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"Do Independent Boards Pay Higher Dividends?"

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Abstract

This study provides additional insights into the relation between board independence and the corporate pay-out policy. The enactment of the Sarbanes-Oxley Act and subsequent change of listing rules creates a natural experiment and makes it possible to perform an examination of the effect of board independence on dividends. Based on a sample of 619 US industrial firms from the period 1996-2014, I find that firms who did not have a majority of independent directors in the pre-SOX period experience a significantly larger increase in dividend pay-out ratios in the post-SOX period than firms who already had a majority of independent directors in the pre-SOX period. The increase in dividend pay-out ratios is smaller for firms with substantial block holders, since they substitute for independent directors as external monitors. I find no support for this substitution effect in highly leveraged firms.

Keywords: Corporate Governance, Pay-out Policy, Board Structure, Independent Director, SOX

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1. Introduction

As Carl Icahn recently illustrated in his open letter to Apple Inc.'s chief executive officer Tim Cook[1], the distribution of excess cash to shareholders is still a topic of heated debate. Off course, due to the enormous magnitude of Apple Inc. and the reputation of Carl Icahn, this is an extreme case. Nevertheless, over the past decade, corporate boards have received much more attention from activist investors[2]. This open letter from Carl Icahn for example, demonstrates that shareholders have specific preferences with respect to dividends and that these shareholders play an important role in the dividend policy of a company. The relation between corporate governance on the one hand and the corporate pay-out policy on the other, will form the main discussion of this study.

It may not come as a surprise that shareholders like Carl Icahn are worried when corporations are sitting on large amounts of cash, since those who legally have ownership are not the ones who control the company (Berle and Means, 1932). Due to this separation of ownership and control, shareholders like Carl Icahn are normally less informed about the daily affairs of the company than the managers, since it is impossible for them to monitor management on a daily basis. This information asymmetry could lead to conflicts of interest. Leaving large amounts of free cash flow available for management thus creates a risk for these shareholders, since they are uncertain if management will use these funds in the best interest of the shareholder. In the worst case scenario, managers can use these internal funds to increase their own utility at the expense of the shareholder. For instance, they can simply steal the profits, pay excessive salaries or grow their firms beyond optimal size (Jensen, 1986). In order to prevent this undesired behaviour by the management, shareholders can encourage companies to implement a set of rules and mechanisms that help to align the interests of managers and shareholders. As Al-Malkawi and Pillai (2012) show, these rules and mechanisms can take a variety of forms, such as dividend pay-outs, board composition, financial leverage, institutional shareholdings, CEO compensation and many others. Unfortunately, as the failures at Enron and WorldCom have shown us, these corporate governance mechanisms are not always effective in protecting the shareholders. Monitoring by the board for instance, was not effective enough to prevent these managers from engaging in fraudulent practices at the expense of the shareholders. As a response, the US government introduced the Sarbanes-Oxley Act in 2002, which was a set of rules and regulations intended to be a permanent solution to this management misbehaviour. In the years following, many researchers have tested the consequences and effectiveness of these newly imposed rules. The focus of this research will be on the new listing rule by the NYSE, which requires the majority of the board of directors to comprise of independent directors. Using the introduction of the SOX as a natural experiment, Seo,

[1] New York, May 18, 2015 http://www.shareholderssquaretable.com/carl-icahn-issues-open-letter-to-tim-cook/
[2] Francis, T., 2016, "Boards get more independent, but ties endure", *The Wall Street Journal*, Jan 19th

Tompkins and Yi (2015) already showed that increased board independence can affect corporate cash holding practices and the value of cash to shareholders. Guo and Masulis (2015) used the NYSE listing rule to examine the causal relation between board structure and CEO monitoring and showed that more independent boards lead to more effective CEO monitoring and disciplining. Sharma (2011) tested the effect of independent directors on the propensity to pay dividends and found that a firm's propensity to pay dividends is positively related to board independence. Based on these prior studies, I will test if there is an effect between increased board independence and the dividend pay-outs of a company, in order to see if these 'independent directors' are indeed better monitors and better representatives of shareholders' interests. In other words, I will test if the implementation of SOX and subsequent requirements on board independence improved corporate governance and increased shareholder protection in US industrial firms.

The aim of this thesis is to test whether or not the dividend pay-out policy of corporations is affected by an external corporate governance mechanism: the introduction of the Sarbanes-Oxley Act. Designed and implemented to increase the quality of corporate governance, the 2002 introduction of SOX also triggered the New York Stock Exchange and NASDAQ to implement some new listing rules. One of which was to increase the number of independent directors on the board with the aim to increase effective monitoring and improve corporate governance. Board systems and board structures vary between countries. The US, and many other countries with the Anglo-Saxon model, have one-tier board systems where all the directors (both executive and non-executive) form one board. This board of directors thus consists of those who run the company and those who should be supervising them. In a two-tier board structure, mostly used in countries with the Rhineland model, the executive directors (executive board) are separated from the non-executive directors (supervisory board). Advantages of the one tier model are the sharing of knowledge and the timely disclosure of information between directors, which minimizes the possible "knowledge gap" between executives and non-executives and makes the decision making process faster. A disadvantage of this model is that only one single body is empowered with the management and supervision of the company, whilst in the two tier model there is a clear distinction between the supervisory and management functions within the company. The most important disadvantage however, which forms the basis for this study and the newly imposed listing rule, is the risk that non-executive directors align too much with executive directors, making them less independent. This research examines if this mandatory rule, which requires the majority of the board of directors to comprise of independent directors, has an effect on the dividend policy of US corporations.

Moreover, I am interested to see if the dividend pay-out ratio of non-compliant firms in the pre-SOX period increased after the enactment of the Sarbanes-Oxley act and subsequent requirements on board independence.

This results in the following research question to be answered:

RQ**: Is there a statistical significant effect between board independence and the dividend pay-out ratio of US industrial firms?**

In order to provide an answer to this research question, the following sub questions will be examined and answered in this research:

1. What theoretical framework is used in this study? Which relevant theories and prior research form the basis of this framework?
2. Which hypotheses and research methods are developed and used to test the research question?
3. What are the empirical results of this research and how can these results be interpreted?
4. What is the conclusion of the study?

This study contributes to existing literature, because it focuses on the effect that a mandatory rule on board composition had on the dividend pay-out policy of a company. The implementation of these new listing rules created a new research opportunity, making it possible to compare pre and post period dividend policies. The results of this study could provide more insights to policy makers about the effectiveness of their newly imposed rules. Prior research already indicated that the number of independent directors can influence the corporate pay-out policy. This study is unique, because it focuses on companies who did not have a majority of independent directors in the period before the new listing rules. These companies had the opportunity to increase corporate governance quality by appointing more independent directors, but choose not to, suggesting that some agency conflicts could be present in these organisations. On the other hand, it could well be that these companies already are faced with intensive external monitoring by block-holders, pension funds or the market for corporate control, suggesting that independent directors have less added value in these organisations (Harford, Mansi and Maxwell, 2008). It is therefore interesting to see if and how their dividend policy changed after the mandatory introduction of more independent directors on the board.

The principal-agent conflict and associated agency theory forms the basis of the discussion. Jensen and Meckling (1976) suggest that managers can allocate resources to activities that benefit them privately, but are not in the shareholders' best interest. The associated costs are at the expense of the shareholders and depend on the degree in which management has an opportunity to engage in these sub-optimal transactions. I focus on a combination of two corporate governance mechanisms known to reduce agency costs; dividends and board independence. Dividends are used to reduce the resources available for managers and, according to Jensen (1986), limit their opportunity to use this cash for private benefits. Board independence can also act as an effective corporate governance mechanism, since independent board members are better challengers of CEO performance and increase monitoring effectiveness. By combining the above theories, I expect that board independence improves monitoring quality and is able to affect the dividend pay-out policy of a company. Prior research

indeed acknowledge that there is a causal relation between board independence and dividends, suggesting that the number of independent board members influences the pay-out policy of a firm. The question is *how* these two relate, since prior research provides mixed results about the sign and magnitude of this causal relation. A positive relation would suggest that board independence and dividends play complementary governance roles, suggesting that greater board independence leads to higher dividend payments. A negative relation supports the substitution effect, suggesting that greater board independence leads to lower dividend payments. All in all, a causal relation between board independence and dividends is still not clear in the previous literature and is still an open empirical question.

This paper tries to fill this gap by taking advantage of the SOX as a natural experiment. By mandating a majority of independent directors on the board in 2002, the new listing rules made it possible to compare the behaviour of non-compliant firms to those that already had a majority of independent board members. This research uses a difference-in-difference methodology to compare the dividend pay-outs in the pre- and post-SOX period of companies who are affected by the new listing rules relative to those who already had a majority of independent directors on the board. In addition, I will test if this effect is smaller for firms who are already subject to external monitoring by block holders and suppliers of debt.

The results of this study show that firms who are obligated to take on a majority of independent directors on the board increased their dividend pay-out ratio after the SOX. These results suggest that independent board and dividends play complementary governance roles. Having a larger representation of independent directors thus resulted in higher dividend payments and hence improved shareholder protection. Especially the firms whose board consisted predominately of non-independent directors in the pre-SOX period are seriously affected by the new listing rules. In addition, I find that the increase in dividend pay-out ratios is smaller for firms with substantial block holders, indicating that these large shareholders substitute for independent directors as external monitors. I find no support for this substitution effect in highly leveraged firms.

1.1 Structure of the research

The structure of this research will follow the same order as the sub questions mentioned above. Chapter 2 will is designed to provide background information about the subject of corporate governance and the relation between board independence and dividends. The relevant theories and studies that are discussed in this chapter are used to develop a theoretical framework and provides an answer to sub question 1. Based on this theoretical framework, Chapter 3 will provide the hypotheses development and research design. The results of this empirical research will be analysed and discussed in Chapter 4. The conclusion of this study will be discussed in Chapter 5.

2. Theoretical Framework

This chapter provides insight in the subject of corporate governance as well as the relation between board independence and dividends. A literature review will be conducted, which will form the basis for the theoretical framework. In order to develop this framework and to provide and answer to the first sub question, the following topics will be discussed:

1. What is corporate governance and why is good governance important? What are the basic underlying theories?
2. How did the enactment of the Sarbanes-Oxley act (SOX hereafter) affect corporate governance? What where the consequences for the board of directors?
3. In what way do board of directors affect corporate governance? How can board composition function as an effective corporate governance mechanism?
4. In what way does the pay-out policy of a company affect corporate governance? How can dividends function as an effective corporate governance mechanism?
5. How do board independence and dividend pay-outs relate? Is there prior research available, which indicates or suggests a causal link between board independence and dividend pay-outs?
6. Are there any other factors that drive the dividend pay-out decision?

The following paragraphs will discuss the relevant theories and studies that are related to these questions.

2.1 Corporate governance and the separation of ownership and control

In its narrowest sense, corporate governance describes a system of rules, practices and processes by which a company is directed and controlled. It is about the structures and processes in place to facilitate and monitor effective management of a company, including mechanisms to ensure legal compliance and prevent improper or unlawful behaviour (Edwards and Clough, 2005). Moreover, it is a system of supervision to provide shareholders with the necessary information to hold management liable for their decisions.

