards Board (IASB). Voluntary disclosure is any disclosure in excess of mandatory disclosure. Clearly, irrespective of the legal and regulatory regimes, firm management has discretion in the information they provide to financiers. Therefore, it is interesting to study disclosure choices and its relation with governance and performance.

Disclosure, like any other governance device, can complement as well as substitute for other governance mechanisms (Agrawal and Knoeber, 1996). When disclosure is complementary to other governance devices, information in annual reports acts as a bonding device mitigating agency problems and we expect that well-governed firms have better disclosure policies. For example, blockholders can use their informational advantage, which they achieve by using the economies of scale based on their shareholdings to reduce information asymmetry for themselves and all other providers of capital. Large shareholders can monitor management or effectively reduce the information asymmetry by demanding more information to be disclosed via the annual report. Alternatively, corporate governance devices may substitute each other (Agrawal and Knoeber, 1996) to the extent that they have a comparable effect. For example, if management is entrenched by anti-takeover defences, the managers may enhance the disclosure both under pressure from the capital market and to legitimize their protection. Similarly, firms may substitute disciplining with leverage by providing additional transparency.

Transparency may affect firm value in at least two ways, the reduction of agency costs, as described in this section, and the reduction of information risk (Botosan, 1997; Botosan and Plumlee, 2002; Barth and Landsman, 2003; Brown, Hillegeist, and Lo, 2004; Easley and O'Hara, 2004). Information risk implies that non-transparency has a negative effect on value. Previous studies investigate the effect of disclosure on cost of capital of equity (e.g., Botosan, 1997), the weighted average cost of capital (Barth and Landsman, 2003), or the private information portion of the bid-ask spread in market microstructure literature (Brown *et al.*, 2004; Easley and O'Hara, 2004) and the earnings price ratio as a measure of the cost of equity capital (Easton, 2004).¹⁶ The results of these studies indicate that

¹⁶ From La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1997) and Bushman and Smith (2001), the country level CIFAR Index (Center for International Financial Analysis and Research) of criteria has been used to measure the quality of the financial accounting regime of a country. The CIFAR index, the quality of the legal system and corporate governance measures are associated with cross-country differences in economic performance. However, within a country such as the Netherlands, with legally required disclosures enumerated and a very good legal system, the CIFAR is unlikely to be helpful explaining cross-firm differences in reporting.

disclosure reduces information asymmetry and lowers the cost of capital, which increases firm value.

4.2.2 *Corporate governance in the Netherlands*

In this section, country-specific aspects of corporate governance and transparency in the Netherlands are described.

Dutch listed firms are legally required to operate under a two-tier board structure consisting of a management board and a supervisory board. The management board is ultimately responsible for achieving the company's objectives, its strategy and policy, and results. The supervisory board is composed of individuals that are "independent" of the company, so-called "outsiders." Such outsiders are usually "professional managers" and it is not uncommon for them to be former management board members. Supervisory board members typically receive a fixed remuneration for their services and very few hold shares in the company.¹⁷

Typically, Dutch managers are shielded from shareholder influence and the threat of hostile takeovers by legal measures. Voogd (1989) provides a very detailed overview of these anti-takeover defences that are or were applied in the Netherlands. Listed firms can have two share types in their capital structure that function as anti-takeover defences. The first share type is the priority share with special voting rights, e.g. in case, the general meeting of shareholders has to vote on a merger or a takeover attempt, if management suggests attracting additional capital by means of a public offering, in case, of alterations to the company charter and company liquidation.¹⁸ The second share type is the "protective preference share;" these should not be mistaken for financial preference shares that have preference only when it comes to dividend payments. Protective preference shares are used when the authorised capital consists of enough preference shares, such that unissued preference shares could be used to dilute the voting rights of the issued shares, and when management according to the articles of association or amendments has discretion over issuing these unissued preference shares in case of a hostile takeover. In the event of a potential hostile takeover, management issues these protective preference shares to a friendly trust office or outside investor. The preference shares are sold at a low nominal value with an obligation to pay only 25% of the amount up front. In addition,

¹⁷ Many Dutch firms have the "structured regime", which is the organizational form that is legally required for Dutch companies with more than 100 employees and a book value of shareholders' equity in excess of 11.4 million euros. The full structured regime results in the supervisory board taking over the following powers from shareholders: 1) establishing and approval of the annual accounts, 2) the election of the management board and 3) the election of the supervisory board itself (called co-optation). The supervisory board also has authority over major decisions made by the management board. Shareholders still vote on the dividend policy and mergers and acquisitions. The most prevalent exception to the full structured regime is Dutch multinationals with more than 50% of their employees outside The Netherlands. Such companies are exempted from the full structured regime. However, at the discretion of the supervisory board and management board, such a company may voluntarily retain the full structured regime referred to as "voluntary structure regime," and it is the case that Dutch multinationals typically do so.

¹⁸ The provisions of Euronext Amsterdam 1997 only allow a company to have two of the three takeover defenses noted above (certificates, priority shares and protective preference shares).

management can provide a loan to the friendly party to cover the amount. Preference shares have relative to their nominal value super voting rights but votes are restricted to a maximum of 50% or 100% of the current outstanding nominal capital depending on the anti-takeover defences in place. Next to these two share types, there is another instrument called 'certificates.' In its articles of association, a firm must allow another party to issue and administer certificates of its shares. A Trust Office (*Stichting Administratiekantoor*) initiates a certification process and subsequently administers the certificates. During the certification process, the firm's ordinary shares are exchanged for certificates. Normally, a trust office is friendly to the firm's management. Although the trust office typically has some board members of the firm on its board, the chairman and majority of the trust office members are required to be outsiders. Holders of certificates only have dividend rights. The trust office holds all voting rights including approval of the dividend policy. These anti-takeover instruments clearly limit the influence of ordinary shareholders and the market for corporate control for Dutch listed firms. As a reaction to this, as of 1997, the provisions of Euronext Amsterdam only allow a company to have two of the above mentioned three anti-takeover defences.

Improvements in corporate governance in the Netherlands are reached in the period of this study predominantly through self-regulation efforts, which started in 1997. A committee on Corporate Governance (also known as Peters Committee) was formed based on an agreement between the Association of Securities Issuing Companies and Euronext Amsterdam in 1996. In 1997, it published a set of 40 recommendations to come to 'codes for best practice' based on a broad consultation among interested parties. The goal was to achieve improved effectiveness of management, supervision and accountability to investors in Dutch listed firms by: 1) self-regulation through transparency and monitoring, and 2) the reliance on self-enforcement through market forces in order to implement and enforce the recommendations. In their annual reports firms report the extent to which they implemented the recommendations. The Monitoring Committee Corporate Governance provided its first report at the end of 1998 and a second evaluation report in 2002. Later in 2003, just after a major accounting scandal involving Ahold, the new Committee Corporate Governance (also known as Tabaksblat Committee) was formed. At the end of 2003, this new committee presented the 'code of best practices.' Also, corporate law was adjusted, requiring all firms to state in their annual reports whether they complied with each of the recommendations, and if not, why. Towards the end of 2004, the newly formed Monitoring Committee Corporate Governance Code published its first monitoring report and continues to do so annually. The 'code of best practices' was revised in 2007 and became effective the beginning of 2008.

Several monitoring analyses have been conducted.¹⁹ De Jong, DeJong, Mertens, and Wasley (2005) examine the Dutch self-regulation efforts, i.e. by comparing the results for the pre-Peters and the post-Peters periods, including the effects of several corporate governance related variables on firm performance (Tobin's Q), the study covered the period 1992-1999.

4.2.3 Financial reporting in the Netherlands

Zeff, van der Wel, and Camfferman (1992) provide an extensive overview of the development of financial reporting in the Netherlands covering the twentieth century. Dutch civil code is based on the French code of law. The development of Dutch financial reporting law was slow. The first law was enacted in 1837, which merely required a *merchant* to prepare an inventory listing and a balance sheet. However, the law did not include publication of this information. The new reporting law of 1928 included the requirement for large and listed firms to publish a balance sheet and an income statement. Meanwhile, in the 1950s, Dutch firms were already voluntarily improving their annual reporting, encouraged by e.g. the Henri Sijthoff Prize (Zeff *et al.*, 1992).²⁰ Since 1971, the law on external financial reporting (*Wet op de Jaarrekening van Ondernemingen*) provides both strict guidelines and aspects that allow for discretion.

In 1973 the International Accounting Standards Committee (IASC) was founded to develop international accounting standards. In 1976, the section on legal persons in the civil code (Book 2) was enacted and included the unchanged 1971 law on external reporting. In addition to law, Dutch reporting is also based on jurisprudence and on guidelines for annual reporting (*Richtlijnen voor de Jaarverslaggeving*). The jurisprudence originates from the *Ondernemerskamer* a special chamber which is part of the court of Amsterdam. Stakeholders can address the *Ondernemerskamer* in case they feel that the annual reporting laws were violated. However, the *Ondernemerskamer* will not investigate on their own initiative. The Dutch Council for Annual Reporting (*Raad voor de Jaarverslaggeving*, or RJ) is an executive body, which is responsible for drafting and publishing guidelines for annual reporting. It consists of preparers (i.e. employers' organizations), users (trade union federations) and auditors (the Dutch Institute of Accountants, or NIVRA) of financial reports. The guidelines by The Dutch Council for Annual Reporting are typically translations of the International Accounting Standards (IAS) as developed by the IASC. Even though these guidelines of the Dutch Council for Annual Reporting are recommendations and not legally binding, they are considered to be references for auditors when auditing financial reporting and applied by courts when considering a verdict. The IASC was succeeded by the International Accounting Standards

¹⁹ The website of the Monitoring Committee Corporate Governance Code contains the documents and reports of the earlier committees, and includes an English language version of most documents and reports (<http://www.commissiecorporategovernance.nl>).

²⁰ The Henri Sijthoff Prize was initiated in 1954 by the publisher of *Het Financieele Dagblad*.

Board (IASB) in 2001. The IASB continues the work of the IASC, i.e. by developing international accounting standards which are the International Financial Reporting Standards.

As of 2005, all listed firms in the European Union must apply International Financial Reporting Standards. Ernst & Young (2006, 2013) show that the accounting standards for Dutch listed firms are considerably stricter under IFRS. The reports cover the period from 2002 to 2013. They count the number of items that are stricter according to IFRS or stricter according to Dutch law and regulation. They find that IFRS is stricter moving from 126 to 241 items, and Dutch laws and regulations are stricter moving from 48 to 111 items. Clearly, IFRS has reduced the discretion of management when it comes to disclosing firm information.

We observe that reporting and the related accounting standards are typically improving over time, either because of new insights or as a means to reduce discretion which previously led to misrepresentation or opportunity for fraudulent behaviour.

4.3 Research Design

4.3.1 Introduction

The purpose of this study is twofold. Firstly, we document the relation between corporate governance characteristics and transparency. Secondly, we examine the relation between transparency and future firm performance. For both purposes, we also investigate the effect of IFRS by comparing the pre-IFRS (1997-2003) and the post-IFRS (2005-2007) periods.

We first investigate the development of reporting transparency based on annual reports of Dutch non-financial listed firms, and secondly analyse the relation between corporate governance and reporting transparency. We do this especially by comparing the pre-IFRS period and the post-IFRS period, i.e. after IFRS implementation. Finally, we focus on the effect that reporting transparency has on future firm performance. Next, the sample and data collection (4.3.2) are described, followed by a description of the variables (4.3.3) and our statistical approach (4.3.4).

4.3.2 Sample and data

Our sample contains all non-financial firms listed on Euronext Amsterdam in the period 1996 to 2007. We exclude financial firms because of their regulatory structure. The number of listed non-financial firms are not constant each year, due to IPOs, takeovers, and de-listings. We impose no requirements on our sample other than caused by our variable definitions. Our variable definitions require lagged data (t-3) and future data (t+4),

which implies that we cover data from 1994 to 2011. The final sample contains 193 firms with 654 firm-year observations.

The firm-specific disclosure variables are measured by reading each company's annual report for the uneven years 1997-2007. Financial data is obtained from Statistics Netherlands (*Centraal Bureau voor de Statistiek*) and the Review and Analysis of the Companies in Holland (REACH) dataset. The number of analysts following a company is obtained from I/B/E/S. We use annual reports to identify board members and to obtain information missing from Statistics Netherlands and REACH. Data on ownership structure is obtained from the leading Dutch financial daily newspaper (*Het Financieele Dagblad*) that annually publishes a list of exchange-listed firms and their stakeholders (in accordance with the notifications for The Law on Disclosure of Shareholdings, *Wet Melding Zeggenschap*). Information about takeover defences and cross-listings are from the yearly overviews of all securities listed at Euronext Amsterdam (*Gids bij de Officiële Prijscourant van de Amsterdamse Effectenbeurs*).

4.3.3 Variable definitions

In this section definitions of our variables are provided. The types of variables we apply relate to transparency, performance, corporate governance characteristics and other variables. We focus on the transparency measures. The remaining variables require less explanation because these are commonly applied. Table 4.1 lists the variables used in our empirical tests along with the definitions and abbreviations used to refer to them in the text and later tables.

We apply indices to measure transparency. There are different ways to measure transparency. We focus on transparency measures based on annual reports, one of the traditional opportunities by which managers provide information about the firm to their providers of capital and other stakeholders. In this study, we contribute to the field of studies that apply indices to measure transparency in the tradition of CIFAR (Center for International Financial Analysis & Research, 1995; Botosan and Plumlee, 2002; Camfferman and Cooke, 2002; Botosan, Plumlee, and Xie, 2004). We adopt a similar approach as applied by Hoogendoorn and Mertens (2001). Our selection of disclosure items starts with the 85 items in the CIFAR index for industrial firms in the 1995 issue of CIFAR (Center for International Financial Analysis & Research, 1995). We remove items that show no variation across firms (e.g. presence of balance sheet, total assets, end of book year) and items related to pension costs. Next, we include the most relevant items according to participating analysts in the Limperg study by Hoogendoorn and Mertens.²¹

²¹ In 2001 the Limperg Institute (a joint research effort by the Royal NIVRA - the equivalent of the AICPA- and five Dutch universities) published a study by Hoogendoorn and Mertens on the quality of financial reporting in the Netherlands. The study was based on detailed questionnaires, containing over 1,812 disclosure items (of which 1,380 items are related to the financial statements), and in-depth interviews with 21 financial analysts in Netherlands and the UK. Based on their disclosure preferences, 583 disclosure items were identified as important items (of which 487 items are related to the financial statements).

Ultimately we have a set of 186 criteria (items). Each of the 186 items is classified under a set of CIFAR index categories, i.e. financial information, per share information, accounting standards information, corporate governance and strategic information, and other.²² For each annual report, we check and code each item based on two questions. Is the item included in the annual report? If so, we code the item as 1, if not, we continue to the second question. Would the item have been applicable to the firm, even though it is not included? If so, we code it 2, if not it is coded 3. Items coded 1 belong to the group of ones, those coded 2 belong to the group of twos, and those coded 3 belong to the group of threes. The items that belong to the ones, twos and threes can vary depending on each annual report. The ones, twos and threes are mutually exclusive.

