

# Bachelor thesis

## Agency theory and the dividend payout ratio of Dutch publicly listed firms

---

<b>Name</b>	Alexander Lau
<b>Student number</b>	s1134965
<b>Date</b>	10-6-2013
<b>First reader</b>	Henry van Beusichem
<b>Second reader</b>	Xiaohong Huang
<b>University</b>	University of Twente
<b>Bachelor</b>	Business Administration

## Abstract

The subject of this thesis concerns the effects of the agency problem on the dividend payout ratio of 119 Dutch publicly listed non-financial firms in 2007. The results from my research show that the dividend payout ratio of firms decreases as growth opportunities increase. These findings correspond with the outcome model of national legal governance systems. The results also show that firms utilizing preference shares as a takeover defense have higher dividend payout ratios than non-users. This may indicate that the dependence on shareholders as a source of finance is so important that they need to be assured by dividends of managers' good intentions, which conflicts with the outcome model. This theoretical discrepancy could be explained by the heterogeneity among firms within a country that affect the dividend payout ratio more profoundly than only the effect of the national legal governance system.

None of the relationships appeared to be robust, because the significance levels, coefficient values, expected signs and r-squared values differed among the various operationalizations of earnings and growth opportunities. Lastly, due to the descriptive nature of this thesis, explanations of alternative theories cannot be ruled out. Further research is needed to confirm the agency explanation of these results.

# Content

## Table of Contents

- TABLE OF CONTENTS ..... 3**
- 1 INTRODUCTION ..... 4**
- 2 THEORETICAL CONTEXT ..... 7**
  - 2.1 The agency cost model..... 7
  - 2.2 Information asymmetry ..... 7
  - 2.3 Debt as a substitute for Dividends ..... 8
  - 2.4 National Legal Governance and Dividend Payout ..... 8
  - 2.5 Dutch settings..... 11
  - 2.6 Managerial Entrenchment hypothesis ..... 13
- 3 METHODOLOGY AND DATA ..... 16**
  - 3.1 Data ..... 16
  - 3.2 Research question and hypotheses..... 16
  - 3.3 Variables ..... 16
  - 3.4 Method of analysis ..... 19
  - 3.5 Univariate analysis..... 20
- 4 RESULTS AND DISCUSSION ..... 25**
  - 4.1 Results ..... 25
  - 4.2 Discussion ..... 28
- 5 CONCLUSION ..... 30**
  - 5.1 Conclusion ..... 30
  - 5.2 Limitations and future research ..... 31
- LITERATURE REFERENCES..... 33**
- DUTCH SUMMARY..... 35**

## 1 Introduction

In today's financial world, dividend policy is an essential issue that all publicly listed firms have to consider. Investors have a variety of reasons for wanting the company to pay out dividends: affirmation of their trust that the firm is doing well financially, which dividend payments can certainly signal; dividends as a form of income for the shareholder; investors' need to raise cash and selling shares may be more expensive than dividends due to transaction costs. Yet, which explanation is most consistent with the real world, if any? Why do dividends exist? This is a confounding question, known as 'the dividend puzzle' that many researchers have tried to answer (Black, 1998). Conclusive evidence remains elusive. Certainly in The Netherlands 'the dividend puzzle' has not been elaborated on extensively. This prompts me to research this phenomenon in the Dutch setting.

In the seminal paper of Miller and Modigliani (1961), a perfect world is described wherein a corporation's dividend policy is irrelevant: information is equally available to everybody and every action is frictionless (i.e. cost-free). At this point, one has to make a clear distinction between dividend policy and the total amount of dividends paid out. It goes without saying that the amount of dividends themselves is very important, because shareholders care about the cash return on their shares at any single moment in time. However, dividend policy alone is not capable of raising the dividend amount at any one date in time while keeping dividends constant at another: that is because dividend policy solely relates to how the corporation chooses to allocate a *fixed* total dividend amount over time. If a shareholder requests more dividends on one date, this will automatically decrease the total dividends available for subsequent payout-dates, since the company only has a fixed amount of cash to distribute, *ceteris paribus*. This is the core principle of why dividend policy is irrelevant in a perfect world (Miller & Modigliani, 1961). Does this proposition hold true in the real world? The answer is a resounding 'no'. The following is an excerpt of a CNBC article on BP's dividend policy: *'BP will continue its raised dividend policy on the back of higher profits for the oil company as long as oil prices continue their upward trajectory, the company's CEO Bob Dudley told CNBC Tuesday. "The increase in the dividend of 14 percent is good progress. It reflects the momentum going into 2012, the improved circumstances for the company. It is our intention to build up a progressive dividend policy, it depends on oil process and a number of things," Dudley said in an interview.'*<sup>1</sup> The CEO of BP clearly cares if the company maintains its dividend policy or not. So why is the Miller-Modigliani theorem even worth mentioning if it does not apply to real world situations? The answer is that it provides important insights to the dividend policy decisions companies have to make when the conditions of the perfect world are relaxed. Like with many complex situations, it is far easier to understand them by looking at a simplified model and relaxing each restriction step-by-step, in so doing, making the whole situation more digestible. The bridge between the perfect world and the real world is what creates understanding. In this case, the Miller-Modigliani theorem serves this purpose.

The contradiction between Miller and Modigliani's irrelevance theorem of dividend policy and the prevalence of dividends in the real world has conjured up a plethora of explanations over the years: signaling hypothesis, life-cycle theory, catering theory and of course agency theory, to name a few. Catering theory is one of the more recent explanations to pop up. Baker and Wurgler (2004) have proposed a catering theory of dividends, where companies adjust their dividend policy to the needs of the shareholders (as if 'catering' to their wishes). Although some evidence of catering theory has been found in The United States, empirical research in Europe has failed to produce any results supporting this effect

---

<sup>1</sup> [http://www.cnbc.com/id/46291614/BP\\_to\\_Keep\\_Dividend\\_Policy\\_If\\_Oil\\_Rises\\_CEO](http://www.cnbc.com/id/46291614/BP_to_Keep_Dividend_Policy_If_Oil_Rises_CEO)

(Von Eije & Megginson, 2006). Of these competing theories, none has captured the mainstream's attention more than the agency cost model (Jensen & Meckling, 1976).

In the real world information is not costless and certainly not equally available to everyone, which is almost always the case when those managing the company (i.e. the managers) are not (or only partial) owners (i.e. the shareholders). This concept of one party having more information than the other is called information asymmetry. This asymmetry manifests itself in two forms: adverse selection and moral hazard. Adverse selection entails the problem that principals are unable to discern 'good' agents from 'bad' ones prior to investing. Even if the principal passes this first hurdle and invests in a 'good' company, the second information asymmetry arises and that is the one of moral hazard: because the agent essentially runs the company, the principal can only hope that the agent acts in his best interest. These manifestations of information asymmetry between corporate insiders (e.g. managers) and outsiders (e.g. shareholders) are the foundation of the agency problem (Jensen & Meckling, 1976). Although the subject of this thesis predominantly consists of hypotheses concerning the moral hazard component of agency theory, one cannot clearly separate the two sides when talking about dividends, because publicly listed firms are concerned with both incumbent and potential investors. Therefore aspects of adverse selection will certainly be touched upon. Dividends can be an effective instrument to ameliorate these problems by assuring minority shareholders that they will get a return on their holdings. Also, dividend payments can signal to potential investors in the market that a corporation is unwilling to exploit them, thereby ensuring future funds. In this sense dividends transfer insider information to outsiders, thus narrowing the information asymmetry gap. Dividend payout is also a way for companies to signal to shareholders of their benevolent intentions. If a firm pays out a high amount of dividends, it has to turn to external investors for additional capital to fund new projects. So the firm must continually subjugate itself to market forces, thereby being forced to maximize the shareholder's wealth in order to stay competitive (Easterbrook, 1984).

The agency problem manifests itself in different forms: (1) managers versus shareholders; (2) shareholders versus debt holders; (3) majority versus minority shareholders. In my thesis I choose to focus on the cash amount of dividends paid relative to the firm's earnings (i.e. the dividend payout ratio) as the means of mitigating agency costs, but also as a way to discipline managerial behavior. I want to research the effects various aspects of the agency problem have on the firm's dividend payout ratio. Thus the main research question of this thesis is: **What effects do the agency problems of managers versus shareholders and majority versus minority shareholders have on the dividend payout ratio in The Netherlands?** To answer the main research question, I set up the following hypotheses with the type of agency problem stated at the end of each hypothesis:

1. *The leverage ratio is negatively related to the dividend payout ratio. (managers versus shareholders)*
2. *Growth opportunities are negatively related to the dividend payout ratio. (managers versus shareholders)*
3. *Firms that use preference shares as a takeover defense have a lower dividend payout ratio than firms that do not utilize such preference share capital. (managers versus shareholders)*
4. *Ownership concentration has a quadratic relationship with the dividend payout ratio: ownership concentration is negatively related to the dividend payout ratio below an entrenchment level of 30%, but positively related above that critical level. (majority versus minority shareholders)*

The dividend payout ratio is also known as the dividend payout relative to earnings. If one only looked at the dividends in an absolute sense, then this would distort the results, because smaller firms could be paying more dividends relative to their earnings, but still show fewer propensities to do so, when they are compared to the absolute dividends of larger corporations. That is why every hypothesis in my thesis has the dividend payout ratio as the dependent variable, as opposed to only the dividend amount.

The sample used for this research consists of 119 non-financial firms that were publicly listed on the Euronext Amsterdam stock exchange in 2007. The data on the paid-out dividend amounts and the preference shares were gathered from the *'Effectengids: gids bij de officiële prijscourant van Euronext Amsterdam (2007/2008) and (2008/2009)'*. The data entailing a corporation's growth opportunities and other firm-specific characteristics were collected from the Orbis database of Bureau Van Dijk and firms' annual reports.

The results from my research show that the dividend payout ratio of firms decreases as growth opportunities increase. These findings correspond with the outcome model of national legal governance systems (La Porta, Lopez de Silanes, Vishny and Shleifer, 2000). The results also show that firms utilizing preference shares as a takeover defense have a higher dividend payout ratio than non-users. When this result is looked at from the perspective of substitution (La Porta et al., 2000), it makes sense that managers pay out more dividends/earnings, since firms have to signal to shareholders, on whom they depend for financial resources, of their unwillingness to exploit them. This theoretical discrepancy between the outcome and substitute model characteristics could be explained by the heterogeneity among firms within a country that affect the dividend payout ratio more profoundly than only the effect of the national legal governance system.

None of the relationships showed themselves to be robust, because the significance levels, coefficient values, expected signs and the r-squared values differed greatly among the various operationalizations of earnings and growth opportunities. Lastly, due to the descriptive nature of this thesis, explanations of alternative theories cannot be ruled out. Further research is needed to confirm the agency explanation of these results.

As stated in the beginning, many researchers have tried to solve 'the dividend puzzle'. Although my thesis is not unique in its assessment of established agency theory, I try to provide an insight into the way various aspects of the agency problem manifest themselves in The Netherlands. This can help principals and agents develop a better understanding of each other's position in business by showing them how to perceive certain dividend amounts in light of a firm's growth and other important firm-specific factors. Like I said, other papers have already paved the way, but research in general is a collective effort and without confirmatory/falsifying researches like my own, those papers' results would not carry such a significant explanatory merit as they do. Scientific results only hold meaning if they are corroborated by others. Aside from that fact, it is also true that the agency literature on The Netherlands is not as extensive as that on many common law countries, such as The United States. My thesis synthesizes elements of agency theory common in The Netherlands (e.g. preference share use) with elements that are associated with macro-economics in general (e.g. growth opportunities). This way my thesis conveys more depth to and understanding of agency theory in The Netherlands, since the predictions made about distinctly Dutch preference share use (hypothesis 3) are linked with the outcome model of national legal governance (hypothesis 2).

My paper is structured as follows: in section 2 I lay out the theoretical background to my hypotheses. In section 3 I explain my methodology and data. Section 4 covers the results of my research. After that, I draw some final conclusions in section 5 and reflect on the limitations of my research. Lastly, I also suggest topics for future research.

## 2 Theoretical context

### 2.1 The agency cost model

The agency cost model explains why the agent (e.g. the manager) needs to be monitored (e.g. through auditing) by the principal (e.g. the shareholder), to prevent the former from exploiting the latter's investment. This monitoring expense has to be incurred by the principal as an agency cost. Although monitoring costs are the most important and written about agency costs, there are also two other types: bonding costs and residual loss (Jensen & Meckling, 1976). Bonding costs are very interesting, because this agency cost is borne by the agent, as opposed to the principal. Rational investors are aware of the risks of adverse selection and moral hazard, so they are careful. Because agents need principals for their funds, they must overcome this wall of suspicion by incurring costs to show that they have no hidden agenda. This bonding cost can take multiple forms. For example, the manager could offer the investor a contractual agreement that contains severe legal repercussions for the agent if he were to pursue his own interests at the expense of shareholders. Both monitoring and bonding costs are extensively incurred in order to close the information asymmetry gap and align the interests of principals and agents. Even with these disciplinary mechanisms in place, if agents still manage to grant themselves private benefits at the expense of the shareholder's wealth, the agency cost engendered is called the residual loss. This residual loss is virtually unavoidable in practice, because even the best regulated agency situations are vulnerable to loopholes, which the agent can exploit.