The need for these above mentioned rules and mechanisms find their origin in the separation of ownership and control, first described by Berle and Means (1932) and further developed by Jensen and Meckling (1976). Berle and Means explore the evolution of modern corporations and discuss the possible problems that can arise from the separation of ownership and control. They identified that those who legally have ownership over companies are not the ones who control the company, which could lead to conflicts of interest. If those who have ownership over the company are also widely dispersed, problems may arise. Largely dispersed shareholders collectively have incentives to monitor the management of the firm for which they own stock. Individually, however, they are uninterested in

the daily affairs of the company. It is impossible for them to monitor management on a daily basis, especially when they hold stakes in multiple companies. This potential free rider problem can lead to a lack of shareholder involvement. The results is that those who are interested in the daily affairs, being the management and directors, will obtain full discretion in the decision making process and managing of the firm. With only limited shareholder involvement, these insiders have the ability to manage resources to their own advantage. By doing so, they can extract value from the company at the expense of the shareholders. As a result, the ones who own the company are expropriated by those who control the company.

Jensen and Meckling (1976) describe the separation of ownership and control as a possible conflict of interest between a principal and the agent. They view the agency relationship as a contract under which one or more persons (principal) engage another person (agent) to perform services on their behalf. In the corporate setting, the principal refers to the shareholders of a company. These shareholders delegate some decision making authority to the management (agent) of a company. In the ideal situation, management will always act in the best interest of the shareholder and management will only make the right decisions that will increase shareholder value. Unfortunately, there is good reason to believe that this will not always be the case. Jensen and Meckling assume that both the shareholder and the management will try to maximize their own utility, resulting in a conflict of interest. For instance, managers tend to be more risk-averse than the shareholders of a company. The main goal of a shareholders is to maximize the pay-off on his investment. Managers however, are less optimistic about the future performance of the actions and investments they can undertake. As a result, they will take less risks and decline investment opportunities that could increase the market value of the company. In the absence of any rules or agreements, managers can allocate resources to activities that benefit them privately, but are not in the shareholders' best interest. The associated costs are at the expense of the shareholders and depend on the degree in which management has an opportunity to engage in these sub-optimal transactions. In order to align the interests of the shareholder and management, a set of rules, practices and processes can be adopted to ensure that the agent will make optimal decisions from the principal's point of view. Jensen and Meckling argue that it is impossible to realize this optimal decision making at zero cost and refer to these associated costs as *agency costs*. In their paper, they distinguish between three types of agency cost: monitoring costs, bonding costs and residual costs. Monitoring costs occur when the shareholder tries to observe, measure or control the behaviour of the management. For instance through budget restrictions, compensation policies or operating rules. The costs are born by the shareholder for supervising the activities of the managers. Bonding costs can include costs that are associated with the appointment of external auditors to check the financial accounts or contractual limitations on the manager's decision making power. Residual costs occur when management still engages in undesired behaviour, even though all contracts are optimal.

This agency theory and associated agency costs forms the pillar of the corporate governance mechanisms. Without any rules or mechanisms in place, management can increase their own utility at the expense of shareholders. This expropriation can take a variety of forms: managers can simply steal the profits, sell assets or securities at below pricing to another firm they own, pay themselves excessive salaries or engage in empire building. Effective corporate governance can help to reduce this opportunistic behaviour and limit a managers' ability to pursue private benefits. Corporate governance is thus a set of mechanisms through which outside investors protect themselves against expropriation by insiders (La Porta et al., 2000). The question is how well each governance mechanism is able to mitigate the principal and agent problems that arise in the company (Benjamin and Zain, 2015).

2.2 The effect of SOX on corporate governance and board composition

Corporate governance can be viewed as a portfolio of internal and external governance mechanisms. This section focuses on an influential external mechanism that changed the corporate governance landscape in the United States and countries around it: The introduction of the Sarbanes-Oxley Act.

The Sarbanes-Oxley Act became law on 30 July 2002 and was originally intended to be a permanent solution to management misbehaviour. Following the corporate scandals of Enron and WorldCom in 2002, the ultimate goal of the SOX was to restore investor confidence. The failures of Enron and WorldCom uncovered some serious weaknesses in the corporate governance systems, intended to protect investors. Not surprisingly, concerns about the actions of directors, auditors and accountants were growing rapidly amongst investors. These concerns and lost confidence emphasized the need for some set of rules and regulations to control these undesired actions. As a response, the SOX introduced a system of "checks and balances", which were implemented to establish five main objectives: (1) to strengthen the independence of auditing firms, (2) to improve the quality and transparency of financial statements and corporate disclosure, (3) to enhance corporate governance, (4) to improve the objective of research and (5) to strengthen the enforcement of the federal securities laws. In order to meet these objectives, the Securities and Exchange Commission introduced a large set of actions and provisions[3]. These new rules had great impact on the responsibilities of managers, directors, auditors and lawyers, but also on specific requirements of the board of directors. All companies that have equity securities listed on the New York Stock Exchange or the Nasdaq are submissive to these new board requirements, which are based on the Sarbanes-Oxley Act of the SEC and the corporate governance listing standards of the NYSE and Nasdaq (very similar to SOX)[4]. One of these new listing standards (section 303A.01)[5] requires that the majority of the board of directors

[3] Securities and Exchange Commission, 2003, "Summary of SEC actions and SEC related provisions pursuant to the Sarbanes-Oxley Act of 2002", *www.sec.gov/news/press/2003-89*
[4] Weil Public Company Advisory Group, 2013, "Requirements for public company boards", *unpublished*, 1-36
[5] New York Stock Exchange Manual, 2003, "303A Corporate Governance standards", *nysemanual.nyse.com*

comprise of independent directors. They argue that: "effective boards of directors exercise independent judgement in carrying out their responsibilities. Requiring a majority of independent directors will increase the quality of board oversight and lessen the possibility of damaging conflicts of interest". In other words, increasing the number of independent directors on the board will increase effective monitoring and improve corporate governance. The definition of an independent director, according to the NYSE listing standards (section 303A.02), can be summarized as follows:

> *Independent director is one whose board affirmatively determines that the director has no material relationship with the company, either directly or as a partner, shareholder or officer of an organisation that has a relationship with the company.*

In addition to these independence requirements, the NYSE also requires that annual reports must include director independence disclosure. Furthermore, boards must have an independent audit committee, and independent compensation committee and an independent nominating/corporate governance committee. As can be seen, a considerable number of governance and disclosure requirements have been imposed on boards and board committees through federal legislation, implementing rules and stock exchange listing rules (Weil Company Advisory Group, 2013).

In response to the recent financial crisis, another influential reform act was signed into federal law by president Obama in 2010. This act, known as the Dodd-Frank Wall Street Reform and Consumer Protection Act, was primarily concentrated on the financial service industry and was mainly introduced to prevent any recurrence of events that caused the 2008 financial crisis. Since financials and utilities are beyond the scope of this research and the Dodd-Frank Act also did not affect the requirements on board independence, this Act will not be discussed in more detail.

2.3 The monitoring and control function of the board

The board of directors play a vital role in the realization of corporate governance. It is their responsibility to oversee management on behalf of the shareholders and other stakeholders. Shareholders normally do not observe managers' actions and may not even know what actions management should have taken to maximize shareholder value (Tian, 2014). The board thus acts as agents of the shareholders and have the responsibility to advice, monitor and discipline management. Moreover, they have the legal authority to approve and monitor managerial initiatives, evaluate the performance of top managers, and reward or penalize that performance accordingly (Byrd and Hickman, 1992). The ultimate goal of a board of directors should be to protect and promote the interest of shareholders and to reduce agency costs (Al-Malkawi and Pillai, 2012). In the ideal setting, monitoring by the board of directors would be perfectly efficient, suggesting that all contracts and agreements are efficient and management only acts in the shareholders' best interest. Any undesired behaviour or sub-optimal decision making undertaken by management will be noticed and corrected

immediately by the board. In practice however, this will rarely be the case, since monitoring efficiency depends on a number of factors.

The role of the board of directors have received much attention for the past decade, especially since the regulatory reforms that require firms to have a majority of independent directors on the board. For the greatest part, these studies are based on the traditional agency view, where the emphasis is on the monitoring and control function of the board. With a focus on the negative role of managers, prior research on board effectiveness has primarily focused on board independence as a measure of board effectiveness (Gaur et al., 2015). These scholars argue that independent directors are better monitors because they typically are better challengers of CEO performance, have incentives to develop a reputation and generally own small equity stakes which limits their financial incentives (Guo and Masulis, 2015). These studies, however, show mixed results. Hermalin and Weisbach (1991) for instance, studied the effects of board composition on firm performance, and found no relation; suggesting that inside and outside directors are equally good or bad at representing the shareholders' interest. Other, more recent work, did find support for the hypotheses that independent directors are more efficient monitors. Guo and Masulis (2015), for instance, studied the effect of increased board independence on CEO turnover. They found that firms with a higher percentage of board independence significantly increased their forced CEO turnover sensitivity to performance, suggesting that greater board independence lead to better CEO monitoring and disciplining. Chen et al. (2015) studied the effect of increased board independence on earnings management. Their results showed a significant reduction in earnings management for firms that increased board independence, indicating that independent directors' monitoring is more effective. Opposite to these results, numerous studies have questioned the improved monitoring efficiency as a result of increased board independence. These scholars challenge the traditional agency view and base their predictions on other theories like the stewardship theory and stakeholder theory. Brennan (2006), for instance, divide the role of the board of directors into three separate categories: the strategic role, the monitoring & control role and the service role. Each category is based on a different theory. He claims that the relation between board composition and firm performance depends on the importance that board members give to certain roles. As mentioned before, the monitoring and control role of the board is based on the agency theory, where the board acts as agent on behalf of the shareholders. Following the agency theory, more independent directors would lead to better monitoring and increased shareholder wealth. The strategic role is based on the stewardship theory. The stewardship theory assumes that managers are essentially trustworthy and good stewards of the resources entrusted to them, which makes monitoring redundant (Davis et al., 1997). The stewardship theory is against having outsiders on the board, because these outsiders do not have enough knowledge about the strengths and weaknesses of the firm in order to provide any useful strategic advice. The service role of the board finds it origin in the stakeholder theory, which is based on the idea that not only shareholders, but all other stakeholders' interest should

be guarded and protected. It is therefore important to have representatives of all of these stakeholders in the board of directors. In practice, identification of all stakeholders is very difficult, which makes the stakeholder theory almost unsuitable for research purposes. Gaur et al. (2015) incorporated this stewardship and stakeholder theory in their research model and hypothesized that internal board members, opposite to independent board members, would make better decisions that would lead to superior performance. They argued that the emphasis should be on the advisory role instead of the more traditional monitoring and control role, suggesting a negative relation between board independence and firm performance. Based on a sample of New Zealand firms, the results indeed confirmed a negative relation between board independence and firm performance. For firms with highly dispersed ownership (and greater agency conflicts) however, they found a positive relation between independent directors and firm performance, suggesting that ownership concentration influences the power of independent directors. Schmidt (2015) also tested the theory that board independence is not always in the shareholders' best interest. He suggests that in situations in which board advice is more important than monitoring and control, independence can decrease value. By examining takeover returns in relation to board independence, his results showed that independent directors only create value when the monitoring needs are higher than the advising needs.

Based on the above findings, effective monitoring by the board thus depends on several different factors. Moreover, it is not self-evident that independent boards are automatically more effective and create more value than non-independent boards. When evaluating the effectiveness of an independent board, it is important to consider what type of role the board plays: strategic or advisory role, the monitoring & control role or the service role. This type of role depends on specific needs of the company, which is influenced by the concentration of ownership. High ownership concentration, for instance, suggests less agency problems, making the monitoring role of the board less relevant.

2.4 The agency view on dividends

According to Shleifer and Vishny (1997), corporate governance refers to the ways in which suppliers of finance assure themselves a return on their investment. When outside investors finance a firm, they face the risk that they will never receive the returns on their investment, because managers or controlling shareholders expropriate them. In order to minimize this expropriation, firms can use dividends to redistribute returns to investors. These dividend payments will reduce the amount of cash available to managers, limiting the opportunity to pursue private benefits. The following section will discuss the relevance and effectiveness of dividends as an internal corporate governance mechanism.