For each firm in our sample, we check each item in the annual reports of 1997, 1999, 2001, 2003, 2005 and 2007. In Appendix A, we list all items that are included in the different indices grouped per category. Furthermore, we show per item the percentages of ones, twos, and threes. We do this for the full sample, and for the pre-IFRS (1997-2003) and the post-IFRS (2005-2007) period.

We determine two types of indices based on all criteria (items) and per CIFAR index category (excluding the category other information).²³ The first index is Disclosure (Discl), which is calculated as the number of criteria belonging to the ones divided by the sum of the number of criteria belonging to the ones and the twos. The second index is Complexity (Complex), which is calculated as the sum of the number of criteria belonging to the ones and twos divided by the sum of the number of criteria belonging to the ones, twos and threes. The transparency indices used in the empirical tests are overall disclosure (DisclAll, i.e. based on all criteria) and for each of the categories, i.e. disclosure of financial information (DisclFinancial), disclosure of per share information (DisclShares), disclosure of accounting standards information (DisclAccStandards) and disclosure for corporate governance and strategic information (DisclGovStr); and likewise for complexity, i.e. ComplexAll and for each category, i.e. ComplexFinancial, ComplexShares, ComplexityAccStandards and ComplexGovStr.

²² Initially, category corporate governance and strategic information was split-up in two separate categories, i.e. corporate governance information (7 items) and strategic information (5 items). The Netherlands requires that a company discloses its annual results three months after the company's year-end.

²³ Disclosure and complexity for other information have not been included in the analysis because the category only contains 2 items, see also Appendix A. Nevertheless, the items belonging to this category other information are part of DisclAll and ComplexAll.

Table 4.1 Variables and definitions

Variables	Definitions
Transparency measures	
DisclAll	disclosure all information, $\#_{\text{ones}} / (\#_{\text{ones}} + \#_{\text{twos}})$
ComplexAll	complexity all information, $(\#_{\text{ones}} + \#_{\text{twos}}) / (\#_{\text{ones}} + \#_{\text{twos}} + \#_{\text{threes}})$
DisclFinancial	disclosure financial information, $\#_{\text{ones}} / (\#_{\text{ones}} + \#_{\text{twos}})$
ComplexFinancial	complexity financial information, $(\#_{\text{ones}} + \#_{\text{twos}}) / (\#_{\text{ones}} + \#_{\text{twos}} + \#_{\text{threes}})$
DisclShares	disclosure per share information, $\#_{\text{ones}} / (\#_{\text{ones}} + \#_{\text{twos}})$
ComplexShares	complexity per share information, $(\#_{\text{ones}} + \#_{\text{twos}}) / (\#_{\text{ones}} + \#_{\text{twos}} + \#_{\text{threes}})$
DisclAccStandards	disclosure accounting standards information, $\#_{\text{ones}} / (\#_{\text{ones}} + \#_{\text{twos}})$
ComplexAccStandards	complexity accounting standards information, $(\#_{\text{ones}} + \#_{\text{twos}}) / (\#_{\text{ones}} + \#_{\text{twos}} + \#_{\text{threes}})$
DisclGovStr	disclosure corporate governance and strategic information, $\#_{\text{ones}} / (\#_{\text{ones}} + \#_{\text{twos}})$
ComplexGovStr	complexity corporate governance and strategic information, $(\#_{\text{ones}} + \#_{\text{twos}}) / (\#_{\text{ones}} + \#_{\text{twos}} + \#_{\text{threes}})$
Performance, corporate governance and other variables	
Assets	total assets
GrowthAssets	historical assets growth equals $(\text{total assets}_{t-1} - \text{total assets}_{t-3}) / \text{total assets}_{t-3}$
Sales	sales
GrowthSales	historical sales growth equals $(\text{sales}_{t-1} - \text{sales}_{t-3}) / \text{sales}_{t-3}$
TobinQ	Tobin's Q is $(\text{total assets} - \text{shareholders' equity} + \text{market value equity}) / \text{total assets}$
ROA	return on assets equals $\text{operating income} / \text{total assets}$
ROE	return on equity equals $\text{net income} / \text{shareholders' equity}$
Leverage	long-term debt / total assets
BankDebt	long-term bank debt / long-term debt
Tangibility	fixed tangible assets / total assets
dXlistUSUK	cross-listing, if the firm is cross-listed in US or UK then 1, and otherwise 0
dPriorityShares	priority shares, if the firm uses priority shares then 1, otherwise 0
dPreferenceShares	preference shares, if the firm uses preference shares then 1, otherwise 0
dCertification	certification, if the firm uses certification then 1, otherwise 0
C1	share ownership by the largest shareholder ($\geq 5\%$)
CALL	share ownership by all shareholders ($\geq 5\%$)
OwnershipInsiders	share ownership by insiders (%)
OwnershipFinancials	share ownership by financials (%)
OwnershipBanks	share ownership by banks (%)
OwnershipIndustrial	share ownership by industrial firms (%)
dOwnershipInsiders	share ownership by insiders, dummy if so 1, otherwise 0
dOwnershipFinancials	share ownership by financials, dummy if so 1, otherwise 0
dOwnershipBanks	share ownership by banks, dummy if so 1, otherwise 0
dOwnershipIndustrial	share ownership by industrial firms, dummy if so 1, otherwise 0
AnalystsFollowing	average number of analysts following

This table includes the variables included in this study and their definitions. The first column includes for each variable either the name or an abbreviated version. The second column includes the definitions of the variables. The first group of variables are transparency measures disclosure $(\#_{\text{ones}}) / (\#_{\text{ones}} + \#_{\text{twos}})$ and complexity $(\#_{\text{ones}} + \#_{\text{twos}}) / (\#_{\text{ones}} + \#_{\text{twos}} + \#_{\text{threes}})$, i.e. based on all 186 items and for the subgroups financial information (124 items), per share information (33 items), accounting standards information (15 items) and corporate governance and strategic information (12 items). For each annual report, we check and code each of the 186 disclosure criteria (items) based on two questions. Is the criterion (item) included in the annual report? If so, the criterion (items) is coded 1, if not we continue to the following question. Would the criterion (item) have been applicable to the firm, even though it is not included? If so, it is coded 2, if not it is coded 3. Criteria (items) coded 1 belong to the group of ones, those coded 2 belong to the group of twos, and those coded 3 belong to the group of threes. The criteria (items) that belong to the ones, twos and threes can vary depending on each annual report. The ones, twos and threes are mutually exclusive. The second group of variables comprise of firm performance, corporate governance, and control variables. The variables from the second group are lagged by 1 year. All financial variables are based on book values except for Tobin's Q (TobinQ) which is also based on the market value of equity. Dummy variables start with 'd'. Total assets and sales are both in thousands of euros.

The definitions of the performance, corporate governance and other variables are provided in the second part of Table 4.1. The performance variables are Tobin's Q, ROA, ROE, and growth. The first corporate governance set of variables is related to the financing structure of the firm (such as leverage, bank debt and tangibility). The second corporate governance set is related to the formal corporate governance institutions such as cross-listings in UK/US, preference shares, priority shares and certification. The third corporate governance set is concerned with the shareholder capital structure and different owner types (such as shareholdings by largest shareholder, shareholdings by large shareholders, shareholdings by insiders, financials, banks, and industrials). Finally, in this study, we also include outside analysts based on I/B/E/S.

4.3.4 Statistical approach

We present results for the whole period and additional we compare our results from the pre-IFRS and the post-IFRS periods. First, we present a summary of the descriptive statistics and we compare the means for the different periods. We winsorize the determinants at the one percent level to prevent the effect of outliers. Next, we investigate the relationships between corporate governance and corporate transparency, and then the relationship between corporate transparency and future performance. To avoid biased standard errors, we follow the guidance provided by Petersen (2009), i.e. we estimate our models by applying a regression method with firm clustered standard errors and year dummies. The intercept and the year dummies are not reported.

4.4 Results

First, we provide an overview of the descriptive statistics for the full period (4.4.1), and by separating results for the pre-IFRS and the post-IFRS period (4.4.2). Secondly, we discuss the results of the determinants that explain firm transparency for the full period (4.4.3). Then, we focus on the determinants that explain firm transparency by separating the pre-IFRS period and the post-IFRS period (4.4.4). Next, we discuss the question whether transparency can explain future performance (4.4.5). Finally, we focus on whether transparency can explain future performance for the pre-IFRS period and the post-IFRS period (4.4.6).

4.4.1 Summary of descriptive statistics

We provide an overview of the descriptive statistics for the full period for variables that are related to transparency, firm performance and corporate governance. As noted above, to facilitate the discussion of the results, Table 4.1 lists the dependent and independent

variables used in the empirical tests and it defines how each variable is calculated. Table 4.2 reports the summary statistics for the dependent and independent variables used in the empirical tests.

In our sample, the firms have a mean disclosure score of 0.65 for the overall disclosure index (DiscIAll), which implies that on average 65% of the relevant items are disclosed. When comparing the means of the different categories of the overall disclosure index, the results show that these range between 0.58 and 0.74, i.e. in an increasing order the means are for accounting standards information 0.58, for financial information 0.63, for governance and strategic information 0.67, and for per share information 0.74. The overall complexity (ComplexAll) has an average of 0.74, implying that on average 74% of the items is relevant. The order of the categories is somewhat different for complexity when organizing them in increasing order according to the mean, i.e. for accounting standards information 0.60, for per share information 0.71, for governance and strategic information 0.75, and for financial information 0.76.

The performance measures in our study show that the mean value for Tobin's Q is 1.76, for return on assets is 6.8% and return on equity 4.8%. Our growth measure, the three-year historical growth rate of the firm's book value of assets, shows a mean of 36.7%. Overall we can conclude that the average Dutch firm is able to achieve a positive return on its business activities, and it provides its shareholders with positive a return on their invested amount. Also, market participants can be assumed to have positive expectations with respect to future growth opportunities.

The average firm in our sample has an asset size worth €1,673 million, and it generates sales of €1,988 million. The typical sample of Dutch firms shows some skewness for asset size and sales, i.e. median values are €254 million respectively €365 million, because there are some relatively large firms. The firms have experienced considerable past growth in both asset size and sales. Firms have a mean long-term debt relative to total assets of 13.2%, of which long-term bank debt is 38.8% (median 8.8%). The tangibility of the average firm is 27.3% (median 24.1%).

When we investigate the variables related to the formal corporate governance institutions we observe on average that 17.6% of the firms have a cross-listing in the UK or the US, 33.9% have priority shares, 67.3% have preference shares, 24.6% have issued certificates for their shares. When we investigate the ownership concentration for the average firm, we find that shareholdings by the largest shareholder owning more than 5% are 23.3%, shareholdings owned by all large shareholders are 46.4%. We also need to understand who these large shareholders are. 21.4% of the firms have large shareholders that are insiders and their combined shareholdings are 7.6%. 65.6% of the firms have large financial shareholders, which in total own 12.8%. In 51.4% of the firms, banks are large shareholders, owning in total 7.2%. 22.2% of the firms are owned by large industrial shareholders and together these own 5.8%.

Table 4.2 Summary statistics

	Full period (1997-2007)					
	mean	sd	25%	median	75%	N
<i>Transparency measures</i>						
DisclAll	0.654	0.112	0.578	0.649	0.730	654
ComplexAll	0.740	0.100	0.672	0.747	0.812	654
DisclFinancial	0.633	0.116	0.544	0.632	0.716	654
ComplexFinancial	0.760	0.104	0.694	0.766	0.831	654
DisclShares	0.740	0.144	0.667	0.760	0.833	654
ComplexShares	0.712	0.118	0.636	0.727	0.788	654
DisclAccStandards	0.582	0.242	0.400	0.600	0.750	654
ComplexAccStandards	0.598	0.202	0.467	0.600	0.733	654
DisclGovStr	0.668	0.225	0.500	0.667	0.857	654
ComplexGovStr	0.754	0.145	0.667	0.750	0.833	654
<i>Performance, corporate governance and other variables</i>						
Assets	1,672,945	4,335,136	49,672	254,281	1,042,573	654
GrowthAssets	0.367	0.825	-0.038	0.162	0.459	640
Sales	1,987,524	4,750,215	71,930	364,679	1,664,546	654
GrowthSales	0.302	0.749	-0.025	0.156	0.413	640
TobinQ	1.757	1.232	1.080	1.356	1.938	654
ROA	0.068	0.128	0.038	0.086	0.124	654
ROE	0.048	0.612	0.059	0.144	0.222	654
Leverage	0.132	0.126	0.015	0.107	0.212	654
BankDebt	0.388	0.430	0.000	0.088	0.883	654
Tangibility	0.273	0.192	0.115	0.241	0.412	654
dXlistUSUK	0.176	0.381	0.000	0.000	0.000	654
dPriorityShares	0.339	0.474	0.000	0.000	1.000	654
dPreferenceShares	0.673	0.470	0.000	1.000	1.000	654
dCertification	0.246	0.431	0.000	0.000	0.000	654
C1	0.233	0.204	0.087	0.138	0.380	654
CALL	0.464	0.289	0.223	0.475	0.689	654
OwnershipInsiders	7.565	17.700	0.000	0.000	0.000	654
OwnershipFinancials	12.786	14.451	0.000	6.820	21.110	654
OwnershipBanks	7.184	9.671	0.000	5.020	11.400	654
OwnershipIndustrial	5.832	15.346	0.000	0.000	0.000	654
dOwnershipInsiders	0.214	0.410	0.000	0.000	0.000	654
dOwnershipFinancials	0.656	0.475	0.000	1.000	1.000	654
dOwnershipBanks	0.514	0.500	0.000	1.000	1.000	654
dOwnershipIndustrial	0.222	0.416	0.000	0.000	0.000	654
AnalystsFollowing	11.236	10.676	2.000	8.210	18.000	654

This table contains a summary of the descriptives of Dutch listed firms for the period 1997-2007, this study covers data from 1994 to 2011. The first group of variables are transparency measures, i.e. Disclosure and Complexity. The second group of variables comprises of firm performance, corporate governance, and control variables. The variables from the second group are lagged by 1 year. All financial variables are based on book values except the market value of equity applied in Tobin's Q (TobinQ). Dummy variables start with 'd'. Total assets and sales are both in thousands of euros. For the each variable we report the mean, standard deviation (sd), 25%, median, 75% and the number of observations (N). Variables other than Disclosure and Complexity have been winsorized at 1%. Definitions of the variables are provided in Table 4.1. The total number of observations is 654.

We can assume that the average firm has shareholders that have an incentive to monitor and discipline firms. Furthermore, these can be expected to have the necessary skills to monitor. The average number of analysts following a specific firm is 11.2 analysts.