The dividend payout is a way for companies to signal to shareholders of their benevolent intentions. If a firm pays out a high amount of dividends, it has to turn to external investors for additional capital to fund new projects. So the firm must continually subjugate itself to market forces, thereby being forced to maximize the shareholder's wealth in order to stay competitive (Easterbrook, 1984). Seen in this light, dividend payout forms a self-imposed managerial disciplinary mechanism, ergo a bonding cost.

Share repurchase also deserves to be mentioned in this context, since it is an alternative method of mitigating free cash flow concerns (Szilagyi & Renneboog, 2007). Firms that buy back shares decrease the shares outstanding and one could expect this process to reduce the amount and propensity of dividends paid. So far, nobody has been able to substantiate this claim. Evidence refuting this assumption has been produced (Grullon & Ikenberry, 2005). The relationship between dividend policy and share repurchase seems to be complementary, rather than competitive (Von Eije & Megginson, 2006). Even though share repurchases may not substitute dividend payout all together, the fact that firms' payout propensities are declining does seem to be supported by research results. Not only are firms less inclined to pay dividends, but the average dividend payout ratio is also decreasing (DeAngelo, DeAngelo, & Skinner, 2004; Fama & French, 2001; Fatemi & Bildik, 2011; Hoberg & Prabhala, 2006; Renneboog & Trojanowski, 2005; Salas & Chahyadi, 2004; Von Eije & Megginson, 2006).

### 2.2 Information asymmetry

Information asymmetry is a central concept in agency theory. This asymmetry manifests itself in two forms: adverse selection and moral hazard. Adverse selection entails the problem that principals are unable to discern 'good' agents from 'bad' ones prior to investing. On face value, principals can misconstrue an agent's quality of service, caused by an agent's misrepresentation of his own merit. Professional ratings by external auditing agencies and other third parties could close the information asymmetry gap, which Black (1998) argues is another reason why dividends do not have to fulfill this function. However, the problem of



adverse selection may merely be transferred to the ratings instead of the actual investment, which would still not solve the problem. If one were to ignore professional ratings, then the only way to bridge this gap in information about an agent's true motives, is to invest and hope that the quality of management is what it appears to be. This of course puts the principal at a severe disadvantage (Akerlof, 1970). Even if the principal passes this first hurdle and invests in a 'good' company, the second agency problem arises and that is the one of moral hazard: because the agent, by definition, runs the company, he makes the business decisions on behalf of the principal. The agent does not bear the risks of his decision (at least not to the same extent as the principal), so there are personal financial incentives to deviate from the alignment between their interests, and thus a moral hazard comes into existence (Hölmstrom, 1979). These manifestations of information asymmetry between corporate insiders (e.g. managers) and outsiders (e.g. shareholders) are the foundation of the agency problem (Jensen & Meckling, 1976).

Dividends can be an effective instrument to ameliorate these problems by reassuring shareholders that they do get a return on their holdings. Also, dividend payments can signal to potential investors in the market that a corporation is unwilling to exploit them, thereby ensuring future funds. In this sense dividends transfer insider information to outsiders, thus narrowing the information asymmetry gap (Easterbrook, 1984).

### 2.3 Debt as a substitute for Dividends

The more debt a firm issues, the greater the risk is of financial distress. This in turn reduces managerial discretion, since unprofitable projects may cause the company to become insolvent and unable to cover the interest on the debt. Agency costs decrease for shareholders and dividends are less necessary to control managerial discretion: debt substitutes for dividend payout (Easterbrook, 1984; Jensen, 1986). Besides bankruptcy costs, debt issuance also reduces the free cash the management has available, because the company has to pay the interest return to creditors (Jensen & Meckling, 1976). That is why debt can be qualified as a manifestation of bonding costs borne by agents (Jensen, 1986). This leads me to state my first hypothesis: *The leverage ratio is negatively related to the dividend payout ratio.* (managers versus shareholders)

Considering empirical results, Von Eije and Megginson (2006) and Manos (2003) found that a higher leverage diminishes dividend payout, for European Union firms and Indian firms, respectively. These results fit the agency theory, but other explanations are still possible and truly isolating this agency explanation from alternatives (e.g. life-cycle theory) is very difficult. Francis, Hasan, John and Song (2011) controlled for leverage of firms in their research. They found a negative relationship between leverage and dividend payout, but it was not consistently significant. Other studies found no significant relationship between leverage and dividend payout (Gugler & Yurtoglu, 2003; Maury & Pajuste, 2002).

### 2.4 National Legal Governance and Dividend Payout

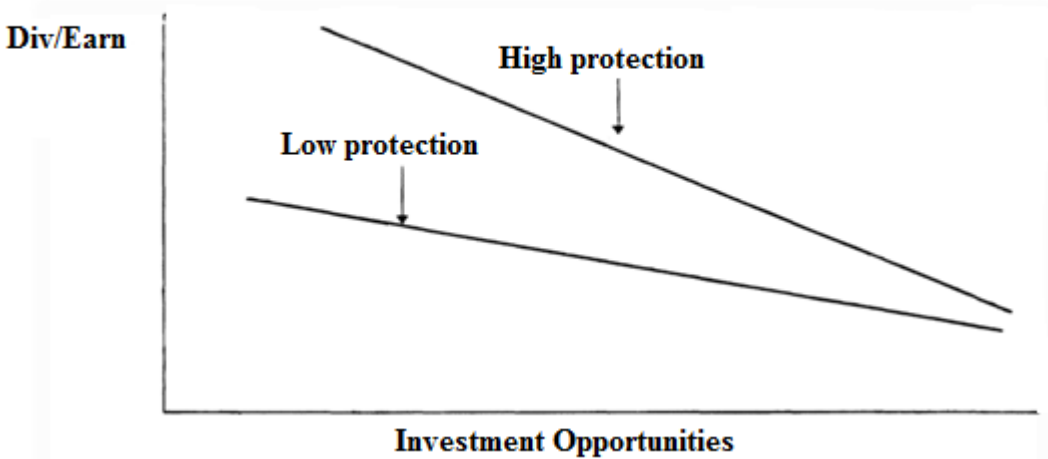
Civil law countries (e.g. The Netherlands) have historically had poorer shareholder protection than common law countries (e.g. the UK). La Porta et al. (2000) investigate the impact of different legal governance systems on the dividend payout ratio in countries across the globe. They looked at firms' growth opportunities and proposed hypotheses to test the 'outcome model' and the 'substitute model' of agency theory.

According to the outcome model, dividend payments are an outcome of the national legal governance system. Shareholders in common law countries allow managers to have more leeway, because shareholder rights are legally better protected than in civil law countries. If they sense that managers are not acting in their best interests, they can legally force the company to disgorge its excess cash. This is far more difficult to do in civil law



countries, which prompts their shareholders to be more vigilant in case of any managerial mischief. Firms with many growth opportunities (a term interchangeably used with ‘investment opportunities’) always have an economic incentive to invest their retained earnings in profitable projects, instead of paying them out as dividends, irrespective of the legal governance system. Company growth benefits shareholders too, because it is accompanied by a share value increase. Shareholders in common law countries therefore support managerial decisions to substantially reduce dividend payments in order to pursue growth opportunities, knowing that strong legal disciplinary mechanisms deter any deviation from shareholders’ interests. In contrast, a firm with few growth opportunities is not granted this same leeway and shareholders in common law countries have the legal clout to force the firm to pay out any retained earnings that cannot be invested in profitable projects. In this same low growth situation, the outcome model predicts that in countries where shareholder protection is weakly reinforced by law (i.e. civil law countries), shareholders will always want to get as much from the company as possible in terms of dividends, but due to their relatively weak legal position, the dividend payout ratio is expected to be lower than in common law countries, ceteris paribus. More investment opportunities will mitigate this effect in civil law countries, since underinvestment risk of projects would also harm incumbent shareholders. However, as growth opportunities increase, the need for dividends will not decline steeper than in countries with better legal protection (i.e. common law countries), because without the threat of legal repercussions, shareholders are never guaranteed to receive dividends. That is why it is called the outcome model, because the severity of the agency problem is a direct result (outcome) of the legal institution of a country. The relationship between the dividend payout ratio and investment opportunities is illustrated in figure 1 (La Porta et al., 2000):

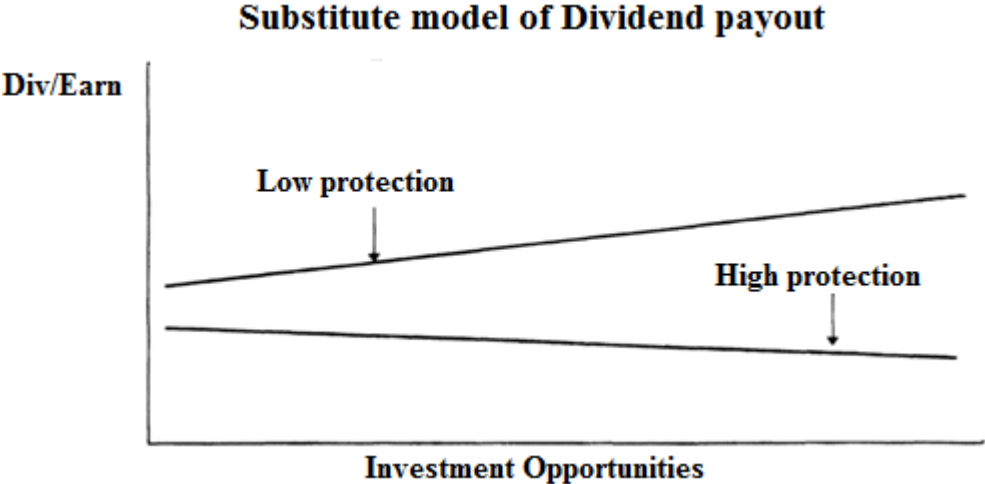
**Outcome model of Dividend payout**



**Figure 1: Outcome model of Dividend payout**

In contrast to the outcome model, the substitute model states that the dividend payout ratio of corporations substitutes for the (weak) legal protection of shareholders in a country. A key assumption of this model is that the main incentive for a company to signal the lack of any expropriating intentions is its need (at least periodically) to enter external capital markets for public funds. In civil law countries like The Netherlands, this model predicts that firms must pay out dividends consistently if they wish to attract and retain investors, because the weak rights of shareholders make people naturally cautious in investing their money. Corporations with great investment opportunities, also have to pay out dividends from retained earnings. Even though those earnings could be put to great use, the company cannot

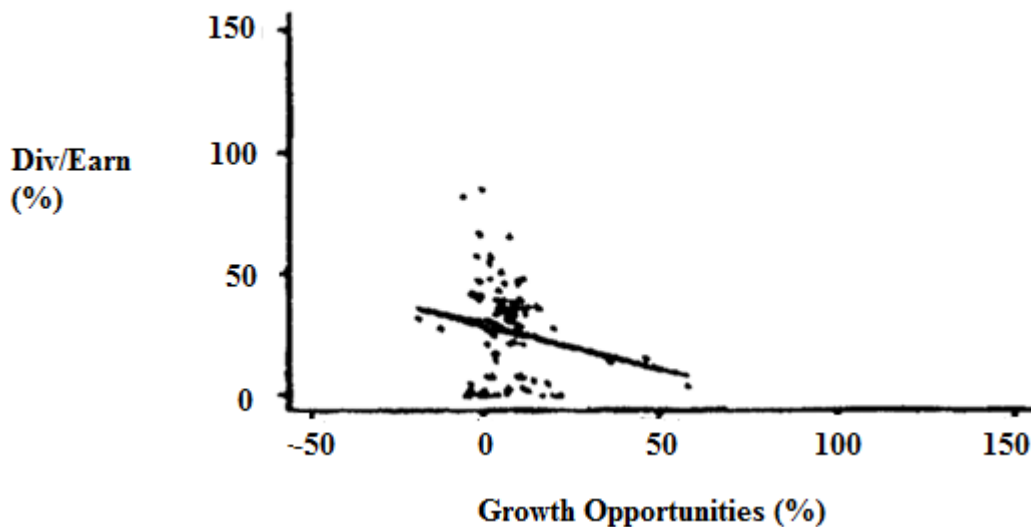
risk losing its good reputation among shareholders, because in the absence of strong legal protection, shareholders mainly rely on dividends as a means of control. So if anything, firms with greater growth in civil law countries have to pay out more dividends in order to attract investors and assure the current and potential shareholders of no foul play. The need for a good shareholder reputation in common law countries is less important, because the good national legal system almost guarantees a minimum standard for shareholder treatment. That is why one would expect the dividend payout ratio to be higher in civil than in common law countries, according to the substitute model. This relationship is depicted in figure 2 (La Porta et al., 2000):



**Figure 2: Substitute model of Dividend payout**

Both models have a well-established theoretical background, but they make two distinct predictions about the relationship between dividends and investment opportunities in civil law countries. According to the outcome model one would expect the dividend payout ratio to gently decrease as investment opportunities become more abundant. The opposite is true for the substitute model, where the dividend payout ratio mildly increases, as investment opportunities rise, because high growth firms are more dependent on external funds and therefore have a larger incentive to show more goodwill through a higher dividend payout ratio. La Porta et al. (2000) researched a cross-sectional sample of 4103 large corporations in 33 countries. The results support the outcome model of agency theory. Which one of these predictions has empirical merit in The Netherlands? La Porta et al. (2000) produced the following results:

### Regression analysis The Netherlands



**Figure 3: Regression analysis The Netherlands**

Figure 3 shows that the regression line matches that of the outcome model. However, the scatterplot is not uniformly distributed along its length. One can legitimately question the accuracy of the outcome model's prediction. That is why I want to test this model in my research. Since my thesis only focuses on companies within The Netherlands, hypotheses concerning countries with high legal shareholder protection are omitted. My second hypothesis is: *Growth opportunities are negatively related to the dividend payout ratio.*

Fatemi and Bildik (2011), whose sample covers dividend policies across 33 countries (The Netherlands included) in the period 1985-2006, find results that concur with the outcome model of La Porta et al. (2000): the legal origin of a nation does provide a division between dividend policies. The mean payout ratios of companies in civil law countries have been consistently lower than their counterparts in common law countries since the year 1995. The results also show that larger, more profitable firms with fewer growth opportunities have a greater propensity to pay dividends. When one looks at the aggregate dividends, it becomes clear that most of the dividends are being paid by the ten largest firms. Across all 33 countries, this percentage was 66% for the study's most recent year (2006). The relative share in The Netherlands for the same year was even larger (90%). Clearly, aggregate dividend payout is highly concentrated, especially in The Netherlands (Fatemi & Bildik, 2011).