The literature on dividends mainly focuses on three theories: the signalling theory, the life cycle theory and the agency cost theory. The signalling theory assumes that firms use dividends to signal information about their future earnings potential. Insiders usually have more information about future

firm performance than outsiders and there is a tendency to signal this information through dividends. Petit (1972) refers to this as the informational content of dividends, and suggest that signalling can be used to reduce the information asymmetry between insiders and outsiders. Van Eaton (1999) for instance shows that the market reacts positively to the announcement of a dividend increase and strongly negative towards dividend decreases. This change in dividend is thus interpreted as a signal that management has a different prospect of future earnings than before. The signalling theory is predominately used in research that relates dividends or dividend announcements to future firm performance. Prior research suggest that dividends can only be paid if there is sufficient future cash flow available and that future earnings and cash flow uncertainty are important determinants of the corporate pay-out policy (Chay and Suh, 2009). The life cycle theory of DeAngelo, DeAngelo and Stulz (2006) predicts that growth opportunities can also affect the dividend policy. This theory is based on the notion that as companies become more mature, its ability to generate cash overtakes its ability to find profitable investment opportunities (Bulan and Subramanian, 2009). As a result, it becomes optimal for the company to distribute its free cash flow to shareholders as dividends. Young growth firms on the other hand, face relatively abundant investment opportunities and have limited resources available. Therefore, younger firms would prefer to use the available internal funds to finance their expansion rather than paying them out as dividends. As a result, mature firms pay a larger proportion of dividends compared to growth firms. The agency cost theory of dividends refers to the costs borne by the shareholders for monitoring managers' behaviour. Jensen (1986) refers to this problem as the free cash-flow problem. He points out that when managers have easy access to abundant internal funds, they have incentives to grow their firms beyond optimal size, because growth increases the amount of resources under their control. This creates a conflict of interest, since growth not always creates shareholder value. As a solution to this problem, Jensen suggests that excess cash should be returned to the shareholders. These pay-outs reduce the resources under management's control and thus minimizes the opportunity for a manager to pursue private benefits at the expense of the shareholders. By reducing the amount of cash available to the firm, a secondary advantage of paying dividends arises. As Easterbrook (1984) explains, lack of funds forces managers to approach capital markets to obtain external financing. These funds can only be obtained after complying with the disclosure regulations set by the suppliers of finance. The result will be that managers will incur the monitoring of the capital markets and at the same time have to disclose financial information. This will benefit the shareholders and reduce agency costs. La Porta, Lopez, Schleifer and Vishny (2000) specified two competing hypotheses on the relation between dividends and agency theory. In their paper, they discuss the agency view on dividends and identify some basic elements that drive the dividend pay-out decision. They distinguish between two different agency models of dividends: one where dividends can be regarded as an *outcome* of legal protection and another where dividends acts as a *substitute* for legal protection of shareholders. Under the first view, where legal protection is strong and effective, shareholders use these powers to force companies to pay (high) dividends. By

doing so, they leave them with less earnings available to squander for private benefits. Based on this *outcome* hypothesis, greater rights for shareholders lead to higher dividend payments. Under the alternative view, dividends are needed to establish a good reputation. By paying (high) dividends, the company signals that less funds are available for expropriation. This reputation is needed to raise external funds on attractive terms and hence is worth more in situations where legal protection of shareholders is weak. Based on this *substitution* hypothesis, dividends should be higher for companies with weak shareholder rights. By comparing the dividend pay-out ratio of companies from civil- and common law countries, La Porta et al.(2000) found that dividend payment where higher in common law countries as opposed to civil law countries, supporting their *outcome* hypothesis.

Based on the above theories and findings, it can be assumed that paying dividends could be an effective corporate governance mechanism, because it reduces the available resources under managers' control and increases monitoring by external markets. Dividends can thus serve to align the interests and minimize agency problems between managers and shareholders. As a result, the standard of governance and the protection of shareholders will increase. As La Porta et al. (2000) make clear, the level of shareholder protection can be an important proxy for the dividend pay-out ratio.

2.5 Prior research on board independence and dividends

This section discusses some prior research that indicates or suggests a causal link between board independence and dividend pay-outs. Following the introduction of the Sarbanes-Oxley act, the work on board independence and dividends can be divided into two periods: pre- and post-SOX research.

2.5.1 Related research in the pre-SOX period

Schellenger, Wood and Tashakori (1989) were one of the first scholars that studied the effect of board composition on dividend policy and shareholder wealth. Their paper was a reaction on the increased number of shareholder lawsuits against board of directors in that period, which put outside directors under pressure to pursue more actively the objective of maximizing shareholder wealth. They argued that dividends can be used as a mechanism to reduce agency costs and hypothesized that if outside directors are an effective monitoring device, board composition and dividend policy should be substitutes in the monitoring of agency costs. They examined the ratio of outside directors to total directors (OUT/DIR) in relation to the dividend ratio (DIV1) and two-year average dividend ratio (DIV2) for a randomly selected sample of 750 US industrial firms to test their hypothesis that OUT/DIR and DIV are correlated. The results of their study showed that OUT/DIR and DIV1 are not correlated, hence these findings do not support the hypothesis that dividends and outside directors are substitute mechanisms. For OUT/DIR and DIV2 on the other hand, the results showed a positive relation, suggesting that the composition of the board does have an influence on dividend policies. Bathala and Rao (1995) also study the relation between board composition and internal mechanisms that reduce agency problems. They hypothesize that individual firms choose an optimal board

composition depending on other mechanisms that are already employed by the firm to control agency conflicts. To test this hypothesis, they incorporate several different 'agency controlling mechanisms' proxies in their regression model, such as the dividend pay-out ratio, insider ownership, debt ratio and institutional holdings. Based on a sample of US industrial firms from 1986, their regression results shows an significantly inverse or negative relation between the ratio of outside directors on the dividend pay-out ratio, insider ownership and debt ratio. These results are consistent with their hypothesis that different agency controlling mechanisms can substitute for one another and that board composition depends on the existence of other mechanisms already in place. In response to this paper by Bathala and Rao, Cotter and Sylvester (2003) also studied board independence vs. other agency controlling mechanisms and extended their analysis to the composition of monitoring committees (audit and nominating committees). Cotter and Sylvester (2003) hypothesize that there is a negative relationship between the independence of boards of directors (and their nominating committee) and the extent of managerial ownership, dividend pay-out and leverage. What made their study unique, is that they studied the behaviour of Australian firms. During that time period, in contrast to the US, the formation and composition of audit and compensation committees were unregulated in Australia. Based on a sample of 200 listed Australian firms in 1997, their regression results showed no significant relation between independent boards and dividend pay-out. Moreover, their results did not support the hypothesis that independent audit- and nominating committees effect the dividend policy. Belden, Fister and Knapp (2005) extended the research of Schellenger et al. (1989) with more sophisticated statistical analyses. They used an OLS regression for a sample of 524 firms listed on the Forbes 500 list and found results that supported the hypothesis that firms with more outside directors pay higher dividends. Borokhovich, Brunarski, Harman and Kehr (2005) as well as Al-Najjar and Hussainey (2009), found opposite results. Borokhovich et al. (2005) studies the mean stock-price reaction surrounding the announcement of a dividend increases. Assuming that dividends benefit shareholders by reducing agency costs, firms with lower agency costs should benefit less. Their results showed that the mean stock-price reaction to dividend surprises is significantly lower for boards with a majority of outside directors. These results are in line with the substitution hypothesis, suggesting that more outside directors reduce agency costs and can function as a substitute for dividends. Al-Najjar and Hussainey (2009) also found evidence consistent with the substitution hypothesis. Motivated by the mixed results in prior research, they studied a sample of 400 non-financial UK listed firms in the period from 1991-2002. Using Tobit and Logit regression models, they tested their hypothesis that there is a relation between the number of outside directors on boards and the dividend pay-out ratio. Their results showed a negative relationship, indicating that firms with a higher number of independent directors pay lower dividends. As an explanation for this negative relation, they argue that firms with weak corporate governance need to establish a reputation by paying dividends.

2.5.2 Related research in the post-SOX period

All of the above described research papers drawn their conclusions on data that was collected in the period before the 2002 enactment of the Sarbanes-Oxley act. The introduction of this act and subsequent requirements on board independence inspired many scholars to use this natural experiment as a unique research opportunity. By mandating a majority of independent directors on the board, the introduction of SOX made it possible to examine and compare pre- and post-SOX firm behaviour. Since then, numerous scholars have used this new setting to examine the relation between board independence and dividend pay-outs. Sharma (2011), for instance, examined independent director characteristics in relation to dividend policy in the post-SOX period. Following the agency view, she argues that greater board independence improves internal monitoring and facilitates disciplining of management. Moreover, she argues that the new regulatory reforms expanded the roles of directors and altered how they should behave. Based on this arguments, she assumes that the propensity of a dividend pay-out will increase with greater representation of independent directors on the board, because these directors are more aware of the reputational and legal consequences of not protecting shareholders' best interest. In addition, she tests if specific characteristics such as CEO tenure, multiple directorships and equity compensation plans also have an effect on the propensity to pay dividends. Based on a sample of S&P 1500 index firms from 2006, she finds results in favour of the hypothesis that there is a positive association between the percentage of independent directors on the board and the propensity to pay dividends. Her results support the idea that independent directors use dividends to protect shareholders from expropriation. In addition, she finds evidence that specific director characteristics such as CEO tenure (+), multiple directorships (-) and equity compensation (-) also have a significant effect on the propensity to pay dividends. Yarram and Dollery (2014) find similar results when they study the effect of board characteristics on the dividend policy of Australian firms. They also report that board independence has a significant positive influence on the dividend pay-out, suggesting that dividends and independent directors play complementary governance roles. In addition to board independence, they consider several other explanations of the corporate dividend choice, such as the agency cost theory, signalling theory and the life cycle hypothesis. They use firm size as proxies for the agency cost view on dividends, suggesting that larger firms have lower investment opportunities and more free cash flow available. They found that firm size indeed had a significant positive influence on the dividend pay-out. Profitability and growth opportunities were used as proxies for the signalling and life cycle theory respectively. Yarram and Dollery reported a significant positive and negative influence for these two proxies on the dividend policy. They argue that firm use dividends to signal high (future) profitability and because dividends are costly, only profitable firms can engage in such commitments. Moreover, they argue that growth firms pay less dividends than mature firms, since growth firms have more investment opportunities available and might find it harder to obtain external capital. Opposite to these results, Seo, Tompkins and Yi (2014)