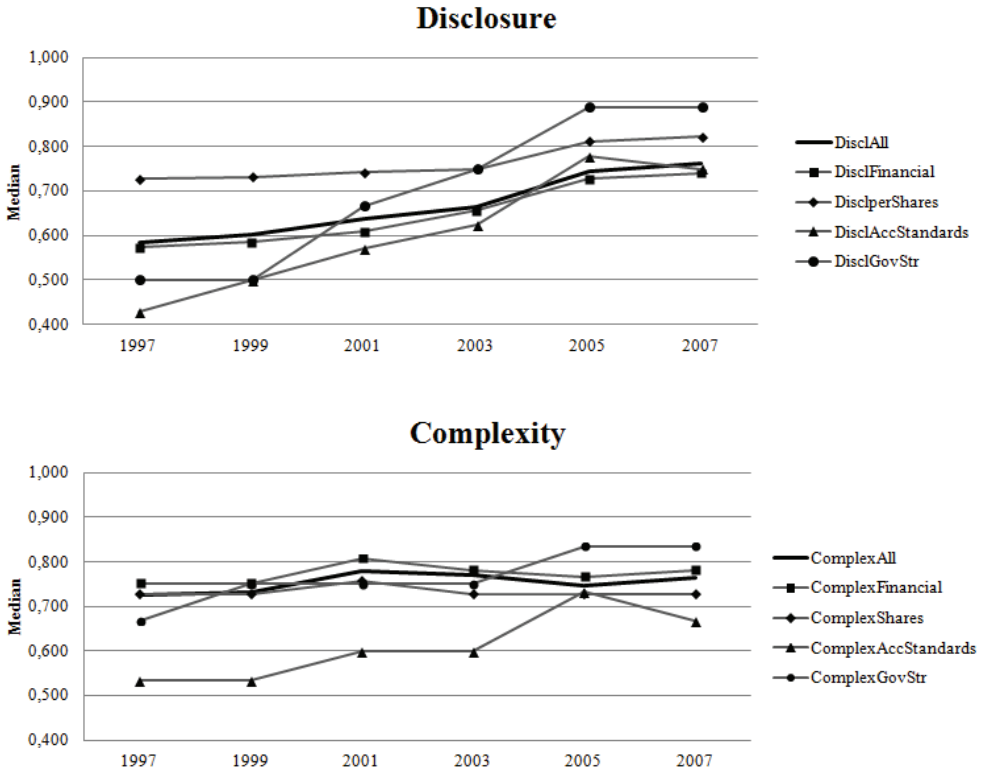
4.4.2 Summary of descriptive statistics: The pre-IFRS and the post-IFRS period

Figure 4.1 is a combined figure, which reports the development of transparency indices over time. The results for disclosure and complexity are split into two separate figures. Each of these includes the overall index for disclosure respectively complexity and the indices of the four categories.

Based on Figure 4.1 we observe that there is a consistent development towards increasing transparency over time for the whole period. We find this development towards increasing transparency for the overall disclosure index, but also for other transparency measures. The transparency measures are increasing consistently over the whole period, with a stronger upward movement between 2003 and 2005. The strong upward shift in disclosure coincides with the moment at which IFRS became mandatory for the firms in our sample, i.e. early adopters in 2004 and finally all firms in 2005. This provides a strong argument for analysing the pre-IFRS and the post-IFRS period separately.

Furthermore, there is convergence in the scores for the categories, i.e. the medians after 2005 have a narrower range than before that period. The general upward movement can be explained on the one hand by the generally increased expectation about continuous improvements in reporting and corporate governance, and on the other hand by events which contribute to shifts. Both are reflected in the transparency of Dutch firms. It can be expected that there is some interrelatedness between the developments in both areas. The events that lead to shifts in the Netherlands with respect to corporate governance are the introduction of the Peters' Committee 'Code of best practice' in 1997, and the renewal of the code in 2004 by the Tabaksblat Committee.

Figure 4.1 Corporate transparency indices: Disclosure and complexity



Next, we provide an overview of the descriptive statistics by separating results for the pre-IFRS and the post-IFRS period. In Table 4.3 we report similar statistics for the pre-IFRS period and the post-IFRS period as are reported Table 4.2. Also, Table 4.3 reports the results of the differences in means for these two periods.

We report for disclosure all index the means for the pre-IFRS and the post-IFRS period 0.62 resp. 0.75 and other statistical measures. The difference between the means is significant at the 1 per cent level and has a t-value of almost 16. When comparing the other means of the different transparency measures for the different periods, we note that they show a higher value in the post-IFRS period compared to the pre-IFRS period, i.e. for all disclosure measures and for at least half of the complexity measures. Clearly, these results show that the transparency has increased and the managerial discretion in disclosing information has been reduced since the introduction of IFRS.

Firm growth is slowing down in the post-IFRS period. The performance measures for the pre-IFRS and the post-IFRS period show that the mean value for Tobin's Q and return on assets decrease from one period to the other period, i.e. from 1.78 to 1.70 and from 7.3% to 5.6%. However, when moving from the pre-IFRS to the post-IFRS period we see an increase in return on equity from 4.7% to 5.2%. None of the performance measures is significantly different when comparing the pre-IFRS and the post-IFRS period. Also, we find that bank debt and ownership concentration for all large shareholders increase, whereas tangibility, priority shares, certification and the average number of analysts following are decreasing.

Table 4.3 Summary of descriptive statistics for the pre- and the post-IFRS period

	Pre-IFRS period (1997-2003)			Post-IFRS period (2005-2007)			Difference in means	
	mean	sd	N	mean	sd	median	75%	p-value
<i>Transparency measures</i>								
DiscrAll	0.617	0.096	467	0.747	0.095	0.684	0.814	0.000
ComplexAll	0.737	0.096	467	0.747	0.108	0.677	0.823	0.291
DiscrFinancial	0.599	0.103	467	0.719	0.101	0.670	0.788	0.000
ComplexFinancial	0.760	0.098	467	0.758	0.117	0.685	0.839	0.837
DiscrShares	0.715	0.140	467	0.804	0.135	0.737	0.913	0.000
ComplexShares	0.713	0.117	467	0.788	0.123	0.606	0.788	0.765
DiscrAccStandards	0.517	0.222	467	0.742	0.213	0.625	0.909	0.000
ComplexAccStandar	0.569	0.190	467	0.671	0.212	0.467	0.800	0.000
DiscrGovStr	0.591	0.206	467	0.862	0.135	0.778	1.000	0.000
ComplexGovStr	0.739	0.139	467	0.791	0.154	0.667	0.917	0.000
<i>Performance, corporate governance and control variables</i>								
Assets	1,546,559	4,185,565	47,013	1,988,57	4,684,78	69,421	380,600	1,583,90
GrowthAssets	0.403	0.823	-0.009	0.486	0.826	0.281	0.078	0.339
Sales	1,858,141	4,576,245	73,381	347,363	5,157,89	71,280	470,303	2,009,08
GrowthSales	0.354	0.745	0.008	0.216	0.480	0.176	0.074	0.242
TobinQ	1.778	1.342	1.048	1.317	1.948	0.901	1.182	1.866
ROA	0.073	0.133	0.045	0.092	0.128	0.056	0.069	0.111
ROE	0.047	0.067	0.069	0.155	0.241	0.052	0.122	0.196
Leverage	0.128	0.127	0.005	0.097	0.208	0.142	0.120	0.223
BankDebt	0.365	0.430	0.000	0.018	0.883	0.465	0.409	0.897
Tangibility	0.287	0.188	0.126	0.259	0.434	0.237	0.185	0.363
dXlistUSUK	0.176	0.381	0.000	0.000	0.000	0.382	0.000	0.000
dPriorityShares	0.360	0.480	0.000	0.000	0.289	0.454	0.000	0.000
dPreferenceShares	0.677	0.468	0.000	1.000	0.000	0.474	0.000	0.000
dCertification	0.285	0.452	0.000	0.000	0.150	0.358	0.000	0.000
CI	0.234	0.208	0.076	0.137	0.399	0.230	0.196	0.099
CALL	0.449	0.288	0.219	0.458	0.656	0.501	0.289	0.242
OwnershipInsiders	7.880	18,590	0.000	0.000	0.000	6.777	15,271	0.000
OwnershipFinancials	12.475	14,299	0.000	6.540	21.110	14.835	0.000	21,220
OwnershipBanks	7.062	9,559	0.000	5.020	11.400	7.488	5.020	11,400
OwnershipIndustrial	5.698	15,024	0.000	0.000	0.000	6.166	0.000	0.000
dOwnershipInsiders	0.212	0.409	0.000	0.000	0.000	0.415	0.000	0.000
dOwnershipFinancial	0.651	0.477	0.000	1.000	1.000	0.472	0.000	1.000
dOwnershipBanks	0.516	0.500	0.000	1.000	1.000	0.508	0.501	0.000
dOwnershipIndustrial	0.214	0.411	0.000	0.000	0.429	0.000	0.000	0.000
AnalystsFollowing	12.921	11,138	3,000	10,250	21,080	8,029	4,750	10,250

This table contains the summary of descriptive statistics for Dutch listed firms for the pre-IFRS period (1997-2003) and the post-IFRS period (2005-2007). The included variables are transparency measures and variables related to firm performance and corporate governance. For the each variable we report the mean, standard deviation (sd), 25%, median, 75% and the number of observations (N). Variables other than Disclosure and Complexity have been winsorized at 1%. Definitions of the variables are provided in Table 4.1. The number of observations for the pre-IFRS period is 467 and 187 for the post-IFRS period.

4.4.3 Explaining transparency by firm performance and corporate governance

We discuss the results of the determinants of corporate transparency for the full period as presented in Table 4.4. To investigate whether firm performance and corporate governance explain corporate transparency in reporting. We estimate several models, in which we consider different perspectives on corporate transparency.

Table 4.4 reports the results for the different models. To investigate the different models we will start with the models (1-6) explaining the overall disclosure index. The first model is the basic model including asset size, firm performance, leverage and tangibility. We find that asset size has a consistent positive relationship with transparency which is significant at the 1 per cent level in all specifications. Firms typically become more complex with size, which could explain that they have more information to disclose, at the same time they are more likely to benefit from the economies of scale from disclosure. Firm performance measured by Tobin's Q has a negative relationship with transparency, which is marginally significant in two models. The other variables, return on assets, leverage and tangibility remain insignificant with respect to the models for the overall disclosure index. The explanatory power of the first model shows an acceptable adjusted R-squared of 0.43, and the following five models do not deviate much from this.

The second and third model investigates the influence of institutional requirements resulting from cross-listing in the US or the UK, the effect of analysts following the firm and the effect of large shareholders in general. Although we would expect that cross-listings in Anglo-Saxon exchanges and analysts following a firm would have a positive relation with transparency, no statistically significant effect is found. Similarly, the concentration of shares in the hands of blockholders does not affect disclosure.

The fourth model focuses on how managers possibly entrench themselves and its effect on transparency. Here we include inside ownership (i.e. large shareholdings by managers or supervisory board members), priority shares, preference shares, and certification. We find that both preference shares and certification have a positive effect on transparency. In particular, the effect of preference shares is consistent and robust. We interpret this result as follows. The capital market may require increased transparency to offset agency problems related to these instruments. In other words, disclosure serves as a disciplinary device, in particular, used by managers with enhanced discretion.

Table 4.4 Explaining transparency by firm performance and corporate governance

	Full period (1997–2007)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	DiscIAll	DiscIAll	DiscIAll	DiscIAll	DiscIAll	DiscIAll	DiscFinancial	DiscShares	DiscAccStand	DiscIAll
InAssets	0.015*** (6.338)	0.011*** (2.877)	0.014*** (5.558)	0.014*** (6.073)	0.015*** (6.038)	0.010*** (2.526)	0.012*** (2.632)	-0.001 (-0.134)	0.012 (1.379)	0.020*** (3.039)
TobinQ	-0.006 (-1.639)	-0.006* (-1.777)	-0.006* (-1.868)	-0.004 (-0.994)	-0.005 (-1.386)	-0.005 (-1.423)	-0.009** (-2.136)	-0.009 (-1.574)	0.031*** (3.870)	0.019*** (3.437)
ROA	0.055 (1.517)	0.049 (1.400)	0.059 (1.582)	0.046 (1.275)	0.053 (1.467)	0.046 (1.247)	0.038 (0.931)	0.182** (2.489)	-0.062 (-0.893)	-0.137** (-2.500)
Leverage	0.052 (1.410)	0.054 (1.454)	0.055 (1.467)	0.052 (1.422)	0.053 (1.419)	0.059 (1.618)	0.068 (1.592)	0.039 (0.641)	0.008 (0.086)	0.075 (1.189)
Tangibility	0.003 (0.114)	0.001 (0.028)	0.007 (0.299)	-0.001 (-0.021)	0.001 (0.057)					
dXlistUSUK		-0.010 (-0.656)								
AnalystsFollowing		0.012 (1.607)				0.009 (1.259)	0.006 (0.749)	0.015 (1.248)	0.016 (1.036)	0.010 (0.857)
CALL			-0.022 (-1.309)			-0.013 (-0.855)	-0.009 (-0.528)	-0.026 (-0.891)	-0.078* (-1.955)	0.020 (0.606)
dOwnershipInsiders				-0.004 (-0.268)						
dPriorityShares				-0.007 (-0.646)						
dPreferenceShares				0.027*** (2.781)		0.025** (2.591)	0.015 (1.393)	0.035* (1.959)	0.091*** (3.607)	0.050*** (2.806)
dCertification				0.017* (1.732)		0.016 (1.600)	0.018 (1.427)	0.030* (1.767)	-0.007 (-0.298)	0.004 (0.175)
BankDebt					-0.001 (-0.061)					
dOwnershipBanks					-0.014 (-1.204)		-0.009 (-0.654)	-0.021 (-1.269)	-0.025 (-0.822)	-0.028 (-1.418)
dOwnershipFinancials					0.027*** (2.100)		0.018 (0.990)	0.037* (1.827)	-0.017 (-0.547)	0.056*** (2.759)
Adjusted R-squared	0.426 654	0.429 654	0.427 654	0.440 654	0.430 654	0.444 654	0.378 654	0.162 654	0.312 654	0.520 654

This table presents the results of the regressions explaining the dependent variables DiscIAll, DiscFinancial, DiscShares, DiscAccStandards (abbreviated to DiscAccStand) and DiscIAll of Dutch listed firms for the period 1997–2007. The explanatory variables are lagged by 1 year. Definitions of the dependent and the explanatory variables are provided in Table 4.1. In addition, InAssets is the natural logarithm of total assets. Explanatory variables are winsorized at 1%. To avoid biased standard errors, we follow the guidance provided by Petersen (2009), i.e. we estimate our models by applying an *ordinary least squares* regression method with firm clustered standard errors and year dummies. The intercept is included in the model but not reported in the table. T-statistics are included in parentheses. Significance levels are denoted as follows: *** p<0.01, ** p<0.05, * p<0.10.

When we investigate the effect of the suppliers of finance in the fifth model, we observe that only the presence of financials ownership has a positive effect on transparency. One could expect large shareholders to impose on firms to be more transparent and disclose more. However, we don't see the same result for large bank shareholders. A possible explanation could be that bank shareholders are also involved in financing the firms by providing debt or by providing accounts for paying and receiving cash. Based on these activities large bank shareholders could obtain information which offsets the bank's need for increased transparency.

The sixth model includes all variables that contributed to explaining corporate transparency, i.e. t-values above unity. In this model, firm size and preference shares both continue to have a significant positive relationship with transparency. The financial structure variables are all insignificant, only leverage shows t-values larger than 1 and a consistent positive sign.