### 2.5 Dutch settings

Now that I have discussed the agency problem in the context of national legal governance systems, I shift my attention to the specific agency settings in The Netherlands, because I only use data from companies in The Netherlands for my empirical research. Firms in The Netherlands are generally said to have low dividend payout ratios and highly concentrated ownership (La Porta et al., 2000). Corporate governance in The Netherlands can be described as a 'polder model': consensus is sought among the different stakeholders (most notably employers and employees) of a company, so not just among shareholders. This markedly contrasts firms in common law countries, where the main priority of corporate governance is to appease shareholders and maximize their wealth (Szilagy & Renneboog, 2007). Moreover, (minority) shareholders are starkly restricted in their rights by the common adoption of anti-shareholder devices which infringe on the one-share-one-vote rule (e.g. shareholder rights plans and preference shares). The shareholder's position is made worse by Dutch law, which

mandates firms, with a share capital of over 11.4 million and employment of at least 100 workers, to implement rules that lawfully limit shareholder rights. All these impediments are very common among Dutch listed companies, with over 90% having some form of anti-shareholder provision in place. This striking percentage gives sustenance to the aforementioned assumption that civil law countries have poorer shareholder protection than common law countries. Shareholders are allowed to vote on the proposed dividend policy during the company's annual shareholder meeting, but this hardly ever leads to an altered dividend policy than the one proposed by managers. This fact becomes apparent in a study conducted by De Jong, Mertens and Roosenboom (2006). They concluded from a sample of 245 annual shareholder meetings in the period 1998-2002, that per meeting, shareholders' attendance averaged at only 30%. Moreover, of the total 1583 proposals that were filed by management, only 9 were rejected. These results show that shareholders are very indifferent towards management proposals and not keen on exercising their rights, limited as they may be.

The three most important types of shares used in The Netherlands to restrict shareholder power are: (a) certificates, (b) priority shares and (c) preference shares (Szilagyi & Renneboog, 2007).

- (A) Certificates carry full cash flow rights, but no voting rights. The management-friendly administration office (in Dutch 'Stichtingsadministratiekantoor') assumes all the voting rights of the swapped ordinary shares.
- (B) Priority shares are 'golden shares' and thus bear special voting properties on specific occasions like mergers, public offerings and the appointment of board members.
- (C) The anti-shareholder device theoretically severest in restricting shareholders' rights, as argued by Szilagyi and Renneboog (2007), is a company's use of preference shares. Dutch preference shares carry full voting rights and can be purchased with an initial payment of only 25% of the nominal capital. The preference shares in the authorized capital can have an issue size of 100% of a corporation's total outstanding capital (i.e. 50% of the sum of authorized and outstanding capital), making them very effective diluting anti-shareholder devices. These preference shares are issued only to manager-friendly third parties. Preference shares insulate managers from disciplinary actions by weakening minority shareholder voting and cash flow rights.

Although Szilagyi and Renneboog (2007) claim that preference shares are the most restrictive, one can argue that certificates are equally severe, since they bear no voting rights. Once shareholders trade their ordinary shares for certificates, they forfeit their votes. The prospective shareholders often do not have a choice in the matter, because they can solely purchase certificates at the administration office. All in all it is difficult to decide which anti-shareholder provision is severer, but one can say that preference share use is far more prevalent and in that sense more relevant to examine. Moreover, the initial payment of only 25% gives managers the opportunity to halt any takeover threat fairly quickly, with external manager-friendly parties spending relatively little capital in diluting incumbent shareholders' voting power. The successful use of preference shares as an anti-shareholder device does not only depend on their mere presence, but also their diluting capacity. Managers, under threat of a hostile takeover, can issue preference shares from the company's authorized capital and dilute the total issued share capital. This diminishes the voting strength of shareholders, possibly to a point where all the ordinary shares combined will not make up 50% of the total issued capital, thereby nullifying any attempt of a hostile takeover. Of course the necessity of

the diluting capacity to be 50 % of the total issued capital is a conservative estimate, because it is very unlikely for all the different shareholders to form a homogeneous voting bloc in favor of a takeover, but theoretically it is possible.

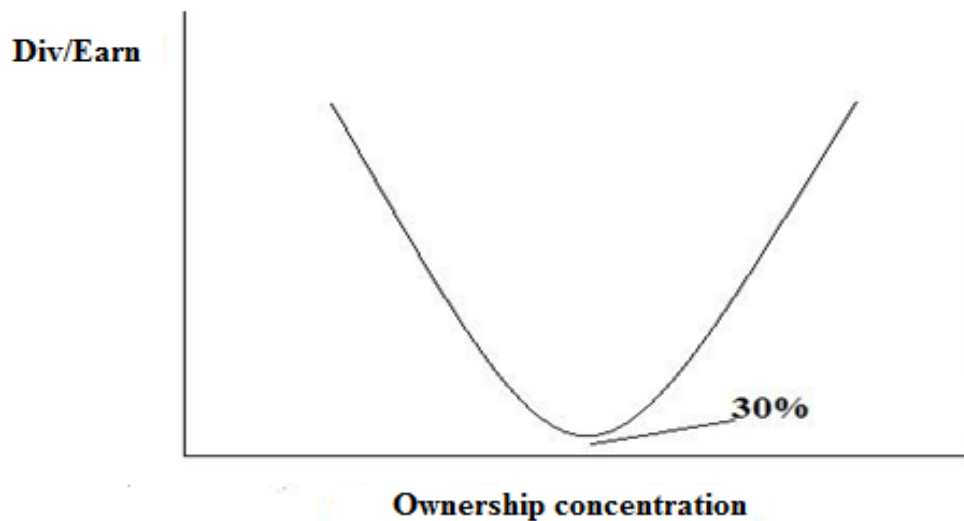
Szilagyi and Renneboog (2007) examined corporations listed on Euronext Amsterdam and NMAX in the period 1996-2004. They found results that show that over 70% of the firms use preference shares and that this reduces the dividend payout ratio. Based on these results, I propose my third hypothesis: *Firms that use preference shares as a takeover defense have a lower dividend payout ratio than firms that do not utilize such preference share capital.* (managers versus shareholders)

## 2.6 Managerial Entrenchment hypothesis

The agency problem manifests itself in different forms: (1) managers versus shareholders; (2) shareholders versus debt holders; (3) majority versus minority shareholders. The form most relevant in civil law countries, and by extension The Netherlands, is type (3) (Choy, Gul, & Yao, 2011; Shleifer & Vishny, 1996). To compensate for the weak legal protection, firms have high ownership concentration in civil law countries in order for shareholders to gain control over and monitor the firm's managers (i.e. agents). This reduces the first form of the agency problem, but augments the third form by forcing the minority shareholders in a submissive position. Majority shareholders monitor (and in some cases are) the managers, and gain control of the company in the process. They exercise pressure on the managers to channel more of the firm's earnings away from the minority shareholders for personal benefits. This expropriation of minority shareholders by majority shareholders is called the rent extraction hypothesis (Gugler & Yurtoglu, 2003). Gugler and Yurtoglu (2003) examined the dividend policies of 266 major firms in Germany, a country analogous to The Netherlands, both in shareholder legal protection and ownership concentration. Central in their paper is the agency conflict between large and small shareholders. They found evidence for the rent extraction hypothesis. A larger ownership concentration correlates with a lower dividend payout ratio, but if there is a second major shareholder present with at least an ownership concentration of 5%, then this increases the dividend payout ratio. One could say that the discretionary ability of the largest shareholder is in 'check' (Gugler & Yurtoglu, 2003). It has become clear from preliminary analysis that there is insufficient information on second major shareholders to perform reliable statistical analyses. Consequently I am unable to pose a hypothesis based on this 'check' for majority shareholders.

My third hypothesis focuses on the agency conflict between majority and minority shareholders. An interesting theory explaining the role of dividends in the agency conflict between majority and minority shareholders is the managerial entrenchment hypothesis. This hypothesis predicts a very distinct U-shaped relationship between the dividend payout ratio on the vertical axis and ownership concentration within a firm on the horizontal axis. Before a critical entrenchment level of ownership concentration, the agency conflict between shareholders and managers is severest. To reduce this conflict, large amounts of dividends have to be paid out to reduce retained earnings and prevent managerial non-value maximizing behavior. When ownership among shareholders concentrates, they gain more control over the firm, reducing the monitoring costs. This in turn reduces the agency conflict. So before this critical entrenchment level, ownership concentration and dividends function as substitutes to combat the agency problem, therefore, a negative relationship exists between the two: when one increases, the other decreases. Conversely, when ownership concentration actually surpasses the critical entrenchment level, the third form of the agency conflict takes hold and the dividend payout ratio rises to mitigate the agency problem and ensure the value maximization of the minority shareholder's investment. This distinct relationship of the managerial entrenchment model is represented in figure 4 (Farinha, 2003):

## Managerial Entrenchment model



**Figure 4: Managerial Entrenchment model**

The critical entrenchment level has been put at 30%, because beyond this percentage, no firm has ever been acquired in a hostile takeover, implying that after this threshold, insiders are immune to any external disciplining mechanisms (Farinha, 2003). Dividends once again become the primary instrument in ameliorating the agency problem. Takeovers are not the only form of managerial discipline, but it has undoubtedly the most far-reaching consequences. Takeover threats can set in motion a sequence of events that would otherwise never occur (Jensen, 1986). The mere threat of a takeover is enough to regulate managerial behavior. Jensen (1986) illustrates this point with examples of Philips and Unocal, where takeover threats forced the companies to restructure, resulting in shareholder gains of 20-35% of market value, equal to 6.6 billion US dollars. The potency of takeovers should not be underestimated as an external disciplinary tool for managers. Francis et al. (2011) researched the effect the passing of antitakeover legislation had on American firms. Bearing in mind that The United States are a common law country, the impact of such a law is far more noticeable than in a civil law country. The results showed that the antitakeover legislation had insulated the managers from external disciplinary actions to such a degree that dividend payout ratios and propensities fell significantly. These effects were far more pronounced in corporations with already weak corporate governance systems, which lends extra credence to the agency explanation (Francis et al. 2011). Farinha (2003) conducted a cross-sectional study of over 600 companies in the UK. His results validated the critical entrenchment model and also showed that the critical entrenchment level was indeed around 30%. He admitted that this hypothesis may only hold true for large firms, as he could not find evidence for this hypothesis among small firms. Moreover, his sample consisted only of firms in the UK (i.e. a common law country), which makes it interesting to investigate if the managerial entrenchment model also applies to corporations in a civil law country. My fourth hypothesis is: *Ownership concentration has a quadratic relationship with the dividend payout ratio: ownership concentration is negatively related to the dividend payout ratio below an entrenchment level of 30%, but positively related above that critical level.* (majority versus minority shareholders) The reason hypothesis 4 is considered an agency problem of the third kind, even though the model bears the adjective 'managerial', is because in this context the majority shareholder is the manager himself or someone closely affiliated to him (Farinha,



2003). This dual role of manager/shareholder blurs the line between the first and third form of the agency problem, which shows the degree of interaction between these various agency aspects. The existence of this quadratic relationship is not acknowledged by everyone, as I displayed earlier with the findings of Gugler and Yurtoglu (2003). Other researchers like Jensen and Meckling (1976) argue that only a negative relationship exists with ownership concentration functioning as a substitute for dividend payout. However, this substitution relationship is also being challenged. Szilagyi and Renneboog (2007), whose sample is most similar to mine, unexpectedly discovered a complementary relationship between ownership concentration and the dividend payout ratio. Ownership concentration has an increasing (complementary) rather than a decreasing (substitution) effect on dividends for Dutch publicly listed companies. One may wonder why I posit the managerial entrenchment model as my fourth hypothesis instead of the linear complementary relationship shown by Szilagyi and Renneboog (2007). The managerial entrenchment model has a more established theoretical background and this result produced by Szilagyi and Renneboog (2007) has not (yet) been corroborated by other studies. However, ignoring these alternative theories would be a disservice to the validity of my thesis, so I also include ownership concentration without a quadratic transformation in my research to explore these other relationships.