as well as Benjamin and Zain (2015) report findings in the post-SOX period that favour the substitution hypothesis, suggesting that increased board independence leads to lower dividend pay-outs. In their study, Seo, Tompkins and Yi (2014) use the 2002 SOX enactment and change of exchange listing rules as a natural experiment to study the effect of board independence on corporate cash holdings. By mandating a majority of independent directors on the board in 2002, the new listing rules made it possible to compare the behaviour of non-compliant firms to those that already had a majority of independent board members. More importantly, Seo, Tompkins and Yi argue that their paper provides endogeneity-free evidence, since they use an exogenous shock to show the causality between board independence and corporate cash holdings. When examining the effect of board independence on pay-out decisions, it is always a challenge to assess whether particular board attributes lead to certain decisions or whether boards that make certain decisions tend to have particular board attributes. By using the new listing rules as exogenous shock, this endogeneity problem is limited. Seo, Tompkins and Yi used a difference in difference methodology to compare the changes of corporate cash holdings after the SOX for firms which had a minority of independent directors on the board in the pre-SOX period with those of firms which already had a majority of independent directors on the board. Based on the agency theory, they argue that poorly governed firms are committed to pay dividends in order to reduce the amount of cash available under managements' control, resulting in small cash reserves for those firms. With more independent members on the board, corporate governance improves and shareholders allow managers to hold larger cash holdings. Their results supported the hypothesis that firms with a minority of independent directors in the pre-SOX period increased their cash holdings in the post-SOX period, suggesting that increased board independence leads to lower pay-outs by the firm. In addition, they found that this increase was smaller for financially constraint firms and firms that are already subject to a high degree of external monitoring, which suggests that these two proxies can substitute for board independence. Benjamin and Zain (2015) studied the effect of board independence on dividends in a Malaysian setting and found similar results. Based on a sample of 114 firms from the period 2002 to 2008, they studied the effect of board independence and board meeting frequency on dividend pay-outs. This study is particularly interesting, because it uses data from a country which is known for its weak corporate governance scene. As La Porta et al. (2000) made clear, countries like Malaysia do not have strong and well-enforced minority shareholders' rights. It is therefore interesting to see the effect of improved monitoring on dividend pay-out decisions in this setting. Following La Porta et al. (2000), firms in countries with weak shareholder rights are expected to pay higher dividends, because they have to establish a good reputation which is needed to raise external funds on attractive terms. By paying high dividends, they signal that less funds is available for expropriation. Assuming that independent board members are better monitors and better protectors of shareholders' interests than insiders, appointing more independent directors on the board would improve shareholder protection and corporate governance quality. Based on this theory, firms with a larger proportion of independent directors can

pay less dividends, since they already improved their reputation by appointing more independent directors. Benjamin and Zain tested this hypotheses and found a significant negative relationship between board independence (and board meeting frequency) and dividend pay-out for Malaysian firms. These results are in favour of the substitution hypotheses of La Porta et al, suggesting that board independence and dividends can function as substitutes in reducing agency costs, especially in countries with weak shareholder rights.

2.5.3 Summary of main findings

As the previously discussed literature makes clear, board independence can certainly affect the dividend policy of a company. Several studies found a significant relation between the number of independent board members and dividend pay-outs, confirming the causality between the two variables. As table 1 (Appendix 1) shows, scholars however find mixed results about the sign and magnitude of this causal relation. From the ten discussed research papers, four papers found a positive relation between board independence and dividends, suggesting that increased board independence leads to higher dividends payments. These findings are consistent with the outcome model of La Porta et al. (2000), suggesting that independent boards and dividends play complementary governance roles. The idea is that independent directors use dividends to protect shareholders from expropriation. From the remaining six research papers, five reported a significantly negative relation between board independence and dividends, suggesting that greater board independence leads to lower dividend pay-outs. These findings support the substitution hypotheses of La Porta et al. (2000), suggesting that board independence can substitute for dividends. The idea is that greater board independence improves the reputation of a company, allowing managers to hold larger cash holdings and pay less dividends. As La Porta et al. emphasize, the legal origin and level of shareholder protection can influence the effect of board independence on dividends. Based on their theory, the substitution effect would be more prevalent in countries were shareholder protection is limited. The findings of Benjamin and Zain, who study the effect in a Malaysian setting, confirm this belief. The findings of the common law studies (US, UK and Australian samples) on the other hand, show no clear predictable pattern. In these countries, shareholder protection is strong and well enforced, already giving shareholders the power to force companies to pay dividends. It is therefore interesting to see what the impact of greater board independence has on the dividend policy of these companies. Table 1 shows that the results of these eight common law studies are mixed, finding equal support for the outcome model (4) and the substitution model (4).

2.6 Other factors that drive the pay-out decision

When examining the effect of board independence on dividends, others factors that can influence the dividend policy should be taken into account as well. This section briefly discusses some firm specific characteristics that are known to affect the dividend pay-out ratio of a firm. Furthermore, some

additional corporate governance characteristics (other than board independence) that can help to mitigate the agency problem will be discussed.

2.6.1 Firm size

Based on the agency cost view of dividends, larger firms are expected to face higher agency costs compared to smaller firms. These large firms generally have a higher degree of separation of ownership and control, increasing the likelihood of conflicts of interest between managers and shareholders. Dividends can be used to reduce the amount of cash flow available for managers to use for private benefits, thereby aligning the interest of shareholders and management. In addition, firm size can also act as a proxy for the degree of information asymmetry in a firm. Typically, there is more information available about larger firms than there is for smaller firms. In order to reduce this information asymmetry, smaller firms may have to disclose more information or pay greater dividend pay-out than larger firms, suggesting that dividend payments would be higher for smaller firms. On the other hand, larger firms are more likely to be mature and therefore are expected to have easier access to capital markets. Compared to smaller firms, it is easier for these large mature firms to obtain new capital, suggesting that these firms should be able to pay more dividends. Based on these arguments, firm size may have a positive or negative influence on dividend pay-outs.

2.6.2 Profitability

Motivated by the signalling theory, profitability is also known to affect the dividend decisions of a company. Obviously, firms need to generate a profit in order to produce positive long term cash flows available for distribution. Higher profitability leads to higher levels of free cash flows, increasing the dividend paying capacity of a firm. A change in profitability can thus affect the firms' ability to distribute cash to shareholders. Others suggests that firms with high profitability use dividends to send strong signals about future profitability. Because dividends are costly, only profitable firms can engage in such commitments. When necessary, they approach the capital market to raise additional funds.

2.6.3 Growth

The life-cycle theory of DeAngelo, DeAngelo and Stulz (2006) predicts that growth opportunities can also affect the dividend policy. Based on this theory, they conclude that mature firms pay a larger proportion of dividends compared to growth firms. The basic assumption is that young growth firms face relatively abundant investment opportunities and have limited resources available. Therefore, younger firms would prefer to use the available internal funds to finance their expansion instead of paying them out as dividends. These firms are thus more likely to retain their earnings. Mature firms on the other hand, tend to have higher profitability and fewer attractive investment opportunities, making them better candidates to pay dividends.

2.6.4 Leverage

Following the free cash flow hypothesis of Jensen and Meckling (1986), the capital structure can also serve as a substitute mechanism for dividends in reducing the agency costs. Debt financing can reduce the amount of cash flow under managements' control and helps to mitigate the agency problem. The contractual obligations associated with debt can function as a disciplining mechanism, since debt obligates managers to produce sufficient cash flows to cover their interest payments. As a result, managers have less incentives to engage in sub-optimal activities. An increase in a firms' debt level should therefore lead to more conservative financial behaviour in order to maintain sufficient resources for the firm and lessen the probability of bankruptcy, loss of control and loss of reputation.

2.6.5 Ownership structure

Another corporate governance characteristic that can influence the dividend decision relates to the firms' ownership structure. As paragraph 2.1 already described, ownership concentration can have a large impact on the agency problems in a firm. Largely dispersed ownership for instance, can result in a lack of shareholder involvement, thereby increasing the possibility for managers to expropriate shareholders. Block-holders (or substantial shareholders), can serve to mitigate this potential agency conflicts. These substantial shareholders have incentives to monitor management intensively and can discipline them if necessary. Moreover, the large cash flow stake held by these shareholders provides an incentive to monitor management, since the expected return on holding a large block of shares exceeds the monitoring costs involved (Cotter and Sylvester, 2003). Based on this argument, firms with a greater representation of substantial shareholders are expected to achieve superior monitoring, resulting in less conflicts of interest between managers and shareholders.

2.7 Summary and conclusion

The agency theory and associated agency costs forms the pillar of this corporate governance discussion. Since those who legally have ownership over companies are not the ones who control the company, conflicts of interest can arise between shareholders and managers. Without any rules or mechanisms in place, management can increase their own utility at the expense of the shareholders. Effective corporate governance mechanisms can help to reduce this opportunistic behaviour and limit a managers' ability to pursue private benefits. The failures of Enron and WorldCom showed what can happen when these corporate governance mechanisms are not in place or are ineffective. These scandals uncovered some serious weaknesses in the corporate governance systems of US firms. As a response, the Sarbanes-Oxley Act introduced a set of "checks and balances" to improve corporate governance and restore investor confidence. These new rules had great impact on the responsibilities of managers, directors, auditors and lawyers, but also on specific requirements of the board of directors. One of these rules requires that the majority of the board of directors comprise of independent directors. They argue that a majority of independent directors will increase the quality of

board oversight and lessen the possibility of damaging conflicts of interest. Guo and Masulis (2015) and Chen et al. (2015) found results in support of this hypothesis, suggesting that independent directors are indeed more effective monitors. As Brennan (2006), Gaur et al. (2015) and Schmidt (2015) point out however, effective monitoring by the board also depends on several other factors. It is not self-evident that independent boards are automatically more effective and create more value than non-independent boards. When evaluating the effectiveness of an independent board, it is important to consider what type of role the boards play: strategic or advisory role, the monitoring & control role or the service role. This type of role depends on specific needs of the company. Just like board independence, dividends can also function as an effective corporate governance measure. Paying dividends reduces the available resources under managers' control and increases monitoring by external markets. Dividends can thus serve to align the interests and minimize agency problems between managers and shareholders. As a result, the standard of governance and the protection of shareholders will increase.

Many scholars studied the effect of board independence on dividends. Several studies found a significant relation between the number of independent board members and dividend pay-outs, confirming the causality between the two variables. As table 1 (Appendix 1) shows, scholars however find mixed results about the sign and magnitude of this causal relation. From the ten discussed research papers, four papers found a positive relation between board independence and dividends, suggesting that increased board independence leads to higher dividends payments. These findings are consistent with the outcome model of La Porta et al. (2000), suggesting that independent boards and dividends play complementary governance roles. The idea is that independent directors use dividends to protect shareholders from expropriation. From the remaining six research papers, five reported a significantly negative relation between board independence and dividends, suggesting that greater board independence leads to lower dividend pay-outs. These findings support the substitution hypotheses of La Porta et al. (2000), suggesting that board independence can substitute for dividends. The idea is that greater board independence improves the reputation of a company, allowing managers to hold larger cash holdings and pay less dividends.

Based on these above findings, the principal-agent conflict and associated agency theory forms the basis of the theoretical framework of this study. Jensen and Meckling (1976) suggest that managers can allocate resources to activities that benefit them privately, but are not in the shareholders' best interest. The associated costs are at the expense of the shareholders and depend upon the degree in which management has an opportunity to engage in these sub-optimal transactions. There are several corporate governance mechanisms that can be deployed by a firm to reduce these opportunities of expropriation by managers. The focus of this study will be on dividends and board independence as mechanisms to help mitigate the agency problems. Dividends are used to reduce the resources available for managers and, according to Jensen (1986), limit their opportunity to use this cash for

private benefits. As a result, Easterbrook (1984) explains, companies will incur the monitoring of the capital market when they must obtain new capital. This suggests that dividends can function as an effective corporate governance mechanism. Prior literature also indicates that board independence can act as an effective corporate governance mechanism. It is expected that independent directors are better monitors, because they typically are better challengers of CEO performance and also have an incentive to build a reputation as protector of shareholders' best interests. Having a greater representation of independent board members thus increases monitoring effectiveness and helps mitigating agency problems that could be present in the organisation due to the separation of ownership and control. In this study, I will adopt the *traditional agency view* when developing the hypotheses. This means that the emphasis will be on the monitoring and control function of the board, with a focus on the negative role of managers. In other words, I assume that without effective monitoring and control, managers will always have the incentive to pursue private benefits at the cost of the shareholders.