The models seven to ten are based on model six, but investigate the effect of these variables on disclosure of financial information, the disclosure of per share information, the disclosure of accounting standards information and the disclosure of governance and strategic information. The explanatory power of the different models ranges between 0.16 and 0.52. The model that is used to explain the disclosure of financial information shows that asset size has a significant positive relationship and that Tobin's Q has a significant negative relationship with the financial information score. Second, the disclosure of per share information is explained positively and significantly by return on assets, preference shares, certification, and by the identity dummy ownership financials. Third, the disclosure of accounting standards information is explained positively and significantly by Tobin's Q and preference shares, and we find a significantly negative relationship for the shareholdings of large shareholders. The final model shows that asset size, Tobin's Q, preference shares, and the identity dummy ownership financials all have a significant positive effect on disclosure of the governance and strategic information, whereas return on assets has a significantly negative relationship.

Summarizing the above findings we can conclude that the disclosure measures are explained consistently by asset size, preference shares, certification, identity dummy ownership financials i.e. if significant they have a positive sign; firm performance shows mixed signs, and shareholdings of large shareholders have a significantly negative relationship but only for disclosure of accounting information.

4.4.4 Explaining transparency by firm performance and corporate governance: The pre-IFRS period and the post-IFRS period

We focus on the determinants that explain corporate transparency by separating the pre-IFRS period and the post-IFRS period. In Table 4.5 we take the same approach as in section 4.4.3.

Table 4.5 consists of two panels which both report the results for the different models, i.e. Panel A reports the results of the pre-IFRS period and Panel B reports the results of the post-IFRS period. We start with the results of the pre-IFRS period (Panel A). We discuss the models (1-6) explaining the overall disclosure index. The first model is the basic model including asset size, firm performance, leverage and tangibility. We find that asset size has a consistent positive relationship with transparency which is significant at the 1 per cent level in all specifications. Firms typically become more complex with size, which could explain that they have more information to disclose; at the same time they are more likely to benefit from the economies of scale from disclosure. Leverage has a robust significantly positive relationship with the overall disclosure index in the pre-IFRS period. The economic relevance of the effect of leverage on the overall disclosure index can be illustrated by multiplying [1] the change in leverage when moving from the 25%-percentile to the 75%-percentile with [2] the coefficient of leverage to show the effect of leverage on disclosure. First, the change in leverage here leads to a leverage increase of +0.203 (from 0.005 to 0.208). Second, the change will be multiplied by the variable's coefficient of 0.077, which represents an increase of 0.015631 ($+0.208 * 0.077$). This implies that an increase of 1.0% in leverage leads to an increase of +0.077 in disclosure. The other variables, i.e. firm performance and tangibility, remain insignificant with respect to the models for the overall disclosure index. The explanatory power of the first model shows an acceptable adjusted R-squared of 0.33, and the following five models do not deviate much from this.

The second and third model investigate the influence of institutional requirements resulting from cross-listing in the US or the UK, the effect of analysts following the firm and the effect of large shareholders in general. We find the same results as for the full period, i.e. no statistically significant effect is found.

Table 4.5 Explaining transparency by firm performance and corporate governance for the pre- and the post-IFRS period

Panel A	Pre-IFRS period (1997-2003)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	DisclAll	DisclAll	DisclAll	DisclAll	DisclAll	DisclAll	DisclFinancial	DisclShares	DisclAccStand	DisclGovStr
InAssets	0.020*** (7.233)	0.015*** (3.497)	0.019*** (6.499)	0.019*** (7.280)	0.020*** (6.735)	0.013*** (3.135)	0.015*** (2.964)	0.001 (0.077)	0.019* (1.967)	0.024*** (3.089)
TobinQ	-0.004 (-1.016)	-0.004 (-0.997)	-0.004 (-1.271)	-0.002 (-0.455)	-0.002 (-0.544)	-0.003 (-0.738)	-0.006 (-1.511)	-0.005 (-0.896)	0.036*** (4.387)	0.019*** (3.039)
ROA	0.049 (1.311)	0.042 (1.151)	0.056 (1.497)	0.043 (1.192)	0.045 (1.196)	0.044 (1.199)	0.036 (0.845)	0.163** (2.178)	-0.038 (-0.529)	-0.106 (-1.542)
Leverage	0.077* (1.687)	0.080* (1.730)	0.083* (1.766)	0.076* (1.661)	0.073 (1.576)	0.085* (1.889)	0.099* (1.938)	0.041 (0.585)	0.061 (0.566)	0.071 (0.968)
Tangibility	0.009 (0.299)	0.006 (0.224)	0.015 (0.509)	0.005 (0.175)	0.011 (0.347)					
dXlistUSUK		-0.007 (-0.373)								
AnalystsFollowing		0.013 (1.627)				0.010 (1.300)	0.005 (0.579)	0.022 (1.607)	0.022 (1.205)	0.016 (1.214)
CALL			-0.026 (-1.556)			-0.021 (-1.334)	-0.019 (-1.060)	-0.023 (-0.677)	-0.096** (-2.365)	-0.005 (-0.119)
dOwnershipInsiders				-0.007 (-0.552)						
dPriorityShares				-0.017 (-1.580)						
dPreferenceShares				0.031*** (2.940)		0.028*** (2.771)	0.019 (1.632)	0.043** (2.127)	0.091*** (3.459)	0.046** (2.198)
dCertification				0.013 (1.117)		0.013 (1.090)	0.016 (1.080)	0.025 (1.381)	-0.019 (-0.773)	-0.003 (-0.146)
BankDebt					-0.005 (-0.424)					
dOwnershipBanks				0.003 (0.218)		0.001 (0.073)	-0.0001 (-0.010)	-0.002 (-0.122)	0.025 (0.874)	-0.001 (-0.054)
dOwnershipFinancials				0.018 (1.333)		0.009 (0.752)	0.010 (0.648)	0.029 (1.308)	-0.047 (-1.487)	0.043 (1.608)
Adjusted R-squared	0.329 467	0.334 467	0.333 467	0.358 467	0.334 467	0.359 467	0.293 467	0.119 467	0.256 467	0.385 467

Continues ...

Table 4.5 Explaining transparency by firm performance and corporate governance for the pre- and the post-IFRS period (continued)

	Post-IFRS period (2005-2007)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	DisclAll	DisclAll	DisclAll	DisclAll	DisclAll	DisclAll	DisclFinancial	DisclShares	DisclAccStand	DisclGovStr
In-Assets	0.004 (0.697)	-0.002 (-0.265)	0.003 (0.453)	0.004 (0.751)	0.005 (0.910)	-0.002 (-0.282)	-0.001 (-0.079)	-0.006 (-0.570)	-0.011 (-0.690)	0.006 (0.657)
TobinQ	-0.012 (-0.972)	-0.016 (-1.217)	-0.012 (-1.010)	-0.009 (-0.725)	-0.013 (-1.065)	-0.014 (-1.008)	-0.021 (-1.441)	-0.020 (-1.171)	0.019 (0.909)	0.029** (2.408)
ROA	0.092 (1.252)	0.086 (1.165)	0.091 (1.219)	0.082 (1.075)	0.076 (1.113)	0.074 (1.064)	0.073 (1.030)	0.233** (2.040)	-0.104 (-0.738)	-0.217*** (-3.232)
Leverage	-0.005 (-0.080)	-0.008 (-0.143)	-0.006 (-0.110)	-0.007 (-0.116)	0.015 (0.250)	-0.002 (-0.026)	-0.016 (-0.228)	0.039 (0.443)	-0.083 (-0.575)	0.154 (1.467)
Tangibility	-0.021 (-0.542)	-0.023 (-0.598)	-0.018 (-0.449)	-0.019 (-0.482)	-0.036 (-1.074)					
dXlistUSUK		-0.027 (-0.996)								
AnalystsFollowing		0.019 (1.338)				0.015 (1.143)	0.019 (1.363)	0.004 (0.199)	0.016 (0.710)	-0.001 (-0.063)
CALL			-0.018 (-0.540)			-0.002 (-0.075)	0.010 (0.308)	-0.053 (-1.125)	-0.063 (-0.850)	0.069 (1.340)
dOwnershipInsiders				0.005 (0.188)						
dPriorityShares				0.012 (0.546)						
dPreferenceShares				0.013 (0.665)		0.008 (0.397)	-0.004 (-0.185)	0.006 (0.224)	0.077* (1.692)	0.065** (2.387)
dCertification				0.023 (1.212)		0.021 (1.045)	0.023 (1.030)	0.030 (1.105)	0.015 (0.343)	0.017 (0.405)
BankDebt					0.016 (0.882)					
dOwnershipBanks					-0.042* (-1.897)	-0.036 (-1.630)	-0.020 (-0.883)	-0.060** (-1.986)	-0.112* (-1.851)	-0.073** (-2.278)
dOwnershipFinancials					0.036 (1.377)	0.028 (1.012)	0.021 (0.725)	0.052 (1.549)	0.020 (0.319)	0.059** (2.031)
Adjusted R-squared	0.008 187	0.015 187	0.005 187	0.000 187	0.017 187	0.015 187	0.029 187	0.051 187	0.050 187	0.079 187

This table presents the results of the regressions explaining the dependent variables DisclAll, DisclFinancial, DisclShares, DisclAccStandards (abbreviated to DisclAccStand) and DisclGovStr of Dutch listed firms for the pre-IFRS period (1997-2003) and the post-IFRS period (2005-2007). Panel A shows the results for the pre-IFRS period (1997-2003) and Panel B shows the results for the post-IFRS period (2005-2007). The explanatory variables are lagged by 1 year. Definitions of the dependent and the explanatory variables are provided in Table 4.1. In addition, InAssets is the natural logarithm of total assets. Explanatory variables are winsorized at 1%. To avoid biased standard errors, we follow the guidance provided by Petersen (2009), i.e. we estimate our models by applying an *ordinary least squares* regression method with firm clustered standard errors and year dummies. The intercept is included in the model but not reported in the table. T-statistics are included in parentheses. Significance levels are denoted as follows: *** p<0.01, ** p<0.05, * p<0.10.

The fourth model focuses on how managers possibly entrench themselves and its effect on transparency. Here we include the inside ownership (i.e. large shareholdings by managers or supervisory board members), priority shares, preference shares, and certification. We find that only preference shares have a significantly positive effect on transparency. Again, the effect for preference shares is consistent and robust. The economic relevance of the effect of preference shares on the overall disclosure index is that the presence of preference shares leads to an increase of 3.1% in disclosure. We interpret this result as follows. The capital market may require increased transparency to offset agency problems related to these instruments. In other words, disclosure serves as a disciplinary device, in particular, used by managers with enhanced discretion.

When we investigate the effect of the suppliers of finance in the fifth model, we observe that none of the variables, i.e. bank debt, the presence of bank owners, and the presence of financial owners, have a significant effect on transparency. One could expect large shareholders to impose on firms to be more transparent and disclose more. However, we don't see the same result for large bank shareholders. A possible explanation could be that bank shareholders are also involved in financing the firms by providing debt or by providing accounts for paying and receiving cash. Based on these activities large bank shareholders could obtain information which offsets the bank's need for increased transparency.

The sixth model includes all variables that contributed to explaining corporate transparency, i.e. t-values above unity. In this model, firm size, leverage, and preference shares both continue to have a significant positive relationship with transparency. Any other variables are all insignificant, return on assets, analysts following, large shareholders, certification show t-values exceeding unity and all have a consistent sign.

The models seven to ten are based on model six, but investigate the effect of these variables on the disclosure of financial information, the disclosure of per share information, the disclosure of accounting standards information and the disclosure of governance and strategic information. The explanatory power of the different models ranges between 0.12 and 0.39. The model that is used to explain the disclosure of financial information shows that asset size and leverage have a significant positive relationship with the disclosure of financial information. Second, the disclosure of per share information is explained positively and significantly by return on assets and preference shares. Third, the disclosure of accounting standards information is explained positively and significantly by asset size, Tobin's Q and preference shares, and we find a significantly negative relationship for the shareholdings of large shareholders. The final model shows that asset size, Tobin's Q and preference shares have a significant positive effect on disclosure of governance and strategic information. Summarizing the above findings we can conclude that the disclosure measures are explained consistently by asset size, Tobin's Q, leverage and preference shares, i.e. if significant they have a positive sign.

Next, we discuss the results the post-IFRS period (Panel B). We investigate the different models in the same fashion as in Panel A. There is a distinct difference between the two periods. The second period only shows a significant effect on the overall disclosure index in the fifth model where we investigate the effect of the suppliers of finance on overall disclosure. A possible explanation could be that bank shareholders are also involved in financing the firms by providing debt or by providing accounts for paying and receiving cash. Based on these activities large bank shareholders could obtain information which offsets the bank's need for increased transparency.

The models seven to ten are again based on model six, but investigate the effect of these variables on the disclosure of financial information, the disclosure of per share information, the disclosure of accounting standards information and the disclosure of governance and strategic information. The explanatory power of the different models ranges between 0.03 and 0.08. The model that is used to explain the disclosure of financial information shows that none of the variables has a relationship with the disclosure of financial information. Second, the disclosure of per share information is explained positively and significantly by return on assets but is explained negatively and significantly by the presence of bank owners. If firms are more profitable, they are more likely to be willing to share the positive information by increasing their disclosure. Again, similar findings for bank owners, we assume the same reasoning here. Third, the disclosure of accounting standards information is explained positively and significantly by preference shares, and we find a significantly negative effect of the presence of bank owners. The final model shows that mixed results for firm performance, i.e. Tobin's Q has a positive and significant whereas return on assets has a significantly negative relationship with disclosure governance and strategic information. Preference shares have a significant positive effect on disclosure. Consistently with earlier models of this period, the presence of bank owners has a significant and negative effect on disclosure but the presence of financial owners has a significantly positive effect on disclosure. It could be argued that bankers do not require additional information to be disclosed as was explained before. Financial owners may be somewhat more distant to the firm compared to bankers. Therefore, they do prefer more governance and strategy disclosure.

Summarizing the above findings we can conclude that the presence of bank and financial owners seem more important for the level of disclosure in the post-IFRS period than they were in the pre-IFRS period.

4.4.5 Can transparency explain future performance?

We investigate whether overall transparency can explain future performance. It is a fundamental question, whether a reduction in information asymmetry leads to higher actual future firm performance. To investigate future firm performance, we have chosen three measures to disentangle different performance measures. In Table 4.6 we report the

results for three future performance measures, i.e. Tobin's Q, return on assets, and assets growth for future years, i.e. $t+1$, $t+2$, $t+3$ and $t+4$.

Tobin's Q measures the firm's performance in terms of market value to book value, which combines both current year's performance and the expected future performance. Return on assets measures current performance, and asset growth indicates the actual growth in the firm's assets.

As a first step, we take a descriptive approach. We create quintiles based on overall transparency, DisclAll. For each quintile, we report the mean for DisclAll and for the future performance measures. Based on the reported means for DisclAll we can see that quintile 1 represents the observations with the lowest mean for DisclAll and quintile 5 represents the observations with the highest mean for DisclAll.

For Tobin's Q we observe a decrease in value when moving from lower quintiles to higher quintiles, which remains consistent for different future years ($t+1$ to $t+4$). Tobin's Q incorporates current performance and expected future performance, i.e. also beyond the future years as mentioned above. It seems that by disclosing more, market expectations about future performance become lower while investors are better informed. When firms disclose less, the market seems to expect a higher return for the risk they bear. The mean values of the other future performance measures do not show a distinct direction across quintiles. The result we see for Tobin's Q after increasing disclosure is counterintuitive when comparing these results to our earlier reasoning in section 4.2.1. Based on the reasoning in 4.2.1 we would expect that by increasing disclosure we should reduce agency costs or reduce information risk, which should both lead to an increase in firm value. Instead, the relation between disclosure and Tobin's Q is in line with another potential and plausible explanation as provided by Miller (1977).²⁴ The firms' disclosure allows investors to assess firm value better and to remove optimistic judgement from the prices, i.e. the argument that divergences in opinion on firm prospects lead to higher prices. The exception to this effect is information on accounting standards, which has a positive value effect.