## 3 Methodology and Data

### 3.1 Data

I conduct a cross-sectional study by using data on 119 companies that were publicly listed on the Euronext Amsterdam stock exchange in The Netherlands in the year 2007, denoted with a (t). The years of 2005 and 2006, denoted with (t-2) and (t-1) respectively, are also included in the data purely as a result of the lag I have introduced to control for the causal direction (see 3.4 Method of analysis). I use the stock guide *'Effectengids: gids bij de officiële prijscourant van Euronext Amsterdam'* to collect the various information, with the data on dividends originating from the edition of (2008/2009) and the data on preference shares from the edition of (2007/2008). The last edition of this guide was published in 2009, with the most recent data on dividends being 2007. Admittedly, this is an arbitrary choice, but this was the most efficient way to gather the data.

The original sample consisted of 127 firms. I have excluded banks and other financial firms from my sample, because they have different financial reporting standards. This narrowed the sample to 119 companies. For other relevant data on accounting figures and ownership concentration, I consulted the Orbis database of Bureau Van Dijk and firms' annual reports.

### 3.2 Research question and hypotheses

The research question of my thesis is: **What effects do the agency problems of managers versus shareholders and majority versus minority shareholders have on the dividend payout ratio in The Netherlands?**

I test the following hypotheses with the type of agency problem stated at the end of each hypothesis:

1. *The leverage ratio is negatively related to the dividend payout ratio. (managers versus shareholders)*
2. *Growth opportunities are negatively related to the dividend payout ratio. (managers versus shareholders)*
3. *Firms that use preference shares as a takeover defense have a lower dividend payout ratio than firms that do not utilize such preference share capital. (managers versus shareholders)*
4. *Ownership concentration has a quadratic relationship with the dividend payout ratio: ownership concentration is negatively related to the dividend payout ratio below an entrenchment level of 30%, but positively related above that critical level. (majority versus minority shareholders)*

### 3.3 Variables

All variables (except for preference shares as an anti-shareholder provision) utilized in this research are continuous. An ordinary least square (OLS) analysis is performed with all the variables and for hypothesis 3, a two-sample t-test is executed. The following definitions are given to operationalize the variables per hypothesis:

Dependent variables:

- Dividend payout ratio: Dividends per earnings.

- Dividends: The total dividends payout in cash (including a firm's optional payouts) to common shareholders in the year of 2007, expressed in thousands of euros (La Porta et al., 2000).
- Earnings: The total amount of profit before taxes and interest (EBIT) in the year of 2007, expressed in thousands of euros (La Porta et al. 2000). To check the robustness of my hypothesis, I use 'net sales' and 'net income' as other proxies for earnings (La Porta et al., 2000). In the literature researchers conventionally take an average value over several years as the dividend payout ratio. This decreases the probability of an irregular value for the dependent variable. Due to the constraints of my research, I am unable to achieve this robustness. That is why I also utilize 'total assets' as part of a fourth dividend payout ratio (Francis et al., 2011). Even though 'total assets' is not the same as 'earnings', it does provide a more sturdy measurement, because the total assets of a corporation are less likely to change significantly on an annual basis than earnings. This creates the following four dependent variables:
  - Dividends/earnings (I): dividends/EBIT.
  - Dividends/earnings (II): dividends/net income.
  - Dividends/earnings (III): dividends/revenues.
  - Dividends/earnings (IV): dividends/total assets.

#### Independent variables:

- Leverage: The ratio between total debt and total assets in the year of 2006 (Francis et al., 2011).
- Growth opportunities: The change of total assets  $((TA_{t-1}-TA_{t-2})/TA_{t-2})$  over the year of 2006 (Denis & Osobov, 2008; Fama & French, 2001). This operationalization is potentially problematic, because it only encompasses past growth, which may not be relevant in the managerial decision on the amount of dividends paid out in the next year. To capture future growth, I use a second proxy for growth opportunities, as I have done with 'earnings': market-to-book ratio = market-to-book ratio:  $(TA_{t-1} - (\text{owners' equity})_{t-1} + (\text{market capitalization})_{t-1} - (\text{reserves})_{t-1}) / TA_{t-1}$ . This operationalization of the market-to-book ratio also entails the total assets of a firm, making it akin to Tobin's q. However, other studies utilize a simpler operationalization: market capitalization / owners' equity (Fatemi & Bildik, 2011, Szilagyi & Renneboog, 2007). Szilagyi and Renneboog (2007) explicitly state that the operationalization of Tobin's q yielded no robust relationships with the dividend payout ratio, therefore they chose for the latter definition. To strengthen the robustness of my results, I am compelled to include this other operationalization too. In this sense, the market-to-book ratio is superior to total asset growth, but the market-to-book ratio is not perfect, since it is subjugated to investors' sentiments, which may cause a severe distortion from the true fundamental value (Denis & Osobov, 2008; Fama & French, 2001). These different types of operationalization are used to triangulate the results.
  - Growth opportunities (I): change of total assets:  $((TA_{t-1}-TA_{t-2}) / TA_{t-2})$
  - Growth opportunities (II): market-to-book ratio:  $(TA_{t-1} - (\text{owners' equity})_{t-1} + (\text{market capitalization})_{t-1} - (\text{reserves})_{t-1}) / TA_{t-1}$ .
  - Growth opportunities (III): market-to-book ratio:  $(\text{market capitalization})_{t-1} / (\text{owners' equity})_{t-1}$ .
- Preference shares: This is a dichotomous variable. This variable consists of the sum of all the preference share types. As mentioned in the previous section, no firm with an

ownership concentration greater than 30% has ever succumbed to a hostile takeover (Farinha, 2003). However, even though I am aware of these facts, Farinha (2003) conducted his research in the UK, so I do not know if that result can be safely extrapolated to listed corporations in The Netherlands. I only qualify the use of preference shares with a greater diluting capacity than 50%, as 'yes'. All firms that do not use preference shares or are unable to reach this threshold of 50%, are qualified as 'no'. Diluting capacity is calculated as follows:  $(\text{authorized preference share capital}) / ((\text{total issued capital}) + (\text{authorized preference share capital})) * 100\%$ . The conservative threshold of 50% makes it more difficult for me to confirm my second hypothesis, so this way I am not jeopardizing the validity of my results.

Although I (arbitrarily) dichotomized the variable 'preference shares', essentially, it is still a continuous variable, since the amount of preference shares in the authorized capital can just as easily be quantified as continuous. So in addition to the two sample t-test, I include preference shares in my OLS model.

- Ownership concentration: The amount expressed in the fraction of total shares with voting rights that the largest shareholder possesses in the year of 2006 (Farinha, 2003). The hypothesized relationship is not linear, but quadratic. In order to statistically test this hypothesis, I transform the independent variable 'ownership concentration' so that a linear regression analysis can be performed. Seeing as the hypothesized relationship is squared, I transform the variable as follows:  $(\text{ownership concentration}) \Rightarrow (\text{ownership concentration})^2$ . After this adjustment, I perform a regression analysis which should yield a positive relationship with dividends/earnings (Farinha, 2003). From the results I am also able to calculate the entrenchment level. For robustness's sake, I also test the relationship without transforming 'ownership concentration' to see if a linear relationship exists, in accordance with other researchers (Gugler & Yurtoglu, 2003; Jensen & Meckling, 1976; Szilagyi & Renneboog, 2007).

I also control for possible third variable confounders and draw my conclusions. The most important third variables to control for are the firm-specific characteristics 'profitability' and 'size' (Fama & French, 2001; Francis et al., 2011; Mitton, 2004).

- Profitability has a positive effect on the dividend payout ratio (Jensen & Meckling, 1976). The more profitable a company becomes the more free cash flow it will have. In order to prevent managers from using the extra cash for personal benefits, investors will demand it to be paid out as dividends instead.
  - Profitability: this is defined as the return on total assets (net profit divided by total assets) in the year of 2006 (Farinha, 2003).
- Size is expected to have a positive relationship with dividends. Since larger firms on average have fewer growth opportunities, they do not need the retained earnings to expand their operations. So to diminish the free cash flow, the company disgorges it as dividends (Von Eije & Megginson, 2006).
  - Size: the natural logarithm of total assets in the year of 2006 (Bøhren, Josefsen, & Steen, 2012; Gugler & Yurtoglu, 2003; Maury & Pajuste, 2002)

### 3.4 Method of analysis

One of the threats to the validity of a cross-sectional study is the ambiguity of the direction of causality. Even if a significant correlation is found in the sample, that still does not prove a causal direction. To combat this threat, I introduce a time lag in my research. A core criterion of inferring causation is that the relationship obeys a temporal order: the independent variable has to come before the dependent variable in order to cause the effect visible in the latter (De Vaus, 2001). To achieve this, I use data from the year 2007 for my dependent variable ‘dividends/earnings’ and utilize data from 2006 and 2005 to compose my independent variables. The time lag of one year is arbitrarily chosen, but one has to realize that if the gap would have been wider, then there would be more opportunities for confounders to distort the results. I am well aware of the fact that even with these precautions, explanations other than agency theory are still possible, but at least the most basic threats to my research are reduced. I discuss the limitations of my research design more thoroughly in section 5.2.

The linear function that is derived from the data can be described by the following ordinary least squares (OLS) model:  $(\text{Dividend/earnings})_t = \beta_0 + \beta_1 * (\text{Leverage})_{t-1} + \beta_2 * (\text{Growth opportunities})_{t-1} + \beta_3 * (\text{Preference shares})_{t-1} + \beta_4 * (\text{Ownership concentration})_{t-1} + \beta_5 * (\text{Control variables})_{t-1} + e$ . ‘Dividends/earnings’ is the dependent variable ‘y’,  $\beta_0$  is the graph’s intersect with the y-axis (a constant),  $\beta_n$  represents the slope, with ‘n’ denoting the different coefficients, and ‘x’ is the independent variable (e.g. leverage). Lastly, there is ‘e’, which is the error term. This term describes the deviation of the predicted value for y from the observed value (Babbie, 2012).

To get a better understanding of the interrelationships between the independent variables, I built up to the OLS model as seen above by performing five different multivariate regressions. The first regression serves as a default situation, including only the control variables ‘profitability’ and ‘firm size’. The second regression adds leverage, the third regression adds growth opportunities to the default situation (so without leverage), the fourth includes preference shares with all the previous variables and finally in the fifth regression, all variables are encompassed. So basically, with every next regression, more variables are added to understand how the statistical significance of relationships are affected by introducing other variables. The sequence of the additions of variables follow the order of the hypotheses. Admittedly, this is an arbitrary choice and in order to truly give an exhaustive list of all possible relationships, more regressions have to be performed. However, this would be very time consuming and would not provide a significant added contribution to my research.

Because hypothesis 3 demands the dichotomization of the independent variable ‘preference shares’, two groups are created, each tested for what type of relationship they have with the dependent variable ‘dividends/earnings’. Does one group have a higher dividend payout ratio on average than the other? So basically, the third hypothesis states that the mean dividend payout ratio of the group that uses preference shares is lower than the mean of the group that does not. In order to compare the two groups and to find a statistically significant difference, I execute a two-sample t-test.

### 3.5 Univariate analysis

**Table 1: Descriptive statistics**

	Median	Mean	Minimum	Maximum	Standard deviation	Observations
Total dividends <sub>t</sub> (thousand euros)	11,866.19	67,739.86	0.00	1,146,721.60	173,355.31	119
EBIT <sub>t</sub> (thousand euros)	49,792.00	553,999.63	-58,468.00	31,926,000.00	3,042,562.50	119
Net Income <sub>t</sub> (thousand euros)	36,988.50	495,669.93	-91,700.00	21,866,458.24	2,245,580.21	119
Net Income <sub>t-1</sub> (thousand euros)	23,830.00	419,112.06	-100,148.00	26,311,000.00	2,466,895.62	119
Revenues <sub>t</sub> (thousand euros)	388,210.00	5,189,778.09	0.00	355,782,000.00	32,753,980.57	119
Dividends/earnings <sub>t</sub> (I)	0.21	0.23	-1.80	2.36	0.38	119
Dividends/earnings <sub>t</sub> (II)	0.28	0.40	0.00	6.04	0.74	119
Dividends/earnings <sub>t</sub> (III)	0.01	0.09	0.00	6.55	0.60	119
Dividends/earnings <sub>t</sub> (IV)	0.02	0.03	0.00	0.28	0.04	119
Total debt <sub>t-1</sub> (thousand euros)	291,893.00	260,3511.88	40.00	120,331,000.00	11,770,809.34	119
Leverage <sub>t-1</sub>	0.55	0.55	0.00	1.09	0.21	119
Growth opportunities <sub>t-1</sub> (I)	0.10	0.33	-0.75	4.88	0.75	119
Growth opportunities <sub>t-1</sub> (II)	1.49	1.72	0.48	6.25	1.01	119
Growth opportunities <sub>t-1</sub> (III)	2.32	2.66	-1.74	9.78	1.89	119
Preference shares <sub>t-1</sub>	0.45	0.35	0.00	0.90	0.33	119
Ownership concentration <sub>t-1</sub>	0.20	0.32	0.03	1.00	0.28	119
Profitability <sub>t-1</sub>	0.06	0.07	-0.48	1.89	0.20	119
Total assets <sub>t</sub> (thousand euros)	609,026.17	4,630,108.13	1,724.00	269,470,000.00	25,088,223.01	119
Total assets <sub>t-1</sub> (thousand euros)	489,100.00	4,245,073.54	5,189.00	235,276,000.00	22,094,503.40	119
Total assets <sub>t-2</sub> (thousand euros)	397,232.00	4,005,612.06	3,096.00	219,516,000.00	20,715,228.16	119
Shareholders' equity (thousand euros)	189,500.00	1,915,350.40	-25,848.24	123,960,000.00	11,482,336.87	119
Market Capitalization <sub>t-1</sub> (thousand euros)	487,833.37	5,944,030.55	348.00	447,178,307.74	41,162,794.04	119
Reserves <sub>t-1</sub> (thousand euros)	4,631.00	136,258.92	0.00	7,847,381.43	756,744.11	119