3. Research design

This chapter will start with the hypotheses development. After that, I will describe the data, variables and research methods that are used in this study to test the different hypotheses. As mentioned before, the aim of this thesis is to test if the dividend pay-out policy changed for companies who are effected by the new listing rules. The first part of this chapter will provide a brief description of the data and the steps that have been followed to construct the sample. The second part describes the regression models that are used to test the different hypotheses.

3.1 Hypotheses development

As chapter 2 made clear, it is expected that board independence improves monitoring quality and is able to affect the dividend pay-out policy of a company. Prior research indeed acknowledge that there is a causal relation between board independence and dividends, suggesting that the number of independent board members influences the pay-out policy of a firm. The question is *how* these two relate, since prior research provides mixed results about the sign and magnitude of this causal relation. A positive relation would suggest that board independence and dividends play complementary governance roles, suggesting that greater board independence leads to higher dividend payments. A negative relation supports the substitution effect, suggesting that greater board independence leads to lower dividend payments. The mixed results in prior research indicates that some additional assumptions need to be considered when examining the effect of board independence on dividends.

Based on the traditional agency view, I assume that more independent director's increase monitoring effectiveness and improve corporate governance. As a result, shareholder rights are better protected and agency costs are reduced, since managers have less opportunity to engage in sub-optimal behaviour due to better monitoring and disciplining by the board of directors. This traditional agency view is challenged by several others who argue that it is not self-evident that independent boards are automatically more effective or create more value. They base their predictions on the stewardship theory, suggesting that managers are essentially trustworthy and good stewards of the resources entrusted to them, making additional monitoring redundant. Following the stewardship theory, the emphasis should be on the advisory role instead of the monitoring and control role, implying a negative relation between board independence and firm performance. Defenders of this theory found results that supported this idea, but only when ownership was highly concentrated. In firms with highly dispersed ownership (and greater agency conflicts), they found opposite results, suggesting that the monitoring and control function is more important in these companies. Since US companies are known to have widely dispersed ownership structures, I assume that the monitoring and control function is the dominant role of the boards in US firms. Based on this assumption, I hypothesize that monitoring becomes more efficient and shareholder rights are better protected in firms with greater

board independence. The question now remains whether this improved governance and greater protection of shareholder rights leads to higher or lower dividend payments. As mentioned before, the empirical results of prior research are mixed, both favouring the outcome- and substitution model. Advocates of the *substitution model* argue that poorly governed firms are committed to pay dividends in order to reduce the amount of cash available for expropriation. Greater board independence would improve a firms' reputation. When monitoring and shareholder protection improves, shareholders allow managers to hold larger amounts of cash. Supporters of the *outcome model*, on the other hand, suggest that improved monitoring and greater shareholder protection translates into higher dividend payments, because independent directors are more aware of the reputational and legal consequences of not protecting shareholders' best interest. As a result, they choose to redistribute the funds to the shareholders, thereby eliminating any possible expropriation by management. Since the effect of the outcome model leaves almost no room for expropriation, I assume that shareholders prefer this model over the substitution model. Moreover, I assume that (due to the regulatory reforms and subsequent awareness of legal consequences), independent directors would also prefer to distribute the cash flows rather than leaving them available for management. Based on this assumption, I hypothesize that increased board independence leads to higher dividend payments, supporting the *outcome model* of La Porta et al.

In summary, I assume that greater board independence increases monitoring effectiveness and shareholder protection. This increased shareholder protection will result in higher dividend pay-outs for firms with a greater representation of independent directors on the board. Since this study uses the new listing rule requirements as a natural experiment to test the effect of increased board independence on the dividend policy, the first hypothesis to be tested is as follows:

Hypothesis 1: *Firms which have a minority of independent directors on the board in the pre-SOX period would **increase** their dividend ratio in the post-SOX period relative to firms which had a majority of independent directors on the board in the pre-SOX period*

The second hypothesis tests if this monitoring effectiveness of independent directors is influenced by the presence of substantial shareholders (or block-holders). These substantial shareholders have incentives to monitor management intensively, since the expected return on holding a large block of shares exceeds the monitoring costs involved. Because management is already subject to this intense external monitoring, it is expected that independent directors have less influence on monitoring effectiveness in these firms. Hence, the effect of more independent directors would be smaller in companies that are already subject to a high degree of external monitoring, which results in the following hypothesis to be tested:

Hypothesis 2: *For firms with substantial shareholders (or block-holders), the aforementioned effect of board independence on dividends in H1 would be smaller.*

The third hypothesis tests if a firms' debt level influences the effect of board independence on dividends. As mentioned before, a firm's capital structure can also serve as a substitute mechanism for dividends in reducing agency costs. The contractual obligations associated with debt financing can function as a disciplining mechanism, since debt obligates managers to produce sufficient cash flows to cover their interest payments. An increase in a firms' debt level should therefore lead to more conservative financial behaviour. Highly leveraged firms are thus less likely to waste their cash and the effect of board independence on dividends will be smaller than for firms with less debt financing. This results in the following hypothesis:

Hypothesis 3: For highly leveraged firms, the aforementioned effect of board independence on dividends in H1 would be smaller.

3.2 Data and Sample

In order to test these hypotheses, firm specific information about board composition, accounting data and institutional shareholdings are needed.

3.2.1 Data

Relevant data on board independence is obtained through the ISS (formerly RiskMetrics) Directors database. This database provides independence classification of individual board members in the US through the years 1996-2006 (Directors Legacy) and 2007-present (Directors). Accounting and company info is obtained through the Compustat North America database. This database provides the necessary data to compute the dividend pay-out ratio and leverage, as well as some of the control variables. Data on institutional ownership is derived from the Thomson-Reuters Institutional (13F) Holdings database. This database provides quarterly information about the percentage of shareholdings in a company by large institutions.

3.2.2 Sample

The new listing rules, which require the majority of the board of directors to comprise of independent directors, became effective in 2002. Off course, it is impossible for companies to change their board structure overnight. Therefore, the NYSE required that all firms have to abide by the new listing rules during their first annual meeting in 2004 (non-classified boards) or 2005 (classified boards)[6]. This gave non-compliant firms (at least) a two year time span to increase the number of independent directors on their boards to comply with the new rules. Following Guo and Masulis (2012) and Seo, Tompkins and Yi (2014), firms are identified as affected by the new listing rules according to their

[6] In classified boards, only a fraction of the members of the board is elected each time. In non-classified boards, directors are elected en masse and only have one-year terms. It is therefore easier for non-classified boards to alter their board structure than for classified boards, hence the different time span to abide by the new listing rules for both board classifications.

board structure in the year 2001. Because many firms began to change their board structures before the compliance deadline, they argue that the board structure in 2001 represents the most recent board structure that was not affected by the new listing rules. Since the new rules require the majority of the board to consist of independent directors, a firm is considered non-compliant if they do not meet this requirement in the year 2001. As mentioned before in section 2.2, the NYSE listing standards defines an independent director as a director who has no material relationship with the company, either directly or as a partner, shareholder or officer of an organisation that has a relationship with the company. The ISS directors database classifies directors into three different categories: linked, gray or independent. A linked director is known as an insider- or non-independent director. This person is strongly connected to the organisation and is either an employee, officer or major shareholder of the company. A director is classified as gray directors when he or she is a former employee or has other business relations with the company. Since these directors also have a meaningful connection to the organisation, I consider these gray directors also as non-independent. Independent- or outside directors or not employed by the organisation, have no meaningful connection to the company and do not represent any of its stakeholders. These three director classifications are used to analyse the percentage of independent directors on the board in 2001. When more than fifty percent of the board in 2001 consists of linked- and gray directors, the board is considered non-independent and not compliant with the new listing rules. These non-compliant firms (with dependent boards in 2001) are placed in a treatment group, all other companies to the control group.

The ISS Directors database forms the starting point in the construction of the sample. From this database, information on board composition for all US companies in the year 2001 is obtained. Firms with incomplete data on board independence in 2001 were removed from this list, resulting in an initial sample of 1797 firms. The sample period runs from 1996 to 2014. The year 1996 is chosen to be the starting point, because this is the first year with available board composition data. In order to include the most recent data, 2014 will be the final year. Accounting and ownership information is derived from the Compustat North America Database and Thomson-Reuters Institutional Holdings database respectively. These three databases were merged on the basis of their CUSIP codes. Since ISS Directors Legacy uses a 6 digit code, Thompson-Reuters an 8 digit code and Compustat North America a 9 digit code, all CUSIP codes were converted to a 9 digit CUSIP code by using the Compustat CUSIP converter. Converting these CUSIP codes and merging the three databases resulted in a loss of 213 companies from the sample. In order to include only those companies who are subject to the new regulation, firms are required to be listed on the NYSE or NASDAQ from 2001to 2004 at least. In this way, results are not affected by firms who entered or leaved during this period. As a result, another 540 firms were removed from the sample. Consistent with prior literature, firms whose classification is in utilities (SIC codes 4900-4999) or in the financial sector (SIC codes 6000-6999) are also excluded from the sample. These type of firms are mostly regulated or have legal distribution

requirements, which makes them unsuitable for this study. This additional requirement resulted in another loss of 223 firms from the sample. Since I am interested in the effect of board independence on the dividend policy of US companies, firms who did not pay any dividends in the period 1996-2014 were removed from the sample as well. In total, there were 203 companies who paid zero dividends during this period. After removal of the aforementioned companies, the sample consists of 619 companies with 8.372 firm-year observations.

3.3 Methodology

The research method that will be employed in this thesis will, for the greater part, follow the methodology of Seo, Tompkins and Yi (2014) and use a difference in difference approach to test the relevant hypotheses. Before looking at the difference in difference regression models, the basic underlying regression will be presented.

3.3.1 Regression model

As mentioned before, this research focuses on the association between board independence (independent "X" variable) on dividend pay-outs (dependent "Y" variable). The basic underlying (multiple) regression model, therefore, is as follows:

$$\boldsymbol{DIV}_{i,t} = \alpha + \beta_1 \boldsymbol{BOARDIND} + \beta_2 BLOCK + \beta_3 LEVERAGE + \beta_4 CASH + \beta_5 ROA + \beta_6 SIZE + \beta_7 GROWTH + \beta_8 MTB + \varepsilon$$

Where:

Dependent variable

DIV$_{i,t}$ = Dividends divided by net income of company *i* in year *t*

Independent variable

BOARDIND = Proportion of independent directors to total number of directors

Control variables

BLOCK = Proportion of shares hold by block holders to total number of shares outstanding

LEVERAGE = Total debt divided by total assets

CASH = Operating cash flow divided by total assets

ROA = Net income divided by total assets

SIZE = Natural logarithm of total assets

GROWTH = Sales of year *t* less sales of year *t-1* divided by sales of year *t*

MTB = Market-to-book ratio, computed as book value of debt plus market value of equity divided by total assets

This multiple regression model is suitable for testing the effect of board independence on dividends, but provides no insights into the effects that the new listing rules might have on the dividend pay-out policy of affected companies. In order to do so, several dummy variables are added to the regression model. After the implementation of these dummies, a difference in difference approach will be conducted.

3.3.2 Difference in difference approach

This research focuses on the association between board independence on dividend pay-outs and compares the dividend pay-outs in the pre- and post-period of companies who are effected by the new listing rules relative to those who already had a majority of independent directors on the board.

Board independence will be operationalized by dividing the number of independent directors by the total amount of directors on the board in the year 2001. A dummy variable (*DEP*) will take the value of 1 if the percentage of independent directors is < 50% and 0 otherwise. As mentioned before, the year 2001 is chosen because this year represent the most recent board structure that was not influenced by the new listing rules. A second dummy variable will be introduced to separate between pre- and post-period (*POST_SOX*), taking the value of 1 if the observation is in the period at or after 2003 and 0 otherwise. Following La Porta et al. (2000), dividend pay-outs (*DIV*) are computed as the dividends-to-earnings ratio. This ratio is calculated by dividing Compustat items DVC (dividends to common equity) by NI (net income). Two other commonly used proxies of dividends; dividends-to-assets and dividends-to-sales will also be used as a robustness check.