²⁴ See also Diether, Malloy, and Scherbina (2002).

Table 4.6 Transparency explaining future performance: Average future performance per quintile of DisclAll

		Full period (1997-2007 → 1998-2011)													
Quintiles:	DisclAll	TobinQ _{t-1}	TobinQ _{t-2}	TobinQ _{t-3}	TobinQ _{t-4}	ROA _{t-1}	ROA _{t-2}	ROA _{t-3}	ROA _{t-4}	Growth Assets _{t-1}	Growth Assets _{t-2}	Growth Assets _{t-3}	Growth Assets _{t-4}		
1	mean	1.904	2.028	2.056	1.903	0.050	0.047	0.021	0.046	0.237	0.240	0.361	0.222		
	N	134	117	109	99	127	122	118	110	127	120	118	108		
2	mean	0.592	1.579	1.493	1.549	0.060	0.059	0.045	0.043	0.332	0.315	0.379	0.242		
	N	128	115	107	98	122	118	115	109	122	118	114	108		
3	mean	0.650	1.577	1.605	1.431	0.065	0.045	0.028	0.033	0.444	0.275	0.192	0.136		
	N	132	114	110	103	125	118	115	109	125	118	115	107		
4	mean	0.716	1.428	1.384	1.433	0.046	0.047	0.047	0.049	0.203	0.203	0.276	0.192		
	N	130	115	108	97	123	117	115	103	123	116	115	103		
5	mean	0.813	1.403	1.431	1.440	0.060	0.053	0.049	0.046	0.343	0.271	0.307	0.090		
	N	130	115	110	101	122	118	115	106	122	118	115	106		

This table presents means for DisclAll and the future performance variables (TobinQ_{t-1}, TobinQ_{t-2}, TobinQ_{t-3}, TobinQ_{t-4}, ROA_{t-1}, ROA_{t-2}, ROA_{t-3}, ROA_{t-4}, GrowthAssets_{t-1}, GrowthAssets_{t-2}, GrowthAssets_{t-3}, GrowthAssets_{t-4}) of Dutch listed firms for the period 1997-2007, grouped by quintiles based on DisclAll. Definitions of the variables are provided in Table 4.1. The future performance variables are winsorized at 1%.

Next, in Table 4.7 we investigate the effect of different transparency measures on actual future performance based on regression analysis. In the first row, we report the results for *DisclAll*, i.e. we include the coefficient, the robust *t*-statistic and the number of observations. In the subsequent rows, we report the results for other transparency measures.

The regression models for Tobin's *Q* show a significant negative relationship between *DisclAll* and Tobin's *Q*, whereas the regression models for return on assets show a significant positive relationship with *DisclAll*. The results for in the regression models for asset growth show a negative relationship. This indicates that by increasing transparency, firms will report higher returns on assets while keeping firm size relatively stable. However, increased transparency seems to result in lower expected future growth, especially when moving further into the future.

This result could be anticipated because, by increasing transparency, management reduces the information asymmetry about the firm's future potential. This can lead to the following two outcomes:

Firstly, shareholders will have a better understanding of the expected future growth. They will be more realistic in their valuation, which should reduce the overvaluation of firm value.

Secondly, given that annual reports become public information, this information is also shared with competitors and other stakeholders of the firm. Competitors will use any information to their advantage when preparing their strategy and decisions; also other (aware) stakeholders will while negotiating terms with management try to secure part of the expected future performance ahead of future realisation.

We also report the results for the Score results for the breakdown into the different information types. Both disclosure of financial information (*DisclFinancial*) and disclosure of per share information (*DisclShares*) show similar results as overall disclosure (*DisclAll*). Disclosure of accounting standards information (*DisclAccStandards*) has a positive relationship with Tobin's *Q* and on assets growth for $t+1$. Increased disclosure on accounting standards information has a positive effect on potential future value. Disclosure of governance and strategic information (*DisclGovStr*) has no significant relationship with any of the future performance measures.

As a final step, we focus on whether transparency can explain future performance for the pre-IFRS period and the post-IFRS period. In Table 4.8 we investigate the differences between the pre-IFRS and the post-IFRS period. Panel A reports the results for the pre-IFRS period and Panel B reports the results for the post-IFRS period.

Table 4.7 Transparency explaining future performance

	Full period (1997-2007 → 1998-2011)											
	TobinQ _{t-1}	TobinQ _{t-2}	TobinQ _{t-3}	TobinQ _{t-4}	ROA _{t+1}	ROA _{t+2}	ROA _{t+3}	ROA _{t+4}	Growth Assets _{t-1}	Growth Assets _{t-2}	Growth Assets _{t-3}	Growth Assets _{t-4}
DiscrAll	-1.552*** (-2.894)	-2.296*** (-3.510)	-2.297*** (-3.021)	-1.900*** (-2.589)	0.145* (1.937)	0.086 (1.218)	0.194* (1.829)	0.036 (0.419)	0.424 (1.230)	-0.072 (-0.264)	-0.410 (-0.816)	-0.590* (-1.773)
N	615	576	544	498	619	593	578	537	619	590	577	532
DiscrFinancial	-1.702*** (-3.271)	-2.263*** (-3.662)	-2.215*** (-3.046)	-1.687*** (-2.709)	0.100 (1.443)	0.054 (0.741)	0.144 (1.401)	-0.018 (-0.224)	0.094 (0.294)	-0.243 (-0.925)	-0.392 (-0.900)	-0.642*** (-2.239)
N	615	576	544	498	619	593	578	537	619	590	577	532
DiscrShares	-0.817** (-2.088)	-1.522*** (-2.657)	-1.431** (-2.500)	-1.542*** (-2.673)	0.154*** (2.813)	0.111** (2.150)	0.179*** (2.486)	0.146** (2.243)	0.348 (1.562)	0.171 (0.911)	-0.003 (-0.008)	-0.106 (-0.428)
N	615	576	544	498	619	593	578	537	619	590	577	532
DiscrAccStand	0.605*** (2.776)	0.657*** (2.302)	0.297 (1.177)	0.423*** (2.211)	0.023 (0.861)	0.017 (0.614)	0.027 (0.753)	-0.003 (-0.107)	0.477*** (4.121)	0.171 (1.483)	-0.020 (-0.097)	0.030 (0.237)
N	615	576	544	498	619	593	578	537	619	590	577	532
DiscrGovStr	-0.103 (-0.409)	-0.290 (-0.853)	-0.039 (-0.119)	-0.352 (-0.658)	0.001 (0.030)	-0.010 (-0.266)	-0.028 (-0.717)	-0.010 (-0.239)	0.238 (1.427)	-0.004 (-0.025)	-0.390 (-1.562)	-0.058 (-0.350)
N	615	576	544	498	619	593	578	537	619	590	577	532

This table presents the results of the regressions explaining the dependent variables future performance (TobinQ_{t+1}, TobinQ_{t+2}, TobinQ_{t+3}, TobinQ_{t+4}, ROA_{t+1}, ROA_{t+2}, ROA_{t+3}, ROA_{t+4}, GrowthAssets_{t+1}, GrowthAssets_{t+2}, GrowthAssets_{t+3}, GrowthAssets_{t+4}) of Dutch listed firms for the period 1997-2007. The models include as explanatory variables DiscrAll, DiscrFinancial, DiscrShares, DiscrAccStandards (abbreviated to DiscrAccStand) and DiscrGovStr. Definitions of the dependent and the explanatory variables are provided in Table 4.1. To avoid biased standard errors, we follow the guidance provided by Petersen (2009), i.e. we estimate our models by applying an *ordinary least squares* regression method with firm clustered standard errors and year dummies. The intercept is included in the model but not reported in the table. T-statistics are included in parentheses. Significance levels are denoted as follows: *** p<0.01, ** p<0.05, * p<0.10.

Table 4.8 Transparency explaining future performance for the pre-IFRS period and the post-IFRS period

Pre-IFRS period (1997-2003 → 1998-2007)												
	TobinQ _{t-1}	TobinQ _{t-2}	TobinQ _{t-3}	TobinQ _{t-4}	ROA _{t-1}	ROA _{t-2}	ROA _{t-3}	ROA _{t-4}	Growth Assets _{t-1}	Growth Assets _{t-2}	Growth Assets _{t-3}	Growth Assets _{t-4}
DiscIAll	-1.621*** (-2.722)	-2.387*** (-3.017)	-2.533*** (-2.595)	-2.454*** (-3.356)	0.127 (1.556)	0.101 (1.305)	0.183 (1.444)	0.066 (0.651)	0.118 (0.301)	-0.314 (-0.918)	-0.583 (-1.242)	-0.528 (-1.242)
N	446	414	393	360	449	426	416	390	449	423	415	386
DiscIFinancial	-1.816*** (-3.102)	-2.378*** (-3.136)	-2.483*** (-2.706)	-2.283*** (-3.389)	0.073 (1.009)	0.049 (0.643)	0.114 (0.937)	-0.011 (-0.129)	-0.170 (-0.476)	-0.416 (-1.341)	-0.753* (-1.740)	-0.665* (-1.840)
N	446	414	393	360	449	426	416	390	449	423	415	386
DiscIShares	-0.886** (-2.183)	-1.588** (-2.405)	-1.618** (-2.449)	-1.649** (-2.885)	0.160** (2.524)	0.138** (2.431)	0.208** (2.514)	0.179** (2.409)	0.288 (1.145)	0.121 (0.522)	-0.072 (-0.216)	0.020 (0.065)
N	446	414	393	360	449	426	416	390	449	423	415	386
DiscIAccStand	0.816*** (2.893)	0.865** (2.225)	0.563* (1.773)	0.430* (1.833)	0.026 (0.904)	0.025 (0.779)	0.015 (0.403)	-0.010 (-0.310)	0.439*** (3.942)	0.184 (1.613)	0.278* (1.899)	0.136 (0.976)
N	446	414	393	360	449	426	416	390	449	423	415	386
DiscGovStr	0.077 (0.311)	-0.036 (-0.104)	0.249 (0.917)	0.114 (0.366)	0.004 (-0.123)	0.012 (0.335)	-0.020 (-0.589)	0.018 (0.450)	0.124 (0.710)	-0.136 (-0.884)	-0.131 (-0.673)	0.0003 (0.002)
N	446	414	393	360	449	426	416	390	449	423	415	386

Panel B

Post-IFRS period (2005-2007 → 2008-2011)												
	TobinQ _{t-1}	TobinQ _{t-2}	TobinQ _{t-3}	TobinQ _{t-4}	ROA _{t-1}	ROA _{t-2}	ROA _{t-3}	ROA _{t-4}	Growth Assets _{t-1}	Growth Assets _{t-2}	Growth Assets _{t-3}	Growth Assets _{t-4}
DiscIAll	-1.383 (-1.249)	-2.088* (-1.732)	-1.756 (-1.548)	-0.797 (-0.466)	0.192 (1.640)	0.052 (0.427)	0.221 (1.307)	-0.024 (-0.181)	1.185* (1.671)	0.490 (1.188)	0.009 (0.007)	-0.716 (-1.325)
N	169	162	151	138	170	167	162	147	170	167	162	146
DiscIFinancial	-1.407 (-1.352)	-1.980* (-1.823)	-1.549 (-1.427)	-0.393 (-0.314)	0.170 (1.530)	0.066 (0.558)	0.219 (1.396)	-0.034 (-0.276)	0.782 (1.145)	0.186 (0.445)	0.506 (0.401)	-0.593 (-1.139)
N	169	162	151	138	170	167	162	147	170	167	162	146
DiscIShares	-0.630 (-0.795)	-1.359 (-1.486)	-0.908 (-0.958)	-1.246 (-0.914)	0.136* (1.880)	0.039 (0.497)	0.091 (0.902)	0.051 (0.568)	0.513 (1.032)	0.301 (0.815)	0.206 (0.259)	-0.462 (-1.243)
N	169	162	151	138	170	167	162	147	170	167	162	146
DiscIAccStand	0.057 (0.273)	0.147 (0.719)	-0.320 (-0.735)	0.014 (1.116)	0.014 (0.299)	-0.004 (-0.115)	0.058 (0.775)	0.016 (0.394)	0.579** (2.000)	0.140 (0.527)	-0.753 (-1.312)	-0.241 (-0.964)
N	169	162	151	138	170	167	162	147	170	167	162	146
DiscGovStr	-0.959 (-1.183)	-1.398 (-1.544)	-1.285 (-1.139)	-2.462 (-0.970)	0.026 (0.352)	-0.109 (-1.374)	-0.062 (-0.614)	-0.140 (-1.510)	0.770* (1.665)	0.580 (1.559)	-1.564 (-1.439)	-0.331 (-0.725)
N	169	162	151	138	170	167	162	147	170	167	162	146

This table presents the results of the OLS regressions explaining the dependent variables future performance (TobinQ_{t+1}, TobinQ_{t+2}, TobinQ_{t+3}, TobinQ_{t+4}, ROA_{t+1}, ROA_{t+2}, ROA_{t+3}, ROA_{t+4}, GrowthAssets_{t+1}, GrowthAssets_{t+2}, GrowthAssets_{t+3}, GrowthAssets_{t+4}) of Dutch listed firms for the pre-IFRS period (1997-2003) and the post-IFRS period (2005-2007). Panel A shows the results for the pre-IFRS period (1997-2003) and Panel B shows the results for the post-IFRS period (2005-2007). The models include as explanatory variables DiscIAll, DiscIFinancial, DiscIShares, DiscIAccStand(abbreviated to DiscIAccStand) and DiscGovStr. Definitions of the dependent and the explanatory variables are provided in Table 4.1. To avoid biased standard errors, we follow the guidance provided by Petersen (2009), i.e. we estimate our models by applying an *ordinary least squares* regression method with firm clustered standard errors and year dummies. The intercept is included in the model but not reported in the table. T-statistics are included in parentheses. Significance levels are denoted as follows: *** p<0.01, ** p<0.05, * p<0.10.

When comparing the reported results for Panel A and Panel B, we see that transparency was more important to explain future performance in the pre-IFRS period, than in the post-IFRS period. Furthermore, Panel A of Table 4.8 has a close resemblance to Table 4.7. The results in Panel B show less significance but the directions of the coefficients are overall the same as in Panel A.

The increased transparency since IFRS seems to result in a higher level of transparency for all firms. This seems to reduce the effect of transparency in explaining future performance. These results are in line with the findings in Table 4.5.

4.5 Conclusions

This chapter has investigated the development of reporting transparency based on annual reports of Dutch non-financial listed firms. Then it analysed the relationship between corporate governance and reporting transparency. We do this especially by comparing the pre-IFRS period (1997-2003) and the post-IFRS period (2005-2007), i.e. before and after the implementation of IFRS. Finally, we focused on the effect that reporting transparency has on future firm performance.