The variables are defined as follows: Total dividends: The total amount of dividends paid out in cash (including a firm's optional payouts) to common shareholders. Dividends/earnings (I): dividends/EBIT. Dividends/earnings (II): dividends/net income. Dividends/earnings (III): dividends/revenues. Dividends/earnings (IV): dividends/total assets. Leverage: The ratio between total debt and total assets. Growth opportunities (I): change in total assets. Growth opportunities (II):  $(\text{total assets})_{t-1} - (\text{owners' equity})_{t-1} + (\text{market capitalization})_{t-1} - (\text{reserves})_{t-1} / (\text{total assets})_{t-1}$ . Growth opportunities (III):  $(\text{market capitalization})_{t-1} / (\text{owners' equity})_{t-1}$ . Preference shares: the diluting capacity of the firm's authorized preference share capital. Diluting capacity is calculated as follows:  $(\text{authorized preference share capital}) / ((\text{total issued capital}) + (\text{authorized preference share capital}))$ . Ownership concentration: the fraction of total shares with voting rights that the largest shareholder possesses. Size: the natural logarithm of total assets. Profitability: the return on total assets (net profit divided by total assets). Reserves<sub>t-1</sub>: funds of retained earnings that are set aside for future use. t: 2007; t-1: 2006; t-2: 2005.

The first thing that one notices is that all the variables have a wide spread. The dissimilarities between the means and medians are large, with dividends/earnings (I) and (IV), leverage and profitability being the exceptions. Most standard deviations are larger than the means, except for leverage, growth opportunities (II) and (III), preference shares and ownership concentration. Even if all the listed corporations are segregated into two groups of dividend paying firms and non-payers, the median and mean of total dividends still differ greatly among dividend payers. These numbers indicate a great diversity among the listed companies concerning these variables, which foreshadows a low goodness of fit of the OLS model and an adjusted r-squared of well below 100%. This great heterogeneity among firms is also found in the samples of other studies (Denis & Osobov, 2008; Gugler & Yurtoglu, 2003; Szilagyi & Renneboog, 2007). The range of the different variables (e.g. growth opportunities (III)) is also analogous. The comparison with these studies is valid, because their samples contain Dutch and German companies (which are very similar to their Dutch counterparts). All in all, these numbers paint a realistic picture that is corroborated by the literature.



### 3.6 Bivariate analysis

Table 2: Pearson correlations of the OLS variables

	Leverage <sub>t-1</sub>	Growth opportunities <sub>t-1</sub> (I)	Growth opportunities <sub>t-1</sub> (II)	Growth opportunities <sub>t-1</sub> (III)	Preference shares <sub>t-1</sub>	(Ownership concentration) <sub>t-1</sub> <sup>2</sup>	Ownership concentration <sub>t-1</sub>	Profitability <sub>t-1</sub>	Size <sub>t-1</sub>
Expected sign	(-)	(-)	(-)	(-)	(-)	(+)	(-/+)	(+)	(+)
Dividends/earnings <sub>t</sub> (I)	0.22 ***	0.03	-0.42 ***	-0.18 **	0.10	0.05	0.07	-0.10	-0.05
Dividends/earnings <sub>t</sub> (II)	0.02	-0.13 *	-0.06	0.04	0.14 *	-0.05	-0.03	0.03	-0.02
Dividends/earnings <sub>t</sub> (III)	-0.06	-0.03	-0.08	0.00	-0.12	-0.07	-0.07	0.04	0.09
Dividends/earnings <sub>t</sub> (IV)	-0.19 **	-0.13 *	0.25 ***	0.16 **	0.04	-0.12 *	-0.13 *	0.16 **	0.02
Leverage <sub>t-1</sub>		0.17 **	-0.30 ***	0.12 *	0.10	-0.03	-0.01	-0.23 ***	0.14 *
Growth opportunities <sub>t-1</sub> (I)			-0.02	-0.02	-0.07	0.01	0.01	-0.27 ***	-0.16 **
Growth opportunities <sub>t-1</sub> (II)				0.70 ***	-0.08	-0.06	-0.08	0.03	-0.12 *
Growth opportunities <sub>t-1</sub> (III)					0.00	-0.02	-0.01	-0.06	0.03
Preference shares <sub>t-1</sub>						-0.08	-0.11	-0.06	0.14 *
(Ownership concentration) <sub>t-1</sub> <sup>2</sup>							0.97 ***	-0.02	-0.18 *
Ownership concentration <sub>t-1</sub>								0.00	-0.23 ***
Profitability <sub>t-1</sub>									-0.01
Observations	119	119	119	119	119	119	119	119	119

For the definitions of the variables, I refer to table 1. The expected sign indicates the direction of the relationship. The asterisks (\*) denote the significance levels of the relationships. \*\*\*. Correlation is significant at the 0.01 level (1-tailed). \*\* . Correlation is significant at the 0.05 level (1-tailed). \* . Correlation is significant at the 0.10 level (1-tailed).

The following correlations involving the dependent variables are statistically significant. The significance level is stated at the end of each independent variable:

- Dividends /EBIT
  - Leverage (0.01)
  - Growth opportunities (II) (0.01)
  - Growth opportunities (III) (0.05)
- Dividends/net income
  - Growth of total assets (0.10)
  - Preference shares (0.10)
- Dividends/total assets
  - Leverage (0.05)
  - Growth opportunities (I) (0.10)
  - Growth opportunities (II) (0.01)
  - Growth opportunities (III) (0.05)
  - (Ownership concentration)<sup>2</sup> (0.10)
  - Ownership concentration (0.10)
  - Profitability (0.05)

From these results, one can see that dividends/total assets is significantly related to the most independent variables. Dividends/revenues does not have any significant relationships, casting doubt on this measure's validity of dividends/earnings. It becomes apparent that growth opportunities (II) (i.e. Tobin's q) has the most statistically significant correlations (0.01), with dividends/EBIT and dividends/total assets, but the relationship with dividends/total assets is positive (as opposed to the expected negative sign). These mixed results are in line with the assertion of Szilagyi and Renneboog (2007) that Tobin's q does not yield robust results. The relationship between dividends/EBIT and leverage is also especially strong. However, the relationship is not negative as expected, but positive. This is an interesting find and casts doubt on leverage being utilized as a substitute for dividends, but rather as a complement. Leverage is also correlated, though not as strongly, with dividends/total assets, but this relationship does bear the expected negative sign. Again, different operationalizations of the same variable produce opposing results. The other relationships are significant to a lesser degree, but still noteworthy.

Ownership is more concentrated in civil law countries (Choy et al., 2011; Shleifer & Vishny, 1996) and it could be that the large shareholders force the company to pay out more dividends, without attempting to expropriate minority shareholders. Having said that, (ownership concentration)<sup>2</sup> is significantly correlated with dividends/total assets, but the sign is negative instead of positive. This means that the relationship could have an inverted U-shape. As ownership concentration increases, so does the dividend payout ratio, but at a certain entrenchment level, dividends start to diminish as ownership concentration rises, implying that from that point on majority owners can exploit their position of power and expropriate minority shareholders by reducing the dividend payout ratio for personal gain. This agency explanation could account for this result, but it is by no means certain. Some additional calculations were performed in order to check if the entrenchment level lay at around 30% ownership concentration for dividends/total assets. They show that the entrenchment level lies at 50.13%. This level is well above 30% and due to the inverted U-shape, companies have their highest dividend payout ratio at this entrenchment level (as opposed to lowest).

Many of these results do not have the expected sign (e.g. dividends/net profit with preference shares). These results underline the fact that the various agency relationships are highly dependent on how the variables are operationalized, which means that the results are



not robust. Of the control variables, only profitability correlates significantly with dividends/total assets.

Until now I have only discussed the relationships involving dividends/earnings, but the purpose of table 2 is also to show possible collinear relationships between independent variables. The following significant relationships can be seen in table 2:

- Leverage
  - Growth opportunities (I) (0.05)
  - Growth opportunities (II) (0.01)
  - Growth opportunities (III) (0.10)
  - Profitability (0.01)
  - Size (0.10)
- Growth opportunities (I)
  - Profitability (0.01)
  - Size (0.05)
- Growth opportunities (II)
  - Growth opportunities (III) (0.01)
  - Size (0.10)
- Preference shares
  - Size (0.10)
- (Ownership concentration)<sup>2</sup>
  - Ownership concentration (0.01)
  - Size (0.10)
- Ownership concentration
  - Size (0.01)

All explanatory variables have significant relationships with the control variable 'size', with ownership concentration being the most significant. Profitability is only related to leverage and growth of total assets, but both relationships are significant on the 1% level. (Ownership concentration)<sup>2</sup> has a very significant relationship with ownership concentration, which was expected, because they are essentially the same variable. Growth opportunities (II) and (III), both expressions of the market-to-book ratio, are also closely correlated, but unrelated to the growth of total assets. Denis and Osobov (2008) distinguished the growth of total assets and the market-to-book ratio as two different methods of measuring future growth. My results support this distinction. The other relationships between seemingly independent explanatory variables are leverage and all three operationalizations of growth opportunities. I control for these collinearities in preliminary analysis, but also by performing multiple regressions with different variables in section 4, to see how much more explanatory power the OLS model gains from adding independent variables.

**Table 3: two-sample t-test for the use of preference shares as a takeover defense**

	preference shares as takeover defense	non-users	Difference	t-value
<b>Expected sign</b>			<b>(+)</b>	
Dividends/earnings (I)	0.25	-1.08	-1.33	0.31
Dividends/earnings (II)	0.51	0.28	-0.23	-1.69**
Dividends/earnings (III)	0.03	0.16	0.13	1.23
Dividends/earnings (IV)	0.03	0.03	0	0.52
<b>Observations</b>	58	61		

Table 3 displays companies which use preference shares as a takeover defense and those that do not. For the definitions of the variables, I refer to table 1. The dilution capacity of 50% has been taken as the threshold for a takeover defense. This creates two groups: users of preference shares as takeover defense and non-users. In their columns their respective average dividend payout ratios are depicted. 'Difference' is calculated by subtracting the ratios of the users from the non-users. The expected sign indicates the direction of the relationship. The asterisks (\*) denote the significance levels of the relationships. \*\*\*. Correlation is significant at the 0.01 level (1-tailed). \*\*. Correlation is significant at the 0.05 level (1-tailed). \*. Correlation is significant at the 0.10 level (1-tailed).

From a preliminary analysis, it became clear that almost 70% of all firms in the sample pay out dividends. More than half of these companies use preference shares as an anti-shareholder provision with a diluting capacity of more than 50%. Having said that, in terms of total dividend amount non-users do pay out more on average (88,335.10 thousand euros) than users (61,281.36 thousand euros). This is in line with hypothesis 3, because based on the outcome model of agency theory, one would expect that the managers of these corporations are so insulated from shareholder disciplining mechanisms, that shareholders would be unable to make managers disgorge dividends. However, total dividend payout is not my dependent variable. The dividend payout ratio corrects total dividends for earnings, giving a fairer view. This is depicted in table 3. Up until now, the use of preference shares has been treated as a continuous variable, while in hypothesis 3 I delineated this as a dichotomous variable. In table 3 it can be seen that only the relationship between preference shares and dividends/net profit is statistically significant (0.05). Preliminary analysis indicated that on average, companies with a diluting capacity of more than 50% pay out less dividends, but corrected for earnings, they pay out more dividends. This significant result contradicts hypothesis 3. When this result is looked at from the perspective of substitution (La Porta et al., 2000), it makes sense that managers pay out more dividends/earnings, since firms have to signal to shareholders, on whom they depend for financial resources, of their unwillingness to exploit them. This may indicate that shareholders of corporations that use preference shares need more assurance of the manager's goodwill, because preference shares exacerbate the agency problem. That could be the reason why users of preference shares as a takeover defense have a higher dividend payout ratio than non-users.

In section 4, I go into more depth with a multivariate analysis and try to determine if the results of the bivariate analysis still hold and if other significant relationships might be uncovered.