The empirical task is thus to examine whether the change in dividend pay-out from pre- to post-period is significantly different for the treatment group compared to the control group. In order to test this effect, the *POST_SOX* dummy will be added to the regression model as a moderating variable, resulting in the following regression model to test hypothesis 1:

Hypothese 1:

$$DIV_{i,t} = \alpha + \beta_1 DEP_i + \beta_2 POST\_SOX + \boldsymbol{\beta_3}(\boldsymbol{DEP} * \boldsymbol{POST\_SOX}) + \sum_k \beta_k CONTROL^k + \varepsilon \qquad (2)$$

where $DIV_{i,t}$ = $\frac{Dividend}{Net\ Income}$ *of company i in year t*

DEP = 1 if company did not have majority of independent directors in 2001

0 if company already had majority of independent directors in 2001

POST_SOX = 1 if the observation is in the period at or after 2003

0 if the observation is in the period before 2003

CONTROL = control variables (SIZE ,GROWTH, ROA, BLOCK, LEVERAGE, CASH and MTB)

Following hypothesis 1, I am interested in the sign and magnitude of coefficient β_3. A positive sign would indicate that companies without a majority of independent directors on the board in the pre-SOX period increased their dividends in the post-SOX period relative to companies who already had a majority of independent directors in the pre-SOX period. A positive value of coefficient β_3 therefore supports H1 and the outcome model. By the same reasoning, a negative sign would support the substitution model.

In order to test hypotheses 2 and 3, the moderating variables *BLOCK* and *DEBT* will be added to equation 1. This results in the triple interaction terms $\beta_4(BLOCK * DEP * POST\_SOX)$ and $\beta_4(DEBT * DEP * POST\_SOX)$ to examine whether the presence of substantial shareholders (*BLOCK*) or a firms' debt level (*DEBT*) influences the effect of board independence on dividends. This results in de following regression models:

Hypothese 2:

$$DIV_{i,t} = \alpha + \beta_1 DEP_i + \beta_2 POST_{SOX} + \beta_3 BLOCK_i + \beta_5(DEP * POST_{SOX}) + \beta_6(DEP * BLOCK) + \beta_7(POST_{SOX} * BLOCK) + \boldsymbol{\beta_4(BLOCK * DEP * POST\_SOX)} + \sum_k \beta_k CONTROL^k + \varepsilon \quad (3)$$

Hypothese 3:

$$DIV_{i,t} = \alpha + \beta_1 DEP_i + \beta_2 POST_{SOX} + \beta_3 DEBT_i + \beta_5(DEP * POST_{SOX}) + \beta_6(DEP * DEBT) + \beta_7(POST_{SOX} * DEBT) + \boldsymbol{\beta_4(DEBT * DEP * POST\_SOX)} + \sum_k \beta_k CONTROL^k + \varepsilon \quad (4)$$

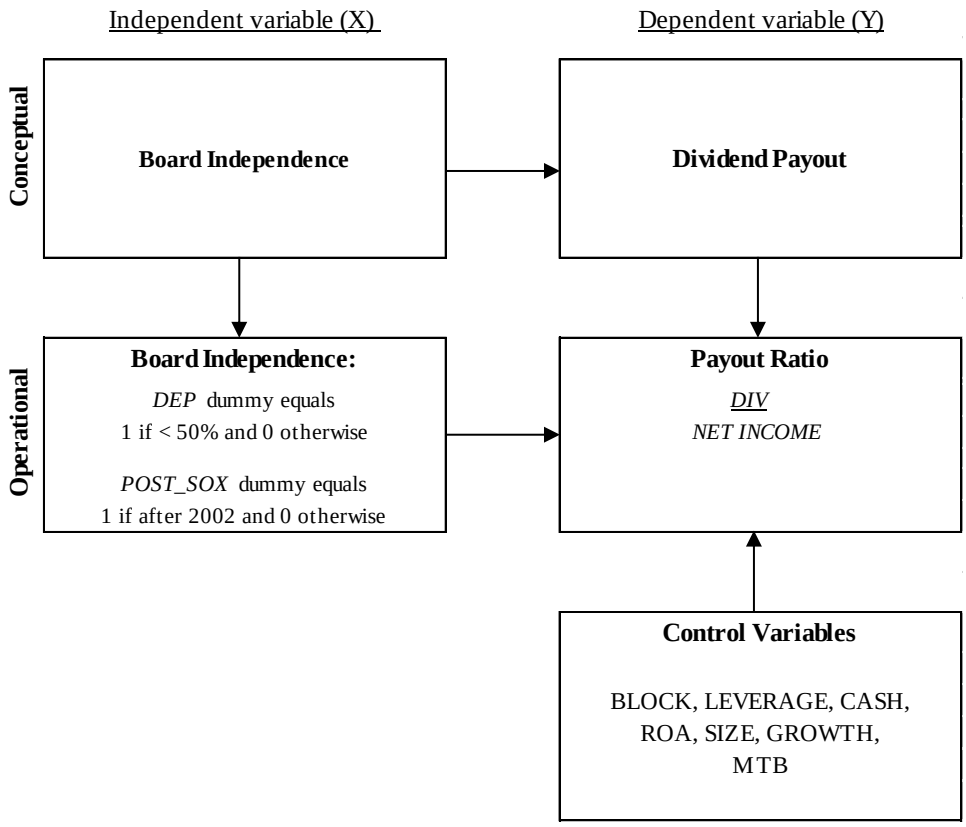
Negative coefficients on these triple interaction terms would indicate that the positive effect of board independence on dividends is less positive for firms with substantial shareholders or higher debt levels, compared to other companies without these characteristics.

3.3.3 Validity of the study

Figure 1 presents the predictive validity framework for this study, which captures the concepts and illustrates the research process. As mentioned before, I am interested in the effect of increased board

independence (X) on the dividend pay-out ratio (Y) of a company. The Board Independence concept will be operationalised by dividing the number of independent directors by the total amount of directors. The Dividend Pay-out concept will be operationalised by dividing dividends to net income, which makes both variables measurable. It is now important to judge if these operational variables are reliable measures for the conceptual idea. In my opinion, the construct validity of the operationalised Board Independence variable is moderate, since it is very difficult to measure a persons' independency. In this study, a director is considered independent if he or she has no "material relationship" with the company. Off course, this material requirement is no guarantee for independence, since there are many other factors that influences a persons' ability to act as independent director. The construct validity of the operationalised Dividend Payout variable on the other hand is relatively high, since the dividend-to-earnings ratio is a reliable measure for a companies' dividend pay-outs.

Figure 1
Predictive validity framework



Since I use an exogenous shock (new listing rules) to show the causality between board independence and dividends, the internal validity of this study is relatively high. When examining the effect of board independence on pay-out decisions, it is always a challenge to assess whether particular board attributes lead to certain decisions or whether boards that make certain decisions tend to have particular board attributes. By using the new listing rules as exogenous shock, this endogeneity

problem is limited. As mentioned in chapter 2, there are several others factors that influence the dividend policy of a company. Seven of these factors are implemented into the regression model as control variables, thereby increasing the internal validity of the study. Off course, there will always be other factors that influence the pay-out policy which are not incorporated in the model. The external validity of this study is limited, because my sample is based on US industrial firms. This means that it is very difficult to apply the results of this study to other settings or populations. For instance, the results of this study are based on one-tier board structures, most commonly used in Anglo-Saxon countries. In most Rhenish countries, however, boards have a two tier board structure. Moreover, the US has one of the most developed stock market and legal systems in the world, making it hard to apply these results to less developed countries.

3.4 Summary and conclusion

Based on the theoretical framework of chapter 2, the following hypotheses are developed to test the effect of increased board independence on the dividend policy:

Hypothesis 1: *Firms which have a minority of independent directors on the board in the pre-SOX period would **increase** their dividend ratio in the post-SOX period relative to firms which had a majority of independent directors on the board in the pre-SOX period*

Hypothesis 2: *For firms with substantial shareholders (or block-holders), the aforementioned effect of board independence on dividends in H1 would be smaller.*

Hypothesis 3: *For highly leveraged firms, the aforementioned effect of board independence on dividends in H1 would be smaller.*

These hypotheses are tested using a sample of 619 US industrial firms for the period 1996 to 2014. The year 1996 is chosen to be the starting point, because this is the first year with available board composition data. In order to include the most recent data, 2014 will be the final year. Consistent with prior literature, firms who classification is in utilities or in the financial sector are excluded from the sample. This sample is divided into a treatment and control group, were the treatment group consists of firms who did not have a majority of independent directors in the period before the new listing rules, all other companies to the control group. Data on board independence is obtained through the ISS (formerly RiskMetrics) Directors database. Accounting and company info is obtained through the Compustat North America database and data on institutional ownership is derived from the Thomson-Reuters Institutional (13F) Holdings database. The hypotheses will be tested by the use of the difference-in-difference approach, were moderating variables are added to a multiple regression model to test if the increase in dividend pay-out ratio from pre- to post-SOX was larger for the treatment group compared to the control group.

4. Empirical results

This chapter presents summary statistics and outcomes of the regression models discussed in the previous chapter. These results are discussed and used to test the different hypothesis developed in Chapter 3. First, summary statistics and a correlation matrix will be presented. Section 4.3 will discuss the results of the OLS regressions, section 4.4 provides a robustness check and section 5.5 provides a summary of main findings and conclusion.

4.1 Summary statistics

Panel A of table 1 provides summary statistics for the final sample. On average, 71% percent of the board consists of independent directors, which is well above the required 50%. These companies spend around 9% of their net income on dividends.

Table 1: Summary Statistics

Panel A: Summary statistics for whole sample

	Mean	Min	1st Quartile	Median	3rd Quartile	Max	Std. Dev.
Percentage of Independent directors	70,94	0,00	60,00	75,00	85,71	100,00	17,05
Board Size	9,73	4,00	8,00	10,00	11,00	27,00	2,35
Dividends pay-out ratio	0,09	-0,19	0,01	0,08	0,14	0,38	0,08
Cash Holdings	0,16	0,00	0,02	0,07	0,18	1,00	0,33
Total Assets ($ mln)	11.444	59	943	2.513	7.840	797.769	39.854
Sales ($ mln)	10.220	11	1.046	2.476	7.613	483.521	28.989
Market-to-book	2,28	-0,43	1,29	1,70	2,45	95,56	2,48
Leverage	0,25	0,00	0,13	0,24	0,35	1,00	0,18
Percentage hold by Blockholders	16,64	0,00	6,24	15,09	24,57	78,73	13,02
N	8.372	8.372	8.372	8.372	8.372	8.372	8.372

Panel B: Comparison of the means of Treatment and Control firms in Year 2001

	Control group	Treatment group	P-value
Percentage of Independent directors	72,61	40,01	0,00
Board Size	9,73	8,99	0,00
Dividends pay-out ratio	0,08	0,05	0,00
Cash Holdings	0,15	0,22	0,22
Total Assets ($ mln)	9.186	7.490	0,63
Sales ($ mln)	7.531	5.250	0,21
Market-to-book	2,44	2,60	0,52
Leverage	0,27	0,25	0,43
Percentage hold by Blockholders	16,67	14,75	0,08
N	457	162	

Panel B of table 1 compares mean values of the treatment group (with less than 50% of independent directors on the board in 2001) with those of the control group. On average, companies in the treatment group have significantly smaller boards, have lower pay out ratio's and a smaller fraction of shares hold by block holders. The lower pay-out ratio and larger cash holdings for companies with

non-independent boards could suggest that there are possible agency conflicts present in these companies. Since they pay only a small fraction of earnings as dividends, the amount of cash available for expropriation by management increases. On the other hand (although not statistically significant) these companies are smaller in terms of total assets (and sales) and exhibit larger market to book ratios. This could indicate that a large fraction of the treatment group consists of young(er) growth firms. Small growth firms, for instance, might have less access to the capital markets in order to raise funds to invest in future investment projects. Therefore, they tend to use their internal proceeds for investments, instead of paying them out as dividends. Furthermore, they tend to have more investment projects available then mature firms, resulting in lower pay-out ratios. The smaller board size also indicates that these firms could be younger growth firms, since smaller and younger companies might find it more difficult to attract independent directors in the pre-SOX period. The higher market to book ratio also suggests that firms in the treatment group have more growth opportunities than companies in the control group. Debt levels do not deviate much between the two groups.