The main findings of this study are that the number of items disclosed in annual reports has increased over the period 1997-2007. In particular, after the introduction of IFRS, we observe a strong increase in transparency. Next, we investigated the relationship between transparency and corporate governance. In the period before IFRS, we find that disclosure is mainly driven by firm size and leverage. Large and highly levered firms are more inclined to disclose items in their annual report. Interestingly, firms that are shielded against a hostile takeover with preference shares also have higher disclosure scores. This indicates that the lack of disciplining in the market for corporate control is compensated by additional disclosure. After the introduction of IFRS, we find much lower variation in disclosure practices, leaving less for the antecedents of disclosure to explain. Still, some interesting results emerge. For example, bank ownership reduces transparency, potentially, because banks do not rely on annual report information when they serve as a firm's house bank. The effect of preferred shares is in the post-IFRS period only applicable to items on accounting standards, governance and strategy. Finally, we investigated the performance consequences of disclosure. Here, the pre-IFRS periods yields systematically different results, when compared to the years after the introduction of IFRS. Before 2004 firms have much more discretion in their disclosure policies. We also find that higher disclosure is followed by lower Tobin's Q's, an effect that lasts, at least, four years. This may imply that firms' disclosure allows investors to assess firm value better and to remove optimistic judgement from the prices. This finding is in line with Miller's (1977) argument that divergences in opinion on firm prospects lead to higher prices. The exception to this effect

is information on accounting standards, which has a positive value effect. Clearly, accounting standard information serves as a valuable governance device. After the introduction of IFRS, we find no systematic effects of transparency on performance.

We see several limitations to our approach. First, the measure of disclosure is based on the number of items, which are unweighted, while readers of annual reports may attach more value to specific items. Of course, for several topics in the reports multiple items are included, which yields a weighting based on the number of related items. Although we distinguish four groups of items, in future research a more fine-grained distinction may yield additional insights. Second, our measure does not measure the quality of the items reported, but merely the presence in the report. For example, in many other studies, attention is paid to the quality of earnings. Finally, our measure is based on annual reports, while firms disclose information also via other channels, including press releases, analyst calls, executive manager speeches, etc. A challenge for further research is to study the interactions between disclosure channels.

Appendix A Disclosure criteria

Item description	Full period (1997-2007)			Pre-IFRS period (1997-2003)			Post-IFRS period (2005-2007)		
	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)
<i>Financial information items</i>									
Internal sales	24.0	10.4	65.6	11.6	11.6	76.9	55.1	7.5	37.4
Results (. segmented)	42.0	41.9	16.1	36.4	47.1	16.5	56.1	28.9	15.0
Investments	35.2	49.2	15.6	27.0	56.7	16.3	55.6	30.5	13.9
Depreciation	32.7	51.8	15.4	24.4	59.3	16.3	53.5	33.2	13.4
Results (geographically segmented)	21.4	70.0	8.6	17.3	74.7	7.9	31.6	58.3	10.2
List of the names and the percentages of the shares held of the most important group companies	83.2	15.9	0.9	81.8	17.6	0.6	86.6	11.8	1.6
Effect of changes in the consolidation on sales	14.8	53.8	31.3	12.2	58.0	29.8	21.4	43.3	35.3
Sales (functional income statement)	37.0	0.0	63.0	34.9	0.0	65.1	42.2	0.0	57.8
Cost of sales (functional income statement)	36.4	0.5	63.1	34.5	0.4	65.1	41.2	0.5	58.3
Selling expenses (functional income statement)	28.3	7.8	63.9	26.1	7.9	66.0	33.7	7.5	58.8
General and administrative expenses (functional income statement)	28.6	8.4	63.0	26.3	8.6	65.1	34.2	8.0	57.8
Operating income (functional income statement)	37.0	0.2	62.8	35.1	0.0	64.9	41.7	0.5	57.8
Sales (categorical income statement)	63.1	0.5	36.4	64.5	0.6	34.9	59.9	0.0	40.1
Changes in work of progress (categorical income statement)	36.9	17.3	45.9	38.1	16.9	45.0	33.7	18.2	48.1
Costs of material (categorical income statement)	42.2	14.5	43.3	41.1	16.5	42.4	44.9	9.6	45.5
External costs (categorical income statement)	28.3	31.5	40.2	30.4	33.8	35.8	23.0	25.7	51.3
Wages, salaries, pension, and social security costs (categorical income statement)	61.6	1.8	36.5	63.4	1.5	35.1	57.2	2.7	40.1
Depreciation and amortization (categorical income statement)	62.7	0.9	36.4	64.0	1.1	34.9	59.4	0.5	40.1
Operating income (categorical income statement)	63.0	0.6	36.4	64.2	0.9	34.9	59.9	0.0	40.1
Foreign exchange results	26.0	59.2	14.8	24.6	65.1	10.3	29.4	44.4	26.2
Extraordinary gains	21.9	7.3	70.8	27.4	7.7	64.9	8.0	6.4	85.6
Extraordinary losses	22.9	7.8	69.3	29.3	7.9	62.7	7.0	7.5	85.6
Taxes on extraordinary gains and/or losses	22.5	11.2	66.4	29.1	11.1	59.7	5.9	11.2	82.9
Reasons for the existence of extraordinary gains and/or losses	29.1	6.7	64.2	35.8	6.2	58.0	12.3	8.0	79.7
Income taxes	98.5	0.6	0.9	98.7	0.6	0.6	97.9	0.5	1.6
Structure effective tax-percentage	48.8	50.2	1.1	34.7	64.5	0.9	84.0	14.4	1.6
Reasons for change in the effective tax-percentage (comparison with last year)	55.4	42.2	2.4	44.5	52.7	2.8	82.4	16.0	1.6
Minority interest	65.1	7.2	27.7	63.6	6.4	30.0	69.0	9.1	21.9
Net profit	99.8	0.0	0.2	99.8	0.0	0.2	100.0	0.0	0.0
Specification concerning the time long-term loans are due	61.5	26.9	11.6	60.8	27.2	12.0	63.1	26.2	10.7
Interest percentage given for every distinguished kind of loan	59.0	28.7	12.2	59.7	28.1	12.2	57.2	30.5	12.3
New loans given in a changing scheme	21.1	57.6	21.3	13.3	66.6	20.1	40.6	35.3	24.1
Changing scheme shareholders' equity	77.2	22.8	0.0	70.2	29.8	0.0	94.7	5.3	0.0
Share capital (changes during financial year)	98.3	1.4	0.3	98.1	1.5	0.4	98.9	1.1	0.0
Share premium reserve (changes during financial year)	91.7	3.5	4.7	91.4	3.2	5.4	92.5	4.3	3.2

Continues ...

Item description	Full period (1997-2007)			Pre-IFRS period (1997-2003)			Post-IFRS period (2005-2007)		
	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)
Financial information items									
Revaluation reserve (changes during financial year)	17.9	22.3	59.8	19.1	20.3	60.6	15.0	27.3	57.8
Cumulative foreign currency translation reserve (changes during financial year)	31.5	56.0	12.5	24.6	64.0	11.3	48.7	35.8	15.5
Retained earnings (changes during financial year)	36.1	59.8	4.1	25.9	70.4	3.6	61.5	33.2	5.3
Legal reserves (changes during financial year)	29.4	15.9	54.7	27.2	15.8	57.0	34.8	16.0	49.2
Allowance for doubtful accounts	21.3	76.8	2.0	15.0	83.7	1.3	36.9	59.4	3.7
Stocks	85.9	6.1	8.0	87.2	6.4	6.4	82.9	5.3	11.8
Work in progress	47.6	17.4	35.0	44.3	18.8	36.8	55.6	13.9	30.5
Changing scheme financial fixed assets	77.2	8.3	14.5	76.4	8.8	14.8	79.1	7.0	13.9
1 January (changing scheme financial fixed assets)	81.2	4.6	14.2	82.0	3.4	14.6	79.1	7.5	13.4
Consolidation / investments (changing scheme financial fixed assets)	51.7	23.4	24.9	48.8	27.4	23.8	58.8	13.4	27.8
Goodwill (changing scheme financial fixed assets)	17.4	19.6	63.0	11.1	20.3	68.5	33.2	17.6	49.2
Share of results (changing scheme financial fixed assets)	56.4	17.9	25.7	54.8	19.5	25.7	60.4	13.9	25.7
31 December (changing scheme financial fixed assets)	81.2	4.4	14.4	82.4	3.0	14.6	78.1	8.0	13.9
Changing scheme tangible fixed assets	99.4	0.6	0.0	99.8	0.2	0.0	98.4	1.6	0.0
1 January (changing scheme tangible fixed assets)	99.4	0.6	0.0	99.8	0.2	0.0	98.4	1.6	0.0
Changes in the book value (changing scheme tangible fixed assets)	98.8	0.9	0.3	99.8	0.2	0.0	96.3	2.7	1.1
Investments (changing scheme tangible fixed assets)	98.2	1.8	0.0	98.3	1.7	0.0	97.9	2.1	0.0
Depreciation (changing scheme tangible fixed assets)	99.2	0.8	0.0	99.6	0.4	0.0	98.4	1.6	0.0
31 December (changing scheme tangible fixed assets)	98.9	1.1	0.0	99.4	0.6	0.0	97.9	2.1	0.0
Market value tangible fixed assets (quantitative or qualitative)	18.8	74.5	6.7	19.9	72.8	7.3	16.0	78.6	5.3
Market value tangible fixed assets (quantitative)	13.9	79.4	6.7	14.1	78.6	7.3	13.4	81.3	5.3
Amount of loans that are secured	52.9	32.4	14.7	51.4	37.7	10.9	56.7	19.3	24.1
Changing scheme intangible fixed assets	59.3	5.4	35.3	49.5	5.1	45.4	84.0	5.9	10.2
1 January (changing scheme intangible fixed assets)	59.2	5.0	35.8	50.1	4.1	45.8	81.8	7.5	10.7
Changes in the book value (changing scheme intangible fixed assets)	59.5	4.7	35.8	49.3	4.5	46.3	85.0	5.3	9.6
Investments (changing scheme intangible fixed assets)	45.6	11.6	42.8	32.8	13.1	54.2	77.5	8.0	14.4
Acquisitions (changing scheme intangible fixed assets)	23.4	15.9	60.7	13.7	18.2	68.1	47.6	10.2	42.2
Divestments (changing scheme intangible fixed assets)	26.3	13.8	59.9	18.0	13.5	68.5	47.1	14.4	38.5
Deconsolidation (changing scheme intangible fixed assets)	7.0	21.4	71.6	4.5	21.2	74.3	13.4	21.9	64.7
31 December (changing scheme intangible fixed assets)	59.6	4.4	35.9	50.1	3.4	46.5	83.4	7.0	9.6
Changing scheme provisions	62.8	32.7	4.4	54.2	43.9	1.9	84.5	4.8	10.7
1 January (changing scheme provisions)	86.4	9.2	4.4	88.2	9.9	1.9	81.8	7.5	10.7
Additions (changing scheme provisions)	54.6	39.0	6.4	43.4	51.0	3.6	77.5	9.1	13.4
Settlement (changing scheme provisions)	49.8	40.1	10.1	43.3	50.1	6.6	66.3	15.0	18.7
Recategorisation under current liabilities (changing scheme provisions)	7.8	56.7	35.5	7.5	64.5	28.1	8.6	37.4	54.0
Release (changing scheme provisions)	23.5	49.4	27.1	14.6	61.5	24.0	46.0	19.3	34.8
31 December (changing scheme provisions)	86.9	8.7	4.4	88.9	9.2	1.9	81.8	7.5	10.7

Continues ...

Item description	Full period (1997-2007)			Pre-IIRS period (1997-2003)			Post-IIRS period (2005-2007)		
	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)
Financial information items									
Changing scheme provisions (segmented)	56.3	35.5	8.3	47.8	46.0	6.2	77.5	9.1	13.4
Provisions segmented in long- and short-term (quantitative or qualitative)	54.9	39.1	6.0	56.7	40.5	2.8	50.3	35.8	13.9
Provisions segmented in long- and short-term (quantitative)	24.2	69.9	6.0	21.8	75.4	2.8	29.9	56.1	13.9
Sales segmented to currency	2.8	87.8	9.5	1.9	90.1	7.9	4.8	81.8	13.4
Results segmented to currency	2.4	88.1	9.5	1.9	90.1	7.9	3.7	82.9	13.4
Exchange rates of the most important foreign currencies	32.4	58.0	9.6	29.1	63.2	7.7	40.6	44.9	14.4
Structure cash flow statement (direct or indirect)	60.1	39.9	0.0	50.7	49.3	0.0	83.4	16.6	0.0
Operational cash flow (cash flow statement)	97.9	2.1	0.0	97.6	2.4	0.0	98.4	1.6	0.0
Received interest (cash flow statement)	29.4	64.5	6.1	18.2	78.8	3.0	57.2	28.9	13.9
Paid interest (cash flow statement)	36.5	59.3	4.1	22.5	74.9	2.6	71.7	20.3	8.0
Received dividends (cash flow statement)	24.3	55.7	20.0	18.6	65.7	15.6	38.5	30.5	31.0
Paid taxes (cash flow statement)	53.1	43.4	3.5	43.9	53.3	2.8	75.9	18.7	5.3
Investment cash flow (cash flow statement)	98.3	1.7	0.0	97.9	2.1	0.0	99.5	0.5	0.0
Investment intangible fixed assets (cash flow statement)	31.8	21.6	46.6	22.1	23.3	54.6	56.1	17.1	26.7
Divestment intangible fixed assets (cash flow statement)	11.9	26.0	62.1	6.9	29.1	64.0	24.6	18.2	57.2
Investment tangible fixed assets (cash flow statement)	80.6	18.7	0.8	76.2	23.1	0.6	91.4	7.5	1.1
Divestment tangible fixed assets (cash flow statement)	63.9	26.3	9.8	58.5	33.8	7.7	77.5	7.5	15.0
Acquisition group companies (cash flow statement)	39.0	30.7	30.3	37.5	35.1	27.4	42.8	19.8	37.4
Deconsolidation group companies (cash flow statement)	18.0	32.0	50.0	15.2	34.9	49.9	25.1	24.6	50.3
Investment financial fixed assets (cash flow statement)	35.0	36.4	28.6	31.9	43.0	25.1	42.8	19.8	37.4
Divestment financial fixed assets (cash flow statement)	27.1	38.7	34.3	24.6	45.2	30.2	33.2	22.5	44.4
Finance cash flow (cash flow statement)	97.6	2.3	0.2	96.6	3.2	0.2	100.0	0.0	0.0
Proceeds from long-term debt	54.9	27.4	17.7	49.7	33.6	16.7	67.9	11.8	20.3
Payments on long-term debt	59.3	24.3	16.4	55.2	28.1	16.7	69.5	15.0	15.5
Total sales of joint ventures	4.9	30.4	64.7	1.9	32.5	65.5	12.3	25.1	62.6
Total result of joint ventures	6.1	29.2	64.7	3.0	31.5	65.5	13.9	23.5	62.6
Research and development costs	24.9	22.5	52.6	21.2	24.2	54.6	34.2	18.2	47.6
Amount of assets that are activated under capital leasing	27.8	27.2	45.0	23.1	30.2	46.7	39.6	19.8	40.6
Price paid for an acquisition	17.9	39.8	42.4	12.6	47.8	39.6	31.0	19.8	49.2
The way an acquisition is financed	11.9	44.8	43.3	11.8	48.0	40.3	12.3	36.9	50.8
The effect of an acquisition on sales	13.1	44.2	42.7	13.7	46.3	40.0	11.8	39.0	49.2
The effect of an acquisition on the result	4.9	52.1	43.0	5.4	54.6	40.0	3.7	46.0	50.3
The amount of goodwill paid	38.5	18.5	43.0	47.5	12.6	39.8	16.0	33.2	50.8
The expected amount of restructuring costs on behalf of the acquisitions made	2.4	16.4	81.2	1.9	10.7	87.4	3.7	30.5	65.8
Balance sheet information (survey comparative figures)	84.3	14.1	1.7	85.7	13.1	1.3	80.7	16.6	2.7
Fixed assets (survey comparative figures)	43.1	55.7	1.2	42.0	57.0	1.1	46.0	52.4	1.6
Current assets (survey comparative figures)	33.6	65.1	1.2	30.4	68.7	0.9	41.7	56.1	2.1

Continues ...