## 4 Results and Discussion

### 4.1 Results

**Table 4: Multivariate OLS regression results**

Regression		Expected sign	Dividends/earnings <sub>t</sub>			
			I	II	III	IV
1	$\beta_0$		2.13	0.56	-0.39	0.02
	Profitability <sub>t-1</sub>	(+)	-3.55 (-1.09)	0.11 (0.34)	0.09 (0.36)	0.03 (1.80**)
	Size <sub>t-1</sub>	(+)	-0.18 (-0.58)	-0.01 (-0.29)	0.02 (0.96)	0.00 (0.27)
	R <sup>2</sup>		0.01	0.00	0.01	0.03
	R <sup>2</sup> adjusted		0.00	-0.02	-0.01	0.01
2	$\beta_0$		0.15	0.53	-0.31	0.03
	Profitability <sub>t-1</sub>	(+)	-1.40 (-0.46)	0.12 (0.39)	0.05 (0.18)	0.02 (1.37*)
	Size <sub>t-1</sub>	(+)	-0.23 (-0.77)	-0.01 (-0.31)	0.03 (1.03)	0.00 (0.50)
	Leverage <sub>t-1</sub>	(-)	7.34 (2.31**)	0.08 (0.25)	-0.20 (-0.77)	-0.03 (-1.72**)
	R <sup>2</sup>		0.05	0.00	0.01	0.05
R <sup>2</sup> adjusted		0.03	-0.02	-0.01	0.05	
3	$\beta_0$		9.81	0.78	-0.15	0.00
	Profitability <sub>t-1</sub>	(+)	-1.04 (-0.34)	-0.09 (-0.26)	0.09 (0.30)	0.02 (1.05)
	Size <sub>t-1</sub>	(+)	-0.36 (-1.24)	-0.02 (-0.58)	0.03 (0.95)	0.00 (0.25)
	Growth opportunities <sub>t-1</sub> (I)	(-)	0.10 (0.12)	-0.15 (-1.52*)	-0.01 (-0.12)	-0.01 (-1.07)
	Growth opportunities <sub>t-1</sub> (II)	(-)	-5.06 (-5.56***)	0.00 (0.03)	-0.01 (-0.14)	0.01 (2.61***)
	Growth opportunities <sub>t-1</sub> (III)	(-)	1.10 (2.44***)	-0.03 (-0.57)	-0.03 (-0.65)	0.00 (-0.56**)
	R <sup>2</sup>		0.25	0.03	0.02	0.12
R <sup>2</sup> adjusted		0.22	-0.02	-0.02	0.08	
4	$\beta_0$		8.67	0.63	0.02	0.01
	Profitability <sub>t-1</sub>	(+)	-0.57 (-0.18)	-0.03 (-0.07)	0.02 (0.07)	0.02 (0.93)
	Size <sub>t-1</sub>	(+)	-0.39 (-1.36*)	-0.03 (-0.76)	0.03 (1.15)	0.00 (0.26)
	Leverage <sub>t-1</sub>	(+)	1.60 (0.46)	0.19 (0.48)	-0.24 (-0.72)	-0.02 (-1.02)
	Growth opportunities <sub>t-1</sub> (I)	(-)	0.09 (0.11)	-0.14 (-1.47*)	-0.01 (-0.10)	0.00 (-0.84)
	Growth opportunities <sub>t-1</sub> (II)	(-)	-4.81 (-4.72***)	0.03 (0.29)	-0.05 (-0.50)	0.01 (1.89**)
	Growth opportunities <sub>t-1</sub> (III)	(-)	0.99 (2.00**)	-0.04 (-0.75)	-0.01 (-0.27)	0.00 (-0.11*)
	Preference shares <sub>t-1</sub>	(-)	1.72 (0.94)	0.30 (1.41*)	-0.24 (-1.38*)	0.01 (0.60)
	R <sup>2</sup>		0.26	0.05	0.04	0.13
R <sup>2</sup> adjusted		0.21	-0.02	-0.02	0.07	
5	$\beta_0$		8.41	0.50	0.18	0.03
	Profitability <sub>t-1</sub>	(+)	-0.53 (-0.17)	-0.06 (-0.16)	0.02 (0.06)	0.02 (0.89)
	Size <sub>t-1</sub>	(+)	-0.38 (-1.25)	-0.02 (-0.63)	0.03 (0.88)	0.00 (-0.05)
	Leverage <sub>t-1</sub>	(-)	1.64 (0.47)	0.18 (0.44)	-0.25 (-0.75)	-0.02 (-1.08)
	Growth opportunities <sub>t-1</sub> (I)	(-)	0.10 (0.11)	-0.15 (-1.47*)	-0.01 (-0.13)	0.00 (-0.89)
	Growth opportunities <sub>t-1</sub> (II)	(-)	-4.80 (-4.55***)	0.05 (0.41)	-0.06 (-0.60)	0.01 (1.70**)
	Growth opportunities <sub>t-1</sub> (III)	(-)	0.99 (1.94**)	-0.05 (-0.87)	-0.01 (-0.18)	0.00 (0.01)
	Preference shares <sub>t-1</sub>	(-)	1.74 (0.94)	0.31 (1.45*)	-0.25 (-1.44*)	0.01 (0.48)
	(Ownership concentration) <sup>2</sup> <sub>t</sub>	(+)	0.72 (0.08)	-0.95 (-0.93)	0.09 (0.11)	0.00 (-0.03)
	Ownership concentration <sub>t-1</sub>	(-/+)	-0.23 (-0.03)	0.84 (0.82)	-0.25 (-0.30)	-0.02 (-0.29)
R <sup>2</sup>		0.26	0.06	0.05	0.14	
R <sup>2</sup> adjusted		0.20	-0.02	-0.03	0.07	
Observations			119	119	119	119

For the definitions of the variables, I refer to table 1. The expected sign indicates the direction of the relationship. Each relationship is quantified with the regression coefficient and the t-value (in table 4, this is depicted as 'regression coefficient (t-value)'). Table 4 consists of five different multivariate regressions. The first regression serves as a default situation, including only the control variables 'profitability' and 'firm size'. The second regression includes leverage. The third regression adds growth opportunities, but excludes leverage. The fourth regression includes all the previous variables and preference shares. Lastly, all variables are encompassed in the fifth regression. So basically, with every next regression (except for regression 3), more variables are added to understand how the statistical significance of relationships are affected by introducing other variables. The sequence of the additions of variables follow the order of the hypotheses. Admittedly, this is an arbitrary choice and in order to truly give an exhaustive list of all possible relationships, more regressions would have to be performed, but the results are not significantly affected by the order in which the variables are included (or excluded). Collinearities within the OLS model have been checked for in the preliminary analysis. I also controlled for heteroskedasticity and the normal distribution of the error term in the preliminary analysis. The asterisks (\*) denote the significance levels of the relationships. \*\*\*. Correlation is significant at the 0.01 level (1-tailed). \*\*. Correlation is significant at the 0.05 level (1-tailed). \*. Correlation is significant at the 0.10 level (1-tailed).

Analyzing the results of table 4, the following significant relationships can be discerned from table 4 with the significance level stated at the end of each relationship:

#### Regression 1

- Dividends/total assets and profitability (0.05)

This result concurs with the bivariate analysis. Regression 1 serves as the control situation for the other regressions. The r-squared values are very low, with the adjusted r-squared even being less than 0 for dividends/net profit and dividends/revenues.

#### Regression 2

- Dividends/EBIT and leverage (0.05)
- Dividends/total assets:
  - profitability (0.10)
  - Leverage (0.05)

These relationships are consistent with the bivariate analysis, but the significance levels have decreased for leverage from 0.01 to 0.05. The expected negative sign for leverage is only present with dividends/total assets. The adjusted r-squared increases very little and for dividends/net profit and dividends/revenues it remains the same, which means that leverage adds little in terms of explaining the dividend payout ratio.

#### Regression 3

- Dividends/EBIT:
  - Growth opportunities (II) (0.01)
  - Growth opportunities (III) (0.01)
- Dividends/net profit and growth of total assets (0.10)
- Dividends/total assets:
  - Growth opportunities (II) (0.01)
  - Growth opportunities (III) (0.05)

For regression 3, leverage has been omitted from the model, because of its collinear relationships with growth opportunities (II) and (III). Collinearity also exists between growth opportunities (I) and (II), but preliminary analysis has not produced results significantly different from table 4. These results correspond with those of the bivariate analysis, except for growth of total assets not being significantly related to dividends/total assets. The relationships involving all three variables of growth opportunities provide mixed signs, which means that a negative correlation between the dividend payout ratio and growth opportunities cannot be robustly established. The adjusted r-squared is the same for dividends/net profit and

dividends/revenues, but for the other dividends/earnings it increased, especially for dividends/EBIT, which rose to 22%. This denotes a relatively large explanatory merit that growth opportunities add to the OLS model.

#### Regression 4

- Dividends/EBIT
  - Size (0.10)
  - Growth opportunities (II) (0.01)
  - Growth opportunities (III) (0.05)
- Dividends/net profit
  - Growth of total assets (0.10)
  - Preference shares (0.10)
- Dividends/revenues and preference shares (0.10)
- Dividends/total assets
  - Growth opportunities (II) (0.05)
  - Growth opportunities (III) (0.10)

Regression 4 encompasses all the variables of hypothesis 1, 2, 3 and 4. In addition to the relationship between preference shares and dividends/net income, the use of preference shares is also related to dividends/revenues, which was not uncovered in the bivariate analysis. Similarly, another unexpected finding is that size is related to dividends/EBIT, but as a control variable it is not relevant for any of the hypotheses. Similar to the previous regressions, the signs are mixed and inconsistent with the expected signs. The relationships from the previous regressions are still significant, except for dividends/total assets with leverage, but this is caused by the collinearities between leverage and all three variables of growth opportunities. From the preliminary analysis it was determined that these collinearities had no significant effect on the values of the adjusted r-squared, which are the same or lower than those of regression 3, casting doubt on the added predictive value of preference shares in the OLS model.

#### Regression 5

- Dividends/EBIT
  - Growth opportunities (II) (0.01)
  - Growth opportunities (III) (0.05)
- Dividends/net profit
  - Growth of total assets (0.10)
  - Preference shares (0.10)
- Dividends/revenues and preference shares (0.10)
- Dividends/total assets and growth opportunities (II) (0.05)

Regression 5 is the most complete multivariate regression, taking into account all the variables. Many relationships found in regression 4 are still significant, except for the correlations between dividends/EBIT and size, and between dividends/total assets and growth opportunities (III). Regression 5 yields no relationships between ownership concentration and dividends/earnings, which is not in accordance with the bivariate analysis. It may seem artificial to include two ownership concentration variables that are based on the same data. I have checked for this by including each variable separately and the results do not differ significantly from those presented in table 4. Separate inclusion of the two forms of ownership concentration does diminish their p-values (not shown in table 4), but not lower than the minimum of 10% that is needed to be deemed significant. This control was part of a larger preliminary check for collinearities based on the results of the bivariate analysis. As

stated before, the results of the preliminary analysis are not significantly different from the results shown in table 4.

It becomes evident that the OLS model explains little of the residual data, as can be seen from the low r-squared values. The adjusted r-squared decreased or remained constant, indicating little to no added explanatory value.

## 4.2 Discussion

The results cast doubt on the explanatory value of this OLS model. The negative adjusted r-squared values of dividends/earnings (II), (III) are virtually not found in the corporate finance literature. The adjusted r-squared values of dividends/earnings (I) and (IV) are low (especially dividends/earnings (IV), but not unheard of in the literature (Farinha, 2003; Maury & Pajuste, 2002; Mitton, 2004). This means that these variables partly explain dividends/earnings of firms and that a larger part is determined by other factors, once again establishing the fact that this is a very complex phenomenon. Regression 3 had the largest adjusted r-squared value (0.22), indicating that the independent variables of growth opportunities explain the behavior of dividends/earnings (I) far better than the other independent variables.

The results as a whole are mixed and inconclusive, because many independent variables do not have significant relationships with dividends/earnings and the ones that do, produce contradictory signs. For example, the use of preference shares is positively related to dividends/net profit, but negatively related to dividends/total assets. This poses a problem to derive any conclusions from the results. In terms of explanatory value, one can see that the OLS model of dividends/EBIT has by far the highest r-squared and adjusted r-squared (>20%) out of all four operationalizations of dividends/earnings after regression 2. Of these featured relationships, growth opportunities II (i.e. Tobin's q) is statistically the most significant (<1%) and consistently has a strong negative relationship with dividends/EBIT (-4.80 in regression 5). The variable growth opportunities (I) (i.e. the growth of total assets) does not seem to be related to dividends/EBIT. Although both are operationalizations of growth opportunities, one can argue, as I have done earlier, that Tobin's q is a better predictor of future growth than the growth of total assets, which entails by definition only past growth (Denis & Osobov, 2008). However, growth opportunities III (market capitalization/owners' equity) is positively related to dividends/EBIT and, like Tobin's q, is also an expression of the market-to-book ratio. The signs of these two relationships contradict each other, but Tobin's q is both stronger in significance (regression 5) and effect than growth opportunities II. That is why I consider Tobin's q to be a better representation for the actual relationship between dividends/EBIT and growth opportunities, but this incongruence between the two attests to the low robustness of the OLS model. Although alternative theories have not been exhaustively controlled for, one can still state that this finding is in line with the outcome model of dividend payout and the main results of LaPorta et al. (2000).

Leverage in regression 2 is significantly related to dividends/EBIT and dividends/total assets, but its sign is strongly positive and weakly negative, respectively. The adjusted r-squared of regression 2 is actually higher for dividends/total assets (0.05) than dividends/EBIT (0.03), but the difference is small. The statistical significance of this relationship with leverage disappears when growth opportunities are introduced to the OLS model. I already mentioned the collinearities between these variables, but it could also imply



that the relationship of leverage with dividend/earnings is spurious. Moreover, the two significant relationships contradict each other in sign. Thus hypothesis 1 cannot be confirmed.