4.1.1 Outliers and normality

The sample of 619 firms with associated 8.372 firm year observations consists of the final sample after the removal of outliers. Histograms on the continuous variables showed that some extreme outliers were present in the data. For the dividend pay-out ratio for instance, values of 656 and 300 were found, suggesting that dividends payment were 656 and 300 times net income. With a net income of 0,55 mio dollars, a dividend payment of 360 mio dollars seems unlikely. As another example, leverage values greater than one were found. Since leverage is calculated by dividing net debt by total assets, values larger than one seem unlikely and indicate that some errors were present in the dataset. Based on these findings, I winsorize all continuous variables at the 1% and 99% level before running the regressions. At this point, I purposely do not (yet) remove these observations, because a large number of observations in the 1% area consist of zero values, which are very relevant for this study. Since I am interested in the (movement of the) pay-out ratio, an outcome of zero is an important observation. Firms who did not pay any dividends in the pre-SOX period, for instance, could become dividend payers in the post-SOX period when they have a majority of independent board members. Removing these observations at this point would thus not make sense. After setting up the dummy and interaction variables and running the regressions, observations with standard deviations larger than 2,5 or smaller than -2,5 were removed from the sample. In total, 1.826 observations were removed, resulting in a final sample of 8.372 firm year observations. After the removal of these extreme observations, a histogram on the standardised residuals showed a reasonably normal distribution with a little (positive) skewness to the left. In my opinion, this skewness is the result of the large number of observations with zero values for the independent variable. Since these observations are relevant for this study, I have not removed all zero values. Transforming the independent variable by taking the square root or

Logarithm (plus a constant so that smallest observation equals 1) did not affect the signs of the regression coefficients.

4.2 Pearson correlation matrix

Table 2 presents the Pearson correlations between the variables that are used in this study. Consistent with Belden et al. (2005) and Yarram and Dollery (2014), board independence (the variable of interest) is positively and significantly correlated with dividends.

Table 2: Correlation matrix for sample firms

Variable	*DIV*	BOARDIND	BLOCK	LEVERAGE	CASH	ROA	SIZE	GROWTH	MTB
DIV	1								
BOARDIND	0.025**	1							
BLOCK	- 0.115**	0.073**	1						
LEVERAGE	0,005	0.095**	0.057**	1					
CASH	- 0.122**	- 0,014	0,021	0,001	1				
ROA	0.073**	0.036**	- 0.149**	- 0.231**	0.102**	1			
SIZE	0.221**	0.289**	- 0.272**	0.229**	- 0.215**	- 0.051**	1		
GROWTH	- 0.128**	- 0.110**	- 0.042**	- 0.060**	0,005	0.236**	0.011**	1	
MTB	- 0.091**	- 0.090**	- 0.101**	- 0.105**	0.577**	0.328**	- 0.141**	0.141**	1

a: * and ** denote statistical significance at the 0,05 and 0.01 level respectively

This suggests that a larger representation of independent board members leads to higher dividend pay-out ratios for these firms. The coefficients on the CASH, ROA, SIZE, GROWTH and MTB variables all have the expected sign. Cash holdings are negatively related to dividends, since cash is used to pay dividends. Having a large amount of cash holdings thus suggest that less cash is redistributed to shareholders. Consistent with the life cycle theory of DeAngelo, DeAngelo and Stulz (2006), the coefficients on the growth variables are also negative. As expected, firm size and profitability turn out to be positively related to dividend pay-outs. The coefficient of the BLOCK variable shows a different sign than expected. Following Cotter and Sylvester (2003), I expected that the presence of block-holders would have a positive effect on the dividend pay-out ratio. For a more elaborate discussion of the effect of the control variables on the dividend pay-out ratio see section 5.2.1.

Based on the positive coefficient of the board independence variable, this correlation matrix thus provides some preliminary support for my predictions that a higher percentage of independent board members increase monitoring effectiveness and improve corporate governance. These correlations however, provide no insights into the effect of the new listing rules on the dividend pay-out. Moreover, correlation does not necessarily represent causation between the independent and other dependent variables. Therefore, dummy variables are added to the model and OLS regressions are executed.

4.3 Regression results

4.3.1 Board independence and dividend pay-outs

The first model tests if companies without a majority of independent directors in the pre-SOX period increased their dividend pay-out ratios in the post-SOX period relative to firms that already had a majority of independent directors on the board in the pre-SOX period. Table 3 represents the multivariate analysis of the sample of 619 firms with 8.372 firm year observations for the period 1996-2014.

Table 3: Board independence and dividend pay-outs

Variables	Predicted Sign	Model 1	*t*	*p-value*	Model 2	*t*	*p-value*
(Constant)		- 0,013	-2,414	0,016	0,033	6,160	0,000
DEP dummy					- 0.021**	-7,005	0,000
POST_SOX dummy					0.015**	7,697	0,000
DEP * POST_SOX	+				0.007*	1,969	0,049
BOARD INDEP	+	0,082**	16,316	0,000	-		
BLOCK	+	- 0,048**	-7,274	0,000	- 0.049**	-7,377	0,000
LEVERAGE	-	- 0,010*	-2,124	0,034	- 0,006	-1,146	0,252
CASH	-	- 0,018**	-5,770	0,000	- 0.018**	-5,654	0,000
ROA	+	0,127**	10,696	0,000	0.128**	10,743	0,000
SIZE	+	0,007**	11,319	0,000	0.008**	12,626	0,000
GROWTH	-	- 0,055**	-12,516	0,000	- 0.059**	-13,475	0,000
MTB	-	- 0,001**	-3,292	0,001	- 0.001**	-3,230	0,001
Adjusted R-squared		0,12			0,11		
N		8.372			8.372		

a: This table provides the coefficient estimates of the regression of dividends pay-outs on board independence. The dependent variable is the dividend pay-out ratio, measured as dividend divided by net income. Model 1 provides outcome on the basic regression model. Model 2 includes the dummy variables DEP and POST_SOX. DEP is a dummy variable equal to one if the firm did not have a majority of independent directors on the board in 2001, zero otherwise. POST_SOX is a dummy variable equal to one if the observation is in the period at or after 2003, zero otherwise. DEP * POST_SOX is an interaction term and the coefficient of interest. All other control variables are defined in Chapter 4.
b: * and ** denote statistical significance at the 0.05 and 0.01 level respectively.

Model 1 shows the results of regression 1 from chapter 3. This is the basic regression model without the dummy variables. Based on the adjusted R^2, this model explains about 12% of the variance in dividend pay-outs, which is around 20% less than the models in comparable studies of Benjamin and Zain (2015) and Seo, Tompkins and Yi (2014)[7]. Model 2 shows the results of regression 2, which

[7] See section 4.4 for short discussion on R-square

includes the dummy variables DEP and POST_SOX and interaction term DEP * POST_SOX to test for hypothesis 1. The interaction term DEP * POST_SOX is the coefficient of interest. Recall from chapter 3 that the DEP dummy is a variable equal to one if the firm did not have a majority of independent directors on the board in 2001 and the POST_SOX dummy is a variable equal to one if the observation is in the period at or after 2003. Model 2 of table 3 shows a negative coefficient for the DEP dummy and a positive coefficient for the POST_SOX dummy, both statistically significant at the 1% level. This suggest that firms who are effected by the new listing rules (non-compliant/treatment group) have lower dividend pay-out ratios compared to firms that already had a majority of independent directors. The positive coefficient on the POST_SOX dummy indicates that dividend pay-out ratios were higher in the post-SOX period than in the period before the new listing rules. The interaction term DEP * POST_SOX measures the difference in dividend pay-out ratios in the post-SOX period for non-compliant firms compared to firms who already had a majority of independent directors on the board. Model 2 of table 3 shows that the coefficient of the interaction term DEP * POST_SOX is positive and statistically significant at the 5% level. This positive coefficient suggests that, even though non-compliant firms have lower pay-out ratios than compliant firms, the increase in dividend pay-out ratios from pre- to post-SOX period was larger for non-compliant firms than for compliant firms. Having a larger representation of independent board members thus affected the dividend pay-out ratios for these companies. More importantly, these results indicate that board independence and dividends play complementary governance roles, suggesting that greater board independence leads to higher dividend payments. These findings support my earlier assumptions that more independent directors could increase monitoring effectiveness and improve corporate governance. As a result, shareholders rights are better protected and agency costs are reduced, since managers have less funds available to use for private benefits. These findings thus support the outcome model of La Porta et al. (2000), where higher dividend pay-out ratios are an outcome of improved shareholder protection. This result is consistent with hypothesis 1.

The second column of table 3 provides the predicted signs of the coefficients based on the examination of previous literature. Except for the BLOCK variable, all the signs of the coefficients for the control variables are in the predicted direction. Following Cotter and Sylvester (2003), I expected that the presence of block holders would have a positive effect on the dividend pay-out ratio. Since they have a large cash flow stake in the company, these substantial shareholders are expected to monitor management intensively and discipline them if necessary. Based on this idea, I expected that firms with a greater representation of substantial shareholders achieve superior monitoring, resulting in greater shareholder protection and higher dividend payments. The results in table 3 however, show a negative relation between dividends and the presence of substantial shareholders, indicating that firms with substantial shareholders have lower pay-out ratios than companies with widely dispersed ownership. This finding contradicts with my assumption that increased monitoring effectiveness and

improved corporate governance also leads to higher dividend payments. Moreover, these results are more in line with the stewardship theory, were block holders could have established a relation with the management in which they trust them with the resources under their control. The signs of the coefficients for the other control variables turn out to be in line with expectations and previous literature. Consistent with the findings of Benjamin and Zain (2015), Yarram and Dollery (2014), Belden et al. (2005) and many others, leverage, cash holdings and growth are negatively related to dividend pay-outs. Consistent with the free cash flow hypothesis of Jensen and Meckling (1986), leverage (although not statistically significant in my model) is negatively related to dividends because, just like dividends, debt financing reduces the amount of cash-flow under managements control. Cash holdings are also negatively related to dividends, since cash is used to pay dividends. Having a large amount of cash holdings thus suggest that less cash is redistributed to shareholders. Consistent with the life cycle theory of DeAngelo, DeAngelo and Stulz (2006), the coefficients on the growth variables are also negative. Young growth firms face relatively abundant investment opportunities and have limited resources available. Therefore, younger firms would prefer to use the available internal funds to finance their expansion instead of paying them out as dividends. As expected, firm size and profitability turn out to be positively related to dividend pay-outs. Larger more mature firms tend to have fewer attractive investment opportunities and easier access to capital markets. Compared to smaller firms, it is easier for these large mature firms to obtain new capital, suggesting that these firms are able to pay more dividends. The positive coefficient on ROA seems most obvious, since firms need to generate a profit in order to produce long term cash flows available for distribution. Higher profitability leads to higher levels of cash flows, increasing the dividend paying capacity of a firm.