Item description	Full period (1997-2007)			Pre-IFRS period (1997-2003)			Post-IFRS period (2005-2007)		
	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)
Financial information items									
Equity (survey comparative figures)	74.9	24.0	1.1	73.7	25.5	0.9	78.1	20.3	1.6
Provisions (survey comparative figures)	26.8	71.1	2.1	28.1	71.1	0.9	23.5	71.1	5.3
Long term loans (survey comparative figures)	35.3	59.6	5.0	35.8	58.9	5.4	34.2	61.5	4.3
Short term loans (survey comparative figures)	28.6	70.2	1.2	27.6	71.5	0.9	31.0	66.8	2.1
Income statement information (survey comparative figures)	89.6	9.3	1.1	92.1	7.1	0.9	83.4	15.0	1.6
Sales (survey comparative figures)	88.5	10.4	1.1	89.3	9.9	0.9	86.6	11.8	1.6
Operating income (survey comparative figures)	81.3	17.4	1.2	81.2	18.0	0.9	81.8	16.0	2.1
Extraordinary gains and/or losses (survey comparative figures)	16.8	47.1	36.1	18.8	47.1	34.0	11.8	47.1	41.2
Income tax (survey comparative figures)	25.1	70.3	4.6	24.0	72.8	3.2	27.8	64.2	8.0
Net result (survey comparative figures)	89.1	9.3	1.5	91.2	7.7	1.1	84.0	13.4	2.7
Other information (survey comparative figures)	87.5	11.2	1.4	89.3	9.4	1.3	82.9	15.5	1.6
3 years (survey comparative figures)	90.8	8.0	1.2	92.5	6.4	1.1	86.6	11.8	1.6
5 years (survey comparative figures)	86.5	11.8	1.7	89.1	9.4	1.5	80.2	17.6	2.1
10 years (survey comparative figures)	28.7	66.5	4.7	27.8	68.5	3.6	31.0	61.5	7.5
The effect of interest rates due to financial instruments	12.8	23.2	63.9	10.3	25.9	63.8	19.3	16.6	64.2
Per share information									
Number of (own) shares held by company at the end of the financial year	27.2	15.6	57.2	23.3	15.8	60.8	36.9	15.0	48.1
Number of (own) shares redistributed during the financial year	9.6	11.2	79.2	7.9	11.6	80.5	13.9	10.2	75.9
Price paid for the repurchased shares	16.5	22.5	61.0	12.4	25.5	62.1	26.7	15.0	58.3
Issue shares (cash flow statement)	48.3	13.8	37.9	48.8	16.1	35.1	47.1	8.0	44.9
Changes in own shares held (cash flow statement)	25.7	15.7	58.6	21.0	18.0	61.0	37.4	10.2	52.4
Paid dividends shareholders partnership	52.4	33.0	14.5	45.4	43.0	11.6	70.1	8.0	21.9
Paid dividends minority shareholders	13.5	44.3	42.2	7.3	52.2	40.5	28.9	24.6	46.5
Proposed profit appropriation	96.2	3.1	0.8	97.0	2.8	0.2	94.1	3.7	2.1
Total amount of dividends	74.8	7.8	17.4	73.0	10.1	16.9	79.1	2.1	18.7
Interim dividends	12.4	0.9	86.7	11.6	0.9	87.6	14.4	1.1	84.5
Dividends per common share	80.6	2.1	17.3	81.2	2.4	16.5	79.1	1.6	19.3
Dividends per special share	23.4	15.3	61.3	25.7	15.4	58.9	17.6	15.0	67.4
Net income per common share	92.2	3.8	4.0	91.2	4.5	4.3	94.7	2.1	3.2
Net income per special share	21.8	39.1	58.1	1.5	42.2	56.3	5.9	31.6	62.6
Net income (exclusive extraordinary gains and/or losses) a common share	31.0	25.7	43.3	25.7	27.6	46.7	44.4	20.9	34.8
Net income per common share fully diluted	54.0	31.7	14.4	40.9	42.4	16.7	86.6	4.8	8.6
Number of common shares outstanding at 1 January	89.0	10.9	0.2	87.4	12.6	0.0	93.0	6.4	0.5
Change in the number of common shares outstanding	53.1	22.8	24.2	47.1	28.9	24.0	67.9	7.5	24.6
Reasons for a change in the number of common shares outstanding	61.9	10.6	27.5	62.5	10.3	27.2	60.4	11.2	28.3
Number of common shares outstanding at 31 December	95.7	4.1	0.2	95.5	4.3	0.2	96.3	3.7	0.0

Continues ...

Item description	Full period (1997-2007)			Pre-IFRS period (1997-2003)			Post-IFRS period (2005-2007)		
	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)
Per share information									
Maximum number of common shares outstanding	44.5	45.3	10.2	41.5	46.5	12.0	51.9	42.2	5.9
Nominal value common share	96.3	3.4	0.3	97.0	2.8	0.2	94.7	4.8	0.5
Share Price	86.9	13.0	0.2	84.4	15.4	0.2	93.0	7.0	0.0
Stock market listing	85.3	14.5	0.2	80.5	19.3	0.2	97.3	2.7	0.0
Volume of shares traded	40.7	59.2	0.2	29.6	70.2	0.2	68.4	31.6	0.0
Cash dividend or stock dividend	41.3	7.0	51.7	49.7	3.6	46.7	20.3	15.5	64.2
Stock dividend	12.5	4.9	82.6	13.9	3.6	82.4	9.1	8.0	82.9
Stock split	6.1	3.8	90.1	7.1	3.2	89.7	3.7	5.3	90.9
Figures per share (survey comparative figures)	86.5	12.2	1.2	87.6	11.3	1.1	84.0	14.4	1.6
Net result per common share (survey comparative figures)	85.5	13.3	1.2	86.7	12.2	1.1	82.4	16.0	1.6
Dividends per common share (survey comparative figures)	75.4	19.9	4.7	76.4	18.4	5.1	72.7	23.5	3.7
Cash flow per common share (survey comparative figures)	56.7	41.9	1.4	61.0	37.9	1.1	46.0	51.9	2.1
Number of shares outstanding at 31 December (survey comparative figures)	57.5	41.1	1.4	58.5	40.5	1.1	55.1	42.8	2.1
Accounting standards information									
Announcement that explains for which period companies are included in the consolidation	50.2	24.5	25.4	48.8	27.2	24.0	53.5	17.6	28.9
Valuation 50%-investments / joint ventures	43.7	16.7	39.6	34.7	18.8	46.5	66.3	11.2	22.5
Valuation 20%-50%-investments	63.8	10.7	25.5	60.0	10.7	29.3	73.3	10.7	16.0
Valuation 20%-50%-investments	47.1	12.4	40.5	43.0	12.4	44.5	57.2	12.3	30.5
Accounting policies concerning research and development costs	25.1	22.6	52.3	21.0	23.6	55.5	35.3	20.3	44.4
Accounting policies capital leases	21.4	35.0	43.6	16.7	37.0	46.3	33.2	29.9	36.9
Method of handling the effects of a change of Accounting principles	22.0	3.7	74.3	16.1	3.0	80.9	36.9	5.3	57.8
The effect of a change in Accounting principles on the figures of last year	15.9	6.9	77.2	9.6	6.4	83.9	31.6	8.0	60.4
The effect of a change in Accounting principles on equity and the financial result	15.7	6.4	77.8	10.3	5.4	84.4	29.4	9.1	61.5
Nominator net income per common share	76.6	23.1	0.3	71.7	28.1	0.2	88.8	10.7	0.5
Denominator net income per common share	56.6	42.7	0.8	44.3	55.0	0.6	87.2	11.8	1.1
Remark whether the information stated can be compared (survey comparative figures)	35.0	62.8	2.1	32.1	66.2	1.7	42.2	54.5	3.2
Valuation financial instruments	26.0	26.6	47.4	18.4	32.3	49.3	44.9	12.3	42.8
Method of determination of the financial gains and/or losses of financial instruments	16.2	36.2	47.6	9.0	41.8	49.3	34.2	22.5	43.3
Method of handling the financial gains and/or losses of financial instruments	23.1	28.9	48.0	16.7	33.8	49.5	39.0	16.6	44.4
Corporate governance and strategic information									
Paragraph that discusses future expectations	98.6	1.4	0.0	99.6	0.4	0.0	96.3	3.7	0.0
Names of the companies that are dropped out or introduced in the consolidation	39.8	30.7	29.5	34.7	36.8	28.5	52.4	15.5	32.1
Events after the reporting period	41.1	13.0	45.9	34.9	13.9	51.2	56.7	10.7	32.6
Events after the reporting period including indication of materiality	24.9	22.0	53.1	19.3	22.5	58.2	39.0	20.9	40.1
Information concerning parts that will be sold on behalf of the acquisitions made	1.7	15.7	82.6	1.1	10.9	88.0	3.2	27.8	69.0

Continues ...

Item description	Full period (1997-2007)			Pre-IFRS period (1997-2003)			Post-IFRS period (2005-2007)		
	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)	Ones (%)	Twos (%)	Threes (%)
Corporate governance and strategic information									
Remuneration members of the board of management (total)	77.2	22.8	0.0	71.1	28.9	0.0	92.5	7.5	0.0
Remuneration members of the board of management (member)	45.3	54.6	0.2	25.9	73.9	0.2	93.6	6.4	0.0
Number of options held by members of the board of management	57.3	23.5	19.1	55.9	28.5	15.6	61.0	11.2	27.8
Number of options exercised by members of the board of management	36.4	36.9	26.8	30.8	45.0	24.2	50.3	16.6	33.2
List of the names of the members of the board of management and their affiliates	74.6	24.5	0.9	66.4	32.3	1.3	95.2	4.8	0.0
Information concerning changes in the management	60.6	1.8	37.6	51.2	2.4	46.5	84.0	0.5	15.5
Composition of shareholders	58.1	41.9	0.0	45.2	54.8	0.0	90.4	9.6	0.0
Other information									
Address	94.6	5.4	0.0	92.5	7.5	0.0	100.0	0.0	0.0
Number of employees (segmented)	72.9	20.6	6.4	75.2	19.5	5.4	67.4	23.5	9.1

This table shows for all 186 criteria (items) the percentage scores based on the annual reports of Dutch listed firms for the period 1997-2007, the pre-IFRS period (1997-2003) and post-IFRS period (2005-2007). Each of the 186 criteria (items) is classified under a set of CIFAR index categories, 1) financial information (124 items), 2) per share information (33 items), 3) accounting standards information (15 items), 4) corporate governance and strategic information (12 items) and 5) other information (2 items). For each annual report, we check and code each of the 186 disclosure criteria (items) based on two questions. Is the criterion (item) included in the annual report? If so, the criterion (items) is coded 1, if not we continue to the following question. Would the criterion (item) have been applicable to the firm, even though it is not included? If so, it is coded 2, if not it is coded 3. Criteria (items) coded 1 belong to the group of ones, those coded 2 belong to the group of twos, and those coded 3 belong to the group of threes. The criteria (items) that belong to the ones, twos and threes can vary depending on each annual report. The ones, twos and threes are mutually exclusive. Ones (%) equals $\frac{\#_{ones}}{186}$, twos (%) equals $\frac{\#_{twos}}{186}$, and threes (%) equals $\frac{\#_{threes}}{186}$.

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Chapter 5

Summary and concluding comments

5.1 Summary

In this dissertation three empirical studies on Dutch firms' dividend, governance and transparency policies have been described. In this section, the main findings of the three chapters are summarised.

The first study (Chapter 2) describes the dividend policy decisions of Dutch companies in the twentieth century. We find that the fraction of firms that decide to pay dividends has increased over the course of the twentieth century. At the same time, we observe that the proportion of the profits which are paid out has been declining steadily over the century. From 1903 to 2003, the mean payout ratio has dropped from 65% to 26%. We identify three dividend regimes, each with a specific set of rationales for dividend policies, i.e. the dominant logic for dividend policies varies over the twentieth century. By exploiting the variation across periods and by using Shapley decomposition algorithms we map changes in the dominant logic. In the pre-war years the fraction of dividend-paying firms is volatile and the payout ratio high, because firms pay out a pre-specified dividend return. In the post-war period, we observe stable dividend policies, whereby firms aim to smooth dividends. From the late 1980s onwards, paying a dividend seems to be the norm, while the actual profits distributed become much smaller. We conclude that the dominant logic of dividend policies has been revised twice and overall corporate earnings have been decoupled from dividend policies over the course of the twentieth century.

In the second study (Chapter 3), we analyse the stock price effects of block sales and purchases and the disclosures thereof for Dutch firms over the period 2000-2004. Under Dutch law, shareholders have to disclose ownership and trading date information when passing specific ownership thresholds. We test a conventional event study model and measure abnormal price effects both on the trading date and the disclosure date for block sales and purchases. We measure a significant positive price effect for block purchases

directly around the transaction date, but not for block sales. We do not measure a significant price effect for the disclosures of block transactions. This result implies that block trades are observable to market participants on Euronext Amsterdam and/or that the lag between block transactions and the subsequent mandatory disclosures is generally too long to provide useful information to investors. We find two opposing effects about the agency role of large shareholders. In particular, while we find that the market reacts positively to the entrance of a new blockholder, we also measure a negative reaction to the purchase of large blocks.

Finally, in the third study (Chapter 4), we describe the development of reporting transparency based on annual reports of Dutch non-financial listed firms. We analyse the relationship between corporate governance and reporting transparency by comparing the pre-IFRS period (1997-2003) and the post-IFRS period (2005-2007), and investigate the effect of reporting transparency on future firm performance. The main findings of this study are that the number of items disclosed in annual reports has increased over the period 1997-2007. In particular, after the introduction of IFRS, we observe a strong increase in transparency and a much lower variation. Before IFRS disclosure is mainly driven by firm size and leverage, both have a positive relation. Firms with preference shares also have higher disclosure scores. This indicates that the lack of disciplining in the market for corporate control is compensated by additional disclosure. Since IFRS, there is less room for the factors to explain disclosure. Bank ownership reduces transparency, potentially, because banks do not rely on annual report information when they serve as a firm's house bank. Preferred shares in the post-IFRS period only affect disclosure about accounting standards, and governance and strategy. Before IFRS, we find that higher disclosure is followed by lower Tobin's Q's, an effect that lasts, at least, four years. Disclosure of accounting standards has a positive value effect. Accounting standard information serves as a valuable governance device. Since IFRS, we find no systematic effects of transparency on performance.