The quantification of preference shares as a continuous variable in the OLS model, produces mixed results. Although evidence in favor of hypothesis 3 (i.e. a negative relationship) was found with dividends/revenues, dividends/net profit shows the opposite. Seeing as how net profit is a purer form of earnings than revenue, it casts doubt on the robustness of the proposed relationships, which is a pervasive problem throughout this analysis. The relatively weak legal position of shareholders urges them to want as much dividends as they can receive, but when the company's growth opportunities increase, the managers can then reduce this amount without much trouble from shareholders. The use of preference shares follows this line of reasoning when one looks at its relationship with dividends/revenues, but its relationship with dividends/net profit points to the substitute model, where insulated managers have to assure shareholders by paying out more dividends. However, as stated earlier, in the OLS model preference share use is a continuous variable, in contrast to being defined as an antitakeover provision (i.e. with a diluting capacity over 50%), which is the case in hypothesis 3. Comparing these mixed multivariate results with the results of the bivariate analysis (see table 3) it becomes apparent how important it is to not only look at the mere presence of preference share capital, but also at how great its diluting capacity is. Moreover, any inferences about dividends/earnings II and III have to be made with caution, because of the extremely low and even negative adjusted r-squared. For these reasons I give precedence to the results brought forth by the two-sample t-test over those of the OLS model concerning preference shares. Users of preference shares as takeover defenses have a higher dividends/ net profit than non-users. Therefore I reject hypothesis 3.

The OLS model has been unable to produce any significant results for ownership concentration, as opposed to the bivariate analysis, that revealed the unexpected finding of an inverted U-shape relationship between ownership concentration and dividends/total assets. Before the critical entrenchment level, the increase of ownership concentration is accompanied with an increase in the dividend payout ratio, but it appears that after this critical point, though higher in my research (critical entrenchment at 50.13%) than the hypothesized 30% ownership concentration, majority shareholders gain so much influence, that they reduce the dividend payout ratio, leaving minority shareholders with few other choices than to comply. The OLS model is more extensive than the bivariate one, which by definition only describes the relationship between two variables without any consideration of the (confounding) effects of third variables. It could be that these significant relationships found in the bivariate analysis are just spurious, because they are not present in the OLS model, which is a more extensive analysis. Due to these validity issues, I cannot make inferences that support hypothesis 4 based on these results.



## 5 Conclusion

### 5.1 Conclusion

The research question of my thesis is: **What effects do the agency problems of managers versus shareholders and majority versus minority shareholders have on the dividend payout ratio in The Netherlands?** To answer this question, I set up the following hypotheses, with the type of agency problem stated at the end of each hypothesis:

1. *The leverage ratio is negatively related to the dividend payout ratio.* (managers versus shareholders)
2. *Growth opportunities are negatively related to the dividend payout ratio.* (managers versus shareholders)
3. *Firms that use preference shares as a takeover defense have a lower dividend payout ratio than firms that do not utilize such preference share capital.* (managers versus shareholders)
4. *Ownership concentration has a quadratic relationship with the dividend payout ratio: ownership concentration is negatively related to the dividend payout ratio below an entrenchment level of 30%, but positively related above that critical level.* (majority versus minority shareholders)

Only hypothesis 2 is strongly corroborated by the results of this thesis, but the other empirical findings also shine an interesting light on the agency problem's influence on the dividend payout ratio in The Netherlands of publicly listed non-financial companies in 2007. With regard to answering the research question, the first form (managers versus shareholders) appears severe, based on the fact that the outcome model of dividend payout seems to apply to The Netherlands. Managers can decrease the dividend payout ratio without shareholders having the necessary clout to effectively influence the managerial decision. However, the other significant result concerning preference share use as a takeover defense seems to point in the direction of the substitute model of dividend payout. Although preference shares have no direct relation to growth opportunities, the results support the underlying principle of managers wanting to retain and attract investors by paying out high dividends. Thus, it is difficult to assess if a weak shareholder position also equals a low dividend payout ratio. The severity of the third form (majority versus minority shareholders) is difficult to determine from the OLS model, due to its inability to produce any significant results for ownership concentration, as opposed to the bivariate analysis that revealed the unexpected finding of an inverted U-shape relationship between ownership concentration and the dividend payout ratio, but no conclusions can be drawn from this.

This thesis can help principals and agents develop a better understanding of each other's position in business by showing them how to perceive certain dividend amounts in light of a firm's growth and other important firm-specific factors. Like I said, other papers have already paved the way, but research in general is a collective effort and without confirmatory/falsifying researches like my own, those papers' results would not carry the significant explanatory merit that they do. Scientific results only hold meaning if they are corroborated by others. Aside from that fact, it is also true that the agency literature on The Netherlands is not as extensive as that on many common law countries, such as The United States. My thesis synthesizes elements of agency theory common in The Netherlands (e.g. preference share use) with elements that are associated with macro-economics in general (e.g. growth opportunity). This way my thesis conveys more depth to and understanding of agency

theory in The Netherlands. Therefore it forms a relevant addition to the existing body of scientific work and requires more research.

## 5.2 Limitations and future research

In this thesis I examined the influence of aspects of the agency problem of the first and third form on the dividend payout ratio. Due to time and data constraints, I had to selectively choose what factors I wanted to research and in what context. The year 2007, for example, was chosen, because the dividend and preference share data from that year were the most time-efficient to collect. The lag of one year helped me to improve the validity of my thesis, but the fact that the dependent variable was only from one year (as opposed to multiple years) diminishes the reliability, since there will always be a fluctuation between years. One year may not be representative for the next year. Averages over longer periods of time are more reliable, but this was not attainable due to the time and data constraints.

I utilized the control variables 'firm size' and 'profitability' to control for any spurious relationships. For a more thorough scientific research one has to employ more than two control variables. For instance, the identity of the shareholders (e.g. institutional or private owner) was not explored, even though the literature speaks of this as an important factor (Farinha, 2003; Szilagyi & Renneboog, 2007). Industry-specific factors can also influence the results considerably, for example, if an industry expands/contracts due to an external economic shock which affects the dividend policy. This limitation is somewhat inherent to a heterogeneous sample like my own. Another related limitation is the construction of my sample: I excluded financial firms, because they have different financial reporting standards, but arguments can be made to also preclude other companies: Szilagyi and Renneboog (2007) omitted the utility sector due to its regulation of external financing and dividend policy. The main reason why I did not discard more firms (including outliers) was due to the fact that my sample was already small and ignoring even more companies would jeopardize the integrity of my sample size.

None of the relationships showed themselves to be robust, because the significance, coefficient values and expected signs differed greatly among the various operationalizations of earnings and growth opportunities. Maybe the most limiting factor of my entire thesis is the fact that all the values of the adjusted r-squared are low, which is indicative of a poor explanatory capacity.

The results related to growth opportunities (i.e. Tobin's q) support the outcome model of dividend payout (La Porta et al., 2000), which presumes that the dividend payout ratio reflects the weak position of shareholders and their inability to force managers to pay out higher dividends. However, the other significant result concerning preference share use as a takeover defense seems to point in the direction of the substitute model of dividend payout (La Porta et al., 2000). This theoretical discrepancy could be explained by the heterogeneity among firms within a country that affect the dividend payout ratio more profoundly than only the effect of the national legal governance system.

The unexpected discovery in the bivariate analysis of a significant inverted U-shaped relationship between ownership concentration and the dividend payout ratio should be another topic for future research, even though it was not replicable in the OLS model (the significant levels were not far, but still above 10% for both forms of ownership concentration). If this finding is corroborated by other researchers, then it can be tested if the proposed agency explanations in this thesis are true: Why does this occur in The Netherlands and is there empirical evidence for this inverted U in other countries? This extrapolation to other countries could provide valuable insights into the generalizability of this specific relationship and open the door to a whole new understanding of how agency theory influences dividend policy, since it appears to contradict the U-shaped managerial entrenchment model (Farinha, 2003).

In conclusion, I am well aware of the limits and descriptive nature of my thesis. To truly do the agency theory justice, one would have to focus on one specific aspect of agency theory and apply a more sophisticated research design in order to exclude competing explanatory theories (e.g. life-cycle theory). These features of a more in-depth academic paper were not possible for me to attain within the context of constraints. More research has to be done on this subject to solve ‘the dividend puzzle’ (Black, 1998).

## Literature references

- Adjaoud, F., & Ben-Amar, W. (2010). Corporate governance and dividend policy: shareholders' protection or expropriation?. *Journal of Business Finance & Accounting*, 37(5-6), 648-667.
- Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *The quarterly journal of economics*, 488-500.
- Babbie, E. R. (2012). *The practice of social research*. Wadsworth Publishing Company.
- Baker, M., & Wurgler, J. (2004). A catering theory of dividends. *The Journal of Finance*, 59(3), 1125-1165.
- Black, F. (1998). The dividend puzzle. *Streetwise: The Best of "The Journal of Portfolio Management"*, 10.
- Bøhren, Ø., Josefsen, M. G., & Steen, P. E. (2012). Stakeholder conflicts and dividend policy. *Journal of Banking & Finance*.
- Choy, H., Gul, F. A., & Yao, J. (2011). Does political economy reduce agency costs? Some evidence from dividend policies around the world. *Journal of Empirical Finance*, 18(1), 16-35.
- DeAngelo, H., DeAngelo, L., & Skinner, D. J. (2004). Are dividends disappearing? Dividend concentration and the consolidation of earnings. *Journal of Financial Economics*, 72(3), 425-456.
- Denis, D. J., & Osobov, I. (2008). Why do firms pay dividends? International evidence on the determinants of dividend policy. *Journal of Financial Economics*, 89(1), 62-82.
- De Vaus, D. (2001). *Research design in social research*. SAGE Publications Limited.
- De Jong, A., Mertens, G., & Roosenboom, P. (2006). Shareholders' voting at general meetings: Evidence from the Netherlands. *Journal of Management & Governance*, 10(4), 353-380.
- Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. *The American Economic Review*, 74(4), 650-659.
- Fama, E. F., & French, K. R. (2001). Disappearing dividends: changing firm characteristics or lower propensity to pay?. *Journal of Financial economics*, 60(1), 3-43.
- Farinha, J. (2003). Dividend policy, corporate governance and the managerial entrenchment hypothesis: an empirical analysis. *Journal of Business Finance & Accounting*, 30(9-10), 1173-1209.
- Fatemi, A., & Bildik, R. (2012). Yes, dividends are disappearing: Worldwide evidence. *Journal of Banking & Finance*, 36(3), 662-677.
- Francis, B. B., Hasan, I., John, K., & Song, L. (2011). Corporate governance and dividend payout policy: A test using antitakeover legislation. *Financial Management*, 40(1), 83-112.
- Grullon, G., & Ikenberry, D. L. (2000). What do we know about stock repurchases?. *Journal of Applied Corporate Finance*, 13(1), 31-51.
- Gugler, K., & Yurtoglu, B. B. (2003). Corporate governance and dividend pay-out policy in Germany. *European Economic Review*, 47(4), 731-758.
- Hoberg, G., & Prabhala, N. R. (2006, March). Dividend policy, risk, and catering. In *Rice seminar*.
- Hölmstrom, B. (1979). Moral hazard and observability. *The Bell Journal of Economics*, 74-91.
- Jensen, M. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *Corporate Finance, and Takeovers. American Economic Review*, 76(2).

- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4), 305-360.
- La Porta, R., Lopez de Silanes, F., Vishny, R., & Shleifer, A. (2000). Agency problems and dividend policies around the world. *Journal of finance*, 60(1), 1-33.
- Manos, R. (2003). Dividend policy and agency theory: Evidence from Indian firms. *South Asia Economic Journal*, 4(2), 275-300.
- Maury, C. B., & Pajuste, A. (2002). Controlling shareholders, agency problems, and dividend policy in Finland. *LTA*, 1(02), 15-45.
- Miller, M. H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *the Journal of Business*, 34(4), 411-433.
- Mitton, T. (2004). Corporate governance and dividend policy in emerging markets. *Emerging Markets Review*, 5(4), 409-426.
- Renneboog, L., & Trojanowski, G. (2007). Control structures and payout policy. *Managerial Finance*, 33(1), 43-64.
- Salas, J., & Chahyadi, C. (2004). Is there a Lower Propensity to Pay Dividends? A Decomposition of Dividend Payers. *A Decomposition of Dividend Payers (February 28, 2006)*.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, 52(2), 737-783.
- Szilagyi, P., & Renneboog, L. (2007). How Relevant is Dividend Policy Under Low Shareholder Protection?. *ECGI-Finance Working Paper*, (128).
- Von Eije, J., & Megginson, W. (2006). Dividend policy in the European Union. *Available at SSRN 891035*.