5.2 Directions for further research

The differences in dominant logic in chapter 2 are consistent with differences in dividend policies in the three periods that have been defined. This is evidence of the relevance of beliefs of corporate management and financial markets about the optimal financial policies. In particular, the analysis of dividend policies has demonstrated that in the period before the Second World War the informational value of dividends is valuable because the financial reporting was of a low quality. In contrast, to the study in chapter 2, the studies in chapters 3 and 4 cover relatively short periods without taking notice of a changing dominant logic. This is an interesting direction for future research. Thus is to investigate whether the value effect of block trades and the relations between transparency, governance and performance are also subject to time variation. It would be interesting to

study the relation between transparency, governance and performance in a setting without effective auditing and legal requirements.

In chapter 2 a large database with financial characteristics over the twentieth century has been used. For this database five-yearly data has been collected. For future research, it will be valuable to further the quality of financial reporting data for example by comparing reported financial accounts with internal accounting data. This would be an opportunity to estimate the size of the hidden and secret reserves. Moreover, extending the database to annual data would allow further and more precise measurements.

The results of chapter 3 on block trades provide a puzzle. We documented the prize sensitivity with respect to the trades. However, the informational value of the disclosures is virtually absent. This conclusion calls for further research for example by interviewing intermediate parties involved in block trades. Also, analysis using intra-day data on block trades is still lacking for the Dutch market.

Chapter 4 on the transparency, governance and performance is currently focused on annual reports and has a quantitative nature. It could be interesting to improve our disclosure measures further, or by adding or interacting with aspects that so far were outside of the scope of this study. Some examples are whether an item conveys good or bad news, or whether an item is mandatory or voluntary. Furthermore, to study the interactions with other disclosure channels such as for example press releases, analyst calls, executive manager speeches, etc. Finally, the effects of non-audited information sources, which seem to become more important based on the developments of new media.

Nederlandse samenvatting (Summary in Dutch)

Samenvatting

In dit proefschrift worden drie empirische onderzoeken naar het beleid op het gebied van dividend, governance en transparantie van Nederlandse ondernemingen beschreven. In deze paragraaf worden de belangrijkste bevindingen van de drie hoofdstukken samengevat.

Het eerste onderzoek (hoofdstuk 2) beschrijft de beslissingen met betrekking tot de dividendpolitiek van Nederlandse ondernemingen gedurende de twintigste eeuw. Het aandeel ondernemingen dat besluit dividend te betalen neemt toe gedurende de twintigste eeuw. Tegelijkertijd laten onze resultaten zien, dat de verhouding uitgekeerde dividenden ten opzichte van de winst (uitkeringsratio) gestaag afnemen gedurende de eeuw. In de periode van 1903 tot 2003 nam de gemiddelde uitkeringsratio af van 65% tot 26%. We identificeren drie perioden met een eigen dividendbeleid. Iedere periode wordt gekenmerkt door een specifiek denken over dividendbeleid, een dominante logica. Deze dominante logica varieert in de loop van de twintigste eeuw. Door gebruik te maken van de variatie tussen de perioden en de Shapley decompositie algoritmen brengen we de veranderingen in de dominante logica in kaart. In de vooroorlogse jaren is de fractie van dividendbetalende ondernemingen volatiel en de uitkeringsratio hoog, omdat ondernemingen een vooraf gespecificeerd dividendrendement betalen. In de naoorlogse periode nemen we een stabiel dividendbeleid waar, wat er op wijst dat ondernemingen dividendstabilisatie nastreven. Vanaf de late jaren 1980, lijkt dividend betalen de norm te zijn, waarbij de daadwerkelijk uitgekeerde winst veel lager wordt. We concluderen dat de dominante logica voor dividendbeleid in de loop van de twintigste eeuw tweemaal is herzien en dat bedrijfswinsten en dividendbeleid zijn ontkoppeld.

In het tweede onderzoek (hoofdstuk 3) analyseren we de prijseffecten (rendementen) op aandelen wanneer deze in blokken gekocht en verkocht worden en de bijbehorende bekendmakingen voor Nederlandse bedrijven over de periode 2000-2004. Volgens de Nederlandse wet moeten aandeelhouders hun aandelenbezit en de transactiedatum bekendmaken zodra zij bepaalde eigendomsdrempels passeren. We toetsen een standaard

event study model en meten de abnormale prijseffecten zowel op de transactiedatum en op de datum van de bekendmaking van de bloktransacties. We meten een significant positief prijseffect voor blok aankopen direct rond de datum van de transactie, maar niet voor de blok verkopen. We meten geen significante prijseffecten voor de bekendmakingen van de bloktransacties. Dit resultaat impliceert dat de bloktransacties waarneembaar zijn voor de marktdeelnemers op Euronext Amsterdam en/of dat de vertraging tussen de bloktransacties en de daaropvolgende verplichte bekendmaking over het algemeen te lang is om nuttige informatie te verstrekken aan beleggers. We zien twee tegengestelde effecten met betrekking tot de agency rol van grote aandeelhouders. In het bijzonder, omdat wij vinden dat de markt positief reageert op een nieuwe grote aandeelhouder, maar we ook een negatieve reactie op de aankoop van grote blokken meten.

Tenslotte, in het derde onderzoek (hoofdstuk 4) beschrijven we de ontwikkeling van de transparantie van de verslaggeving op basis van de jaarverslagen van Nederlandse niet-financiële beursgenoteerde bedrijven. We analyseren de relatie tussen corporate governance en transparantie door de pre-IFRS-periode (1997-2003) en de post-IFRS-periode (2005-2007) te vergelijken en we onderzoeken het effect van transparantie op de toekomstige prestaties van ondernemingen. De belangrijkste bevindingen van deze studie zijn, dat over de periode 1997-2007 het aantal vermelde items in jaarverslagen zijn toegenomen, en dat we met name na de invoering van IFRS een sterke toename van de transparantie en een veel lagere variatie zien. Voor de invoering van IFRS wordt de transparantie van de verslaggeving voornamelijk gedreven door de grootte van de onderneming en de verhouding tussen eigen en vreemd vermogen (hefboomeffect), beide hebben een positieve relatie. Ondernemingen met beschermingspreferente aandelen hebben ook een hogere transparantie. Dit geeft aan dat het gebrek aan discipline in de markt voor corporate control gecompenseerd wordt door een hogere transparantie. Sinds de invoering van IFRS is er minder ruimte voor factoren om de transparantie te verklaren. Indien banken aandeelhouders zijn dan verlaagd dit de transparantie. Een mogelijke verklaring zou kunnen zijn, dat indien banken tevens huisbank zijn van een onderneming, deze niet uitsluitend aangewezen zijn op de informatie in de jaarverslagen. Beschermingspreferente aandelen in de post-IFRS periode beïnvloeden alleen de transparantie van de verslaggeving met betrekking tot de toegepaste accounting regels in het jaarverslag, de governance en de strategie. Voor de invoering van IFRS, vinden we dat een hogere transparantie leidt tot een lagere Tobin's Q, dit effect duurt ten minste vier jaar. Transparantie met betrekking tot de toegepaste accounting regels heeft een positief effect op de waarde van de onderneming. Informatie over toegepaste accounting regels dient als een waardevol governance middel. Sinds de invoering van IFRS vinden we geen systematische effecten van transparantie op de prestaties.

Richtingen voor verder onderzoek

De verschillen in de dominante logica in hoofdstuk 2 zijn in overeenstemming met de verschillen in het dividendbeleid in de drie gedefinieerde perioden. Dit is een bewijs van de relevantie van de heersende gedachtegangen binnen ondernemingsbesturen en financiële markten over optimaal financieel beleid. In het bijzonder, heeft de analyse naar dividendbeleid aangetoond dat in de periode voor de Tweede Wereldoorlog de informatieve waarde van dividend aanwezig is, omdat de financiële verslaggeving destijds van een lage kwaliteit was. In tegenstelling tot de studie in hoofdstuk 2 dekken de studies in de hoofdstukken 3 en 4 relatief korte periodes af en zonder rekening te houden met een veranderende dominante logica. Dit is een interessante richting voor toekomstig onderzoek. Aldus is te onderzoeken of het waarde effect van bloktransacties en de relaties tussen transparantie, governance en prestaties ook onderhevig zijn aan variatie in de tijd. Het zou tevens interessant zijn om de relatie tussen transparantie, governance en prestaties in een omgeving zonder effectieve controle en wettelijke vereisten te bestuderen.

In hoofdstuk 2 is gebruik gemaakt van een grote database met financiële kenmerken voor de twintigste eeuw. Voor deze database is vijfjaarlijkse data verzameld. Voor toekomstig onderzoek zou het waardevol zijn om de kwaliteit van de financiële verslaggeving te bevorderen, door bijvoorbeeld extern gerapporteerde financiële rekeningen te vergelijken met interne boekhoudkundige gegevens. Dit zou een mogelijkheid geven de grootte van de verborgen en geheime reserves te schatten. Bovendien zou een uitbreiding van de database met jaarlijkse data verdere en meer nauwkeurige maatstaven mogelijk maken.

De resultaten van hoofdstuk 3 over bloktransacties leiden tot een puzzel. We documenteren een prijsgevoeligheid ten aanzien van de transacties. Echter, de informatieve waarde van de bekendmaking is vrijwel afwezig. Deze conclusie pleit voor verder onderzoek bijvoorbeeld door intermediaire partijen te interviewen die betrokken zijn bij bloktransacties. Daarnaast ontbreken analyses op basis van intraday data van bloktransacties voor de Nederlandse markt.

Hoofdstuk 4 over transparantie, governance en prestaties is momenteel gericht op de jaarverslagen en is kwantitatief van aard. Het zou interessant zijn om de transparantie maatstaven te verbeteren, of door toevoeging of interacties met aspecten die tot dusver buiten de omvang van deze studie waren. Enkele voorbeelden zijn, of een item binnen een maatstaf goed of slecht nieuws weergeeft, of een item verplicht of vrijwillig is. Bovendien, zou men de interacties met andere kanalen, waarmee informatie bekend gemaakt kan worden, kunnen onderzoeken, bijvoorbeeld persberichten, analyst calls, presentaties door bestuurders of topmanagers, etc. Ten slotte lijken, gelet op de ontwikkelingen van nieuwe media, ook de effecten van niet gecontroleerde informatiebronnen belangrijker te worden.

Biography



Henry van Beusichem was born in Zoelen on May 23rd, 1977. He holds a BEng degree in Industrial Engineering from the Hogeschool 's-Hertogenbosch (2000), an MSc degree in Business Administration from the Rotterdam School of Management, Erasmus University (2004), and a CEMS Master in International Management degree from the Community of European Management Schools (2004). He went on to work as a controller and gained professional experience at CRH Umformtechnik GmbH & Co. KG

(Germany), an automotive supplier. In 2007, he joined the Department of Finance of the Rotterdam School of Management (RSM Erasmus University) as a Ph.D. candidate. His Ph.D. trajectory was supported by the Erasmus Research Institute of Management (ERIM) and by NWO, a grant applied for by prof. dr. Jan Luiten van Zanden and prof. dr. Abe de Jong. As a Ph.D. candidate, he was also involved in undergraduate and graduate thesis supervision. In 2011, he joined the University of Twente as a lecturer in Finance. His research interests are in the area of empirical corporate finance, with a particular focus on dividend policy, corporate governance and financial reporting.

Portfolio

Research

- The logic of dividend policy in the twentieth century: Evidence from the Netherlands, with Abe de Jong and Philip Fliers
- The price impact of block transactions in the Netherlands, with Abe de Jong and Teye Marra (*forthcoming in International Journal of Corporate Governance*)
- The relation between transparency, corporate governance and firm performance in the Netherlands

Teaching & supervising activities

RSM

- Corporate Finance (BSc): 2009/10 (Tutorials)
- Corporate Finance A (MSc): 2007/08 (support)
- Bachelor Thesis supervision: 2008/09, 2009/10
- Master Thesis supervision: 2007/08 - 2010/11

University of Twente

- Finance, Accounting & Information Systems (BSc): 2013/14 - ...
- Corporate Financial Management & Analysis (BSc): 2011/12 - 2014/15
- International Financial Management (BSc): 2011/12 - 2014/15
- Management Accounting & Control (BSc): 2011/12 - 2014/15
- Seminar Corporate Finance (BSc): 2011/12 - 2014/15
- Accounting & Finance (Pre-MSc): 2013/14
- Corporate Finance (MSc): 2014/15
- Bachelor Thesis supervision: 2011/12 - ...
- Master Thesis supervision: 2011/12 - ...

PhD Courses

- *Core courses in Research methodology*: Research methodology and measurement (ERIM), Statistical methods (ERIM) and Applied econometrics (ERIM).
- *Skill courses*: English (ERIM) and Publishing strategy (ERIM)
- *Specialization courses*: The theory of corporate finance (ERIM), Empirical corporate finance (ERIM), Fixed income securities (ERIM), Advanced microeconomics: Organizations and incentives (ERIM), Business History (EUR), Topics in financial history (CentER)

Teaching certifications

- Risbo: Basic Didactics certificate (2010)

Conferences attended

- TILEC-AFM - PhD Finance seminar series, University of Tilburg, Netherlands, 2006
- 34th Annual Meeting of the European Finance Association (EFA), University of Ljubljana, Slovenia, 2007
- 12th Annual Conference of the European Business History Association (EBHA), University of Bergen, Norway, 2008
- 6th Annual Corporate Finance Day, Rotterdam School of Management, Erasmus University, Netherlands, 2008
- 41st Annual Meeting of the European Finance Association (EFA), USI Università della Svizzera Italiana and the Swiss Finance Institute, Switzerland, 2014

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FIRMS AND FINANCIAL MARKETS**EMPIRICAL STUDIES ON THE INFORMATIONAL VALUE OF DIVIDENDS,
GOVERNANCE AND FINANCIAL REPORTING**

This dissertation contains three empirical studies that contribute to our understanding of dividend, governance and transparency policies of Dutch listed firms. The first study describes the dividend policy decisions of Dutch firms in the twentieth century. The fraction of dividend-paying firms has increased but the proportion of the profits which are paid out has declined steadily over the century. We identify three dividend regimes, each with a specific set of rationales. We exploit the variation across periods and apply Shapley decomposition algorithms to map changes in the dominant logic. The dominant logic of dividend policies has been revised twice and earnings have decoupled from dividend policies. In the second study, we analyse the stock price effects of block sales and purchases and the disclosures thereof for Dutch firms over the period 2000-2004. Shareholders have to disclose ownership and trading date information when passing specific ownership thresholds. We measure a significant positive price effect for block purchases but not for block sales. We do not measure a significant price effect for their disclosures. We find two opposing effects about the agency role of large shareholders. The final study describes the development of reporting transparency based on annual reports of Dutch non-financial listed firms for the periods before and after IFRS became mandatory. We analyse the relationship between corporate governance and reporting transparency and we investigate the effect of reporting transparency on future firm performance. In particular, after the introduction of IFRS, we observe a strong increase in transparency and with a much lower variation.

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