## Dutch summary

Het opstellen van het dividendbeleid behoort tot de belangrijkste taken van managers in de huidige financiële wereld. Echter, wat voor een functie dient het uitkeren van dividenden? Volgens het baanbrekende artikel van Modigliani en Miller (1961) is in een perfecte wereld het dividendbeleid van bedrijven irrelevant en zou men het dus niet moeten uitmaken wat managers besluiten met betrekking tot dividenden. In de perfecte wereld heeft iedereen gelijke toegang tot dezelfde informatie en zijn bedrijfsbesluiten wrijvingsloos (geen transactiekosten). Deze ideale omstandigheden zijn onrealistisch, maar ze geven wel belangrijke inzichten in hoe het dividendbeleid wordt opgesteld en welke factoren hierbij een rol spelen. Dit probleem ontstaat onder andere doordat in de echte wereld niet alle informatie voor iedereen toegankelijk is. In een bedrijfscontext is het klassieke voorbeeld de verhouding tussen de manager (de agent) en de investeerder (de principaal). Investeerders zijn de eigenaren van het bedrijf en managers de bestuurders. Deze splitsing in de aparte rollen van eigenaren en bestuurders heeft tot gevolg dat managers beter weten hoe het financieel ervoor staat met het bedrijf dan aandeelhouders. Zij beheren het kapitaal van investeerders en overzien ook de dagelijkse bedrijfsactiviteiten, taken die aandeelhouders omwille van efficiëntie hebben overgedragen aan hen. Deze informatiekloof tussen partijen noemt men informatieasymmetrie, een concept dat de kern treft van agency-theorie (Jensen & Meckling, 1976). De splitsing tussen eigenaarschap en bestuur bewerkstelligt niet alleen informatieasymmetrie, maar ook een divergentie in belangen. Omdat managers kapitaal beheren dat niet van hen is, kunnen ze ook persoonlijk profiteren ten koste van aandeelhouders (bijvoorbeeld investeren in riskante projecten die een hoge bonus opleveren voor managers). Om het risico op dit exploitatiegedrag te minimaliseren, moeten aandeelhouders toezicht houden op het werk van managers en dit brengt kosten met zich mee die worden aangeduid als agency-kosten. Dividenden kunnen een effectief instrument zijn om deze agency-kosten te verlagen doordat bij uitkering aandeelhouders verzekerd zijn van een resultaat op hun investering en managers hiermee hun goede wil tonen. Een constante uitbetaling van dividenden kan ervoor zorgen dat het bedrijf afhankelijk wordt van nieuwe investeerders, waardoor het zich telkens moet onderwerpen aan de rigoureuze controles van de aandelenmarkt (Easterbrook, 1984).

De agency-probleem kent verschillende varianten. (1) managers versus aandeelhouders, (2) aandeelhouders versus crediteuren en (3) meerderheids- versus minderheidsaandeelhouders. Variant 1 van het agency-probleem is het klassieke probleem, maar variant 3 is ook zeer relevant in Nederland, net als in andere landen met een juridisch stelsel dat behoort tot het 'civil law'-systeem (Choy et al., 2011; Shleifer & Vishny, 1996; La Porta et al., 2000). De meerderheidsaandeelhouder heeft over het algemeen meer invloed op de gang van zaken binnen een bedrijf en daarmee ook meer informatie dan de minderheidsaandeelhouder. Door deze informatieasymmetrie komt de belangenbehartiging van de minderheidsaandeelhouder in het gedrang.

In mijn these onderzoek ik wat voor invloed het agency-probleem heeft op het dividendbeleid. De hoofdonderzoeksvraag luidt: **Wat is het effect van de agency-problemen van managers versus aandeelhouders en meerderheids- versus minderheidsaandeelhouders op de dividenuitkeringsratio in Nederland?** Ik stelde de volgende hypothesen op om deze vraag te beantwoorden (achter elke hypothese staat welke agency-variant het meest relevant is):

1. *De leverage-verhouding heeft een negatieve relatie met dividenden/inkomsten.* (managers versus aandeelhouders)



Leverage is de verhouding tussen vreemd vermogen en totale activa. Vreemd vermogen is rentedragend, wat betekent dat het bedrijf deze rente moet afbetalen, wil het niet wettelijk gedwongen worden tot faillissement door crediteurs. Het verhogen van de leverage en daarmee het relatieve vreemd vermogen zorgt ervoor dat managers beperkt worden in hun vrijheid en verplichtingen krijgen om de rente te betalen. Dit verlaagt de agency-kosten voor aandeelhouders en naar verwachting ook de behoefte aan dividenden, omdat hun functie is gesubstitueerd door het verhogen van het vreemd vermogen (Easterbrook, 1984).

2. *Investeringsmogelijkheden hebben een negatieve relatie met dividenden/inkomsten.*  
(managers versus aandeelhouders)

Het outcome-model en het substitute-model geven alternatieve verklaringen voor de invloed van het nationale juridische systeem op het agency-probleem (Bøhren, et al., 2012; Easterbrook, 1984; La Porta et al., 2000). Het outcome-model voorspelt dat bedrijven meer dividend uitkeren omdat aandeelhouders, al dan niet in een zwakkere positie, wettelijk ingestelde rechten hebben, die bedrijven verplicht dividend uit te betalen. Dit is een 'outcome' (resultaat) van het juridisch stelsel in een land. Over het algemeen bieden 'civil law'-landen (zoals Nederland) slechtere wettelijke bescherming aan aandeelhouders dan 'common law'-landen (bv. de Verenigde Staten). Volgens dit model is de mogelijkheid tot uitkering van dividend in Nederland in die zin beperkter voor aandeelhouders. Echter, het substitution-model voorspelt het tegenovergestelde. Bedrijven keren juist meer dividend uit in 'civil law'-landen in vergelijking met 'civil law'-landen in het outcome-model. Ditmaal is het dividendbeleid geen 'outcome' van het juridisch stelsel, maar een 'substitute' (vervanging) ervan. Om te compenseren voor de zwakkere positie van aandeelhouders, keren bedrijven meer dividend uit, om transparantie uit te stralen en goede wil te tonen (La Porta et al., 2000).

3. *Bedrijven die preferente aandelen gebruiken als een beschermingsconstructie tegen overnames hebben lagere dividenden/inkomsten dan bedrijven die hier geen gebruik van maken.* (managers versus aandeelhouders)

Het gebruik van preferente aandelenkapitaal door bedrijven is een vorm van beschermingsconstructie die bij ruim 70% van de Nederlandse beursgenoteerde bedrijven voorkomt. In het geval dat men een poging doet tot een vijandige overname, kunnen managers preferente aandelen toekennen aan bedrijfsvriendelijke partijen voor een aanbataling van slechts 25% van de nominale waarde. Door veel preferente aandelen van het maatschappelijk kapitaal uit te keren, bewerkstelligt het management een snelle verwatering van het geplaatste kapitaal, waardoor het gevaar van een vijandige overname effectief kan worden geneutraliseerd (Szilagyi & Renneboog, 2007). Op deze manier is het management erg geïsoleerd van aandeelhouders stemrecht. Dit verslechtert de positie van aandeelhouders ten opzichte van managers en ik verwacht dat de dividenden/inkomsten zullen dalen, omdat aandeelhouders niet genoeg invloed op het management kunnen uitoefenen. Voor hypothese 3 kwalificeerde ik conservatief een verwateringscapaciteit van 50% of meer van het totale kapitaal (maatschappelijk plus geplaatst) als een beschermingsconstructie.

4. *Ownership concentration heeft een kwadratisch verband met dividenden/inkomsten: ownership concentration heeft een negatieve relatie met dividenden/inkomsten onder een entrenchment-niveau van 30%, maar een positieve relatie boven dat entrenchment-niveau.*  
(Meerderheids- versus minderheidsaandeelhouders)

Een belangrijke theorie die het agency-probleem met betrekking tot dividendbeleid probeert te verklaren, is het entrenchment-model (Farinha, 2003). Dit model beschrijft de relatie tussen dividenden en meerderheidsaandeelhouders. Men gaat ervan uit dat zowel dividenduitkering als de aanwezigheid van meerderheidsaandeelhouders de kosten van het agency-probleem



verlagen. Dividenduitkering aan aandeelhouders vermindert de interne vrije kasstroom zodanig, dat de managers van het bedrijf niet de gelegenheid hebben om die te investeren in projecten die nadelig zijn voor aandeelhouders. Ook de aanwezigheid van meerderheidsaandeelhouders, die de middelen hebben om toezicht te houden en invloed uit te oefenen op managers, zorgt ervoor dat men binnen de firma geen besluiten neemt die afwijken van de belangen van aandeelhouders. Slechts een van beide factoren hoeft aanwezig te zijn om de agency-kosten te verlagen, dus naarmate de concentratie van meerderheidsaandeelhouders stijgt, dan daalt de hoeveelheid dividenden dat wordt uitgekeerd, aangezien volgens dit model het niet nodig is om de agency-kosten nog meer te verlagen met dividenden. Als men een grafiek zou tekenen hiervan, met dividenden/inkomsten op de verticale as en ownership concentration op de horizontale as, dan neemt de grafiek een U-vorm aan. Dit komt omdat de concentratie meerderheidsaandeelhouders slechts tot een bepaald entrenchment-niveau kan stijgen (en de dividenduitkeringsratio kan dalen), daarna begint variant 3 van het agency-probleem een rol te spelen. De sterkere aandeelhouder oefent een zodanige invloed uit op het bedrijf, dat hij een groter deel van de inkomsten zich toe-eigent en hiermee de zwakkere aandeelhouder benadeelt. Dit noemt men ook wel rent extraction (Gugler & Yurtoglu, 2003). Dividenden zijn opnieuw vereist om de informatie-asymmetrie te verkleinen.

De steekproef van dit onderzoek bestaat uit 119 Nederlandse niet-financiële bedrijven in het jaar 2007 die genoteerd stonden op de Euronext Amsterdam effectenbeurs. De data van dividenden en preferente aandelen waren verzameld uit de 'Effectengids: gids bij de officiële prijscourant van Euronext Amsterdam (2007/2008)' en (2008/2009). De laatste versie van deze gids kwam uit in 2009 met de meest recente gegevens over dividenden uit 2007. Vandaar dat ik de (arbitraire) keuze gemaakt heb voor 2007, omdat zo de data het meest efficiënt konden worden verzameld. De informatie over bedrijfsspecifieke eigenschappen (zoals nettowinst) waren verkregen met behulp van de databasis Orbis van Bureau van Dijk en jaarverslagen. Het belangrijkste statistische onderzoek werd uitgevoerd met behulp van een two-sample t-toets en de volgende ordinary least squares (OLS) model: **(Dividenden/inkomsten)<sub>t</sub> = β<sub>0</sub> + β<sub>1</sub>\*(Leverage)<sub>t-1</sub> + β<sub>2</sub>\*(Investeringsmogelijkheden)<sub>t-1</sub> + β<sub>3</sub>\*(Preferente aandelen)<sub>t-1</sub> + β<sub>4</sub>\*(Ownership concentration)<sub>t-1</sub><sup>2</sup> + β<sub>5</sub>\*(Controle variabelen(winstgevendheid en grootte van het bedrijf))<sub>t-1</sub> + e.**

De resultaten van de statistische toetsen laten zien dat dividenden/inkomsten van bedrijven dalen als er meer investeringsmogelijkheden zijn. Dit komt overeen met het outcome-model. Er is ook empirisch bewijs gevonden voor de relatie tussen preferente aandelen en dividenduitkering. Bedrijven met een verwateringscapaciteit van 50% of meer betaalden gemiddeld meer dividenden/inkomsten uit dan de andere bedrijven (de niet-gebruikers), een bevinding die hypothese 3 weerlegt. De U-vorm van het entrenchment-model heb ik niet gevonden. Onverwacht laten de bevindingen zien dat er een significant omgekeerd U-vormig verband bestaat tussen ownership concentration en dividenden/inkomsten. Het verband lijkt dus op een bergparabool met een entrenchment-niveau waarop de meeste dividenden worden uitgekeerd, maar als de ownership concentration vanaf dat punt stijgt, daalt de dividenduitkering. Dit entrenchment-punt blijkt ook hoger te liggen dan 30% (ongeveer 50,13%). Een verklaring hiervoor kan zijn dat na dit punt, grootaandeelhouders zo'n groot deel van het bedrijf in bezit hebben dat ze besluiten minder dividenden uit te keren, zodat dat aandeel dat naar minderheidsaandeelhouders zou gaan, zij nu voor zichzelf kunnen houden. Overigens moet duidelijk vermeld worden dat dit omgekeerde U-verband alleen aanwezig was in de bivariate analyse. In het OLS-model bleek ownership concentration geen verband te hebben met dividenden/inkomsten. Dit werpt de vraag op of de relatie misschien slechts een schijnverband is dat verklaard kan worden door een derde variabele. Door dit

probleem kan hypothese 4 niet bevestigd worden. Een ander groot probleem betreft het OLS-model als geheel: geen enkele relatie bleek consequent te zijn in het produceren van soortgelijke resultaten voor de verschillende operationalisaties van 'inkomsten' en 'investeringsmogelijkheden', met zowel negatieve als positieve tekens voor in principe dezelfde verbanden. Dit duidt op een zwakke robuustheid van de resultaten en belemmert het verklaringsvermogen van het OLS-model.

Vanwege het beschrijvende karakter van mijn these, kan ik niet met zekerheid zeggen dat uitsluitend de agency-theorie deze resultaten verklaart. Diepergaand onderzoek is nodig om dit te bevestigen. De omgekeerde U-verband tussen ownership concentration en dividenden/inkomsten zou ook verder onderzocht moeten worden. Indien dit door andere onderzoekers wordt bevestigd, kan dit tot nieuwe inzichten leiden wat betreft de invloed van agency-theorie op het dividendbeleid.