In summary, the positive coefficient on the interaction term DEP * POST_SOX is consistent with hypothesis 1 and implies that firms which did not have a majority of independent directors in the pre-SOX period increased their dividend pay-out ratio in the post-SOX period relative to firms which already had a majority of independent directors on the board in de pre-SOX period. Except for the block holdings variable, the signs of the control variables are in the predicted direction.

4.3.2 Block holders and dividend pay-outs

The second hypothesis to be tested checks if the monitoring effectiveness of independent directors is influenced by the presence of substantial shareholders. As mentioned before, these shareholders have incentives to monitor management intensively. Because management is already subject to this intense external monitoring, I expect that independent directors have less influence on monitoring effectiveness in these firms. In other words, I expect that the effect of more independent directors would be smaller in firms that are already subject to a high degree of external monitoring. Table 4 presents the results of regression 3 from chapter 3. Model 3 includes the same dummy variables DEP and POST_SOX as regression 2, but also includes the triple interaction term DEP * POST_SOX *

BLOCK. Recall from chapter 3 that the BLOCK variable stands for the proportion of shares hold by block holders to the total number of shares outstanding. Shareholdings are considered block holdings when at least one shareholder holds more than 5% of the shares outstanding.

Table 4: Block holdings and dividend pay-outs

Variables	Predicted Sign	Model 3	*t*	*P-value*
(Constant)		0.015	3,256	0,001
DEP dummy		- 0.019**	-6,740	0,000
POST_SOX dummy		0.013**	6,649	0,000
DEP * POST_SOX	+	0.022**	4.026	0,000
DEP * POST_SOX * BLOCK	-	- 0.019**	-3,708	0,000
LEVERAGE	-	- 0.010*	-1,998	0,046
CASH	-	- 0.018**	-5,569	0,000
ROA	+	0.137**	11,506	0,000
SIZE	+	0.009**	15,629	0,000
GROWTH	-	- 0.059**	-13,469	0,000
MTB	-	- 0.001**	-2,766	0,006
Adjusted R-squared		0,11		
N		8.372		

a: This table provides the coefficient estimates of the regression of dividends pay-outs on board independence and shareholdings by block holders. The dependent variable is the dividend pay-out ratio, measured as dividend divided by net income. Model 3 provides outcomes on regression model 3 from chapter 3. This model includes the triple interaction term DEP * POST_SOX * BLOCK, where BLOCK is the proportion of shares hold by blockholders. All other control variables are defined in Chapter 3.
b: * and ** denote statistical significance at the 0.05 and 0.01 level respectively.

Based on hypothesis 2, I predict a negative coefficient for the triple interaction term. Column 3 of table 4 presents coefficients for the variables and shows that all coefficients have the expected sign and are statistically significant, at least at the 5% level. Consistent with my predictions, the triple interaction term DEP * POST_SOX * BLOCK shows a negative coefficient. This negative coefficient indicates that firms who are in the treatment group and have substantial block holders as shareholders, face lower dividend increases than firms from the treatment group without these substantial shareholders. It could thus well be that these firms already are faced with intensive monitoring by block holders. The need for monitoring by independent directors is therefore smaller in these firms. Simply adding more independent directors thus has less effect in these companies, since external monitoring by block holders already resulted in improved shareholder protection in these companies. Because of their substantial share in the company, these block holders have the ability to build a relation with the managers, thereby expressing their needs and expectations regarding the dividend policy of the firm.

The presence of these block holders thus substitutes for monitoring needs by independent directors.

In summary, the negative coefficient on the triple interaction term DEP * POST_SOX * BLOCK is consistent with hypothesis 2 and implies that the effect of more independent directors is smaller in companies that are already subject to a high degree of external monitoring. This smaller effect translates into smaller dividend increases for firms with substantial shareholders, compared to firms with highly dispersed ownership.

4.3.3 Leverage and dividend pay-outs

The third and final hypothesis to be tested checks if a firms' debt level influences the effect of board independence on dividends. This hypothesis is based on the free cash flow hypothesis of Jensen and Meckling (1986), who argue that the capital structure can also serve as a substitute mechanism for dividends in reducing agency costs. Highly leveraged firms are less likely to waste their cash, since debt financing obligates managers to produce sufficient cash flows to cover their interest payments.

Table 5: Leverage and dividend pay-outs

Variables	**Predicted Sign**	**Model 4**	*t*	*P-value*
(Constant)		0.014**	2,976	0,003
DEP dummy	-	0.019**	-6,436	0,000
POST_SOX dummy		0.013**	6,586	0,000
DEP * POST_SOX	+	0.006	1,337	0,181
DEP * POST_SOX * LEVERAGE	-	0.004	0,945	0,344
BLOCK	+	- 0.011*	-2,105	0,035
CASH	-	- 0.018**	-5,539	0,000
ROA	+	0.138**	11,592	0,000
SIZE	+	0.009**	16,021	0,000
GROWTH	-	- 0.060**	-13,525	0,000
MTB	-	- 0.001**	-2,728	0,006
Adjusted R-squared		0,10		
N		8.372		

a: This table provides the coefficient estimates of the regression of dividends pay-outs on board independence and leverage. The dependent variable is the dividend pay-out ratio, measured as dividend divided by net income. Model 4 provides outcomes on regression model 4 from chapter 3. This model includes the triple interaction term DEP * POST_SOX * LEVERAGE, where LEVERAGE is equal to total debt divided by total assets. All other control variables are defined in Chapter 3.
b: * and ** denote statistical significance at the 0.05 and 0.01 level respectively.

Financiers of debt, therefore, have incentives to monitor management intensively, since they want to secure the interest payments on their loans. Because management is already subject to this intense monitoring by debt financiers, I expect that independent directors have less influence on monitoring

effectiveness in these firms. In other words, I expect that the effect of board independence on dividends would be smaller for highly leveraged firms. Table 5 present the regression results of regression 4 from chapter 3. Model 4 contains the same dummy and control variables as regression 3, but now includes the triple interaction term DEP * POST_SOX * DEBT. Recall from chapter 3 that the DEBT variable stands for the proportion of total debt to total assets. Based on hypothesis 3, I predicted a negative coefficient for the triple interaction term. Column 3 of table 5 presents coefficients for the variables and shows that the triple interaction term is negative, but not statistically significant. The negative coefficient thus indicate that highly leveraged firms in the treatment group face lower dividend increases than firms from the treatment group with less debt financing. However, since this coefficient is not significant, I cannot accept the hypothesis that debt financing influences the effect of board independence on dividends.

4.4 Robustness check

The main focus of this study is to test the effect of increased board independence on the dividend pay-out policy of US companies. Paragraph 5.2.1 showed that, based on the sample, models and variables used, hypothesis 1 is accepted. In other words, the data supports the assumption that independent board members increase monitoring effectiveness, resulting in higher dividend payments for these companies. In order to check the robustness of these findings, I perform some additional analyses using two other commonly used proxies for dividends: dividends-to-assets and dividends-to-sales. Table 6 provides regression results for regression model 1, using two different proxies as dependent variable. Following Benjamin and Zain (2015), column 3 of table 6 uses dividends divided by total assets as a proxy for dividends. Column 5 presents outcomes with dividend-to-sales as dependent variable (La Porta et al., 2000). These authors argue that total assets and total sales a useful measures, since they are harder to manipulate and are less dependent on accounting conventions. As table 6 shows, the results of the regression coefficients do not differ from the previous findings in table 3, where dividends-to-earnings are used as dependent variable. All variables in the model show similar results and carry the same sign as in table 3. Consistent with the studies of Benjamin and Zain (2015) and La Porta et al. (2000), the predictability of the model represented by the R-square improved, compared to the dividend-to-earnings measure for dividends. In my opinion however, these two proxies have limited practical interpretation. I think that management will (almost) always determine their dividend pay-outs as a proportion of their earnings. I do not think that management base their dividend decisions on a percentage of total sales or total assets. I do understand that these proxies are better suitable for statistical analyses, since total assets and total sales cannot have negative values. As a results, their dependent variable is censored at zero, which gives them the opportunity to use a Tobit regression. Since I am interested in the (human) decision making of managers, however, I have chosen to use dividends-to-earnings as a measure for the dividend pay-outs. Unfortunately, this resulted in lower R-square for my regression models.

Table 6: Board independence and dividend pay-outs - Robustness Check

Variables	Predicted Sign	Dividends to Assets	*t*	*P-value*	Dividends to Sales	*t*	*P-value*
(Constant)		0.006**	6,242	0,000	- 0.009**	-8,896	0,000
DEP dummy		- 0.003**	-6,410	0,000	- 0.002**	-4,453	0,000
POST_SOX dummy		0.002**	7,484	0,000	0.002**	5,266	0,000
DEP * POST_SOX	+	0.001*	2,290	0,022	0.001	1,144	0,253
BLOCK	+	- 0.012**	-10,733	0,000	- 0.011**	-8,592	0,000
LEVERAGE	-	0.000	0,592	0,554	0.005**	6,059	0,000
CASH	-	- 0.005**	-9,249	0,000	- 0.002**	-2,614	0,009
ROA	+	0.052**	25,669	0,000	0.044**	20,064	0,000
SIZE	+	0.010**	8,180	0,000	0.003**	23,159	0,000
GROWTH	-	- 0.010**	-13,288	0,000	- 0.012**	-14,814	0,000
MTB	-	- 0.000**	4,808	0,000	- 0.000*	2,297	0,022
Adjusted R-squared		0,16			0,17		
N		8.372			8.372		

a: This table provides the coefficient estimates of the regression of dividends pay-outs on board independence. As a robustness check, alternative measures are used to calculate the dependent variable (pay out ratio). In column 3, the dividend pay out ratio is measured as dividends divided by total assets. In column 5, the dividend pay out ratio is measured as dividends divided by total sales. All other variables are consistent with table 3.
b: * and ** denote statistical significance at the 0.05 and 0.01 level respectively.

Although the interaction term for the dividends-to-sales is not statistically different, I conclude that these results do not jeopardize my previous findings and conclusions.

4.5 Summary and conclusions

In summary, the results of this chapter provided support for two of the three hypothesis:

		accepted?
H 1:	*Firms which have a minority of independent directors on the board in the pre-SOX period would **increase** their dividend ratio in the post-SOX period relative to firms which had a majority of independent directors on the board in the pre-SOX period*	✓
H 2:	*For firms with substantial shareholders (or block-holders), the aforementioned effect of board independence on dividends in H1 would be smaller.*	✓
H 3:	*For highly leveraged firms, the aforementioned effect of board independence on dividends in H1 would be smaller.*	✘

Section 5.2.1 presented a positive and statistically significant coefficient on the interaction term DEP * POST_SOX, indicating that the increase in dividend pay-out ratios from pre- to post-SOX was larger for non-complaint firms thn for compliant firms. Having a larger representation of independent board members thus affected the dividend pay-outs for these companies. This suggests that monitoring effectiveness and corporate governance improved. Section 5.2.2 and 5.2.3 showed negative coefficients on the triple interaction terms DEP * POST_SOX * BLOCK and DEP * POST_SOX * LEVERAGE, indicating that the positive effect of board independence on dividends is smaller for firms with substantial shareholders or higher debt levels, compared to other companies without these characteristics. These results suggests that the effect of more independent directors is smaller for firms who are already subject to a high degree of external monitoring. Unfortunately, the coefficient on the triple interaction term for leverage turned out to be statistically insignificant.

5. Conclusion

5.1 Introduction

This research paper is designed to test the implications and consequences of a new listing rule on the dividend policy of US industrial firms. Triggered by the 2002 introduction of the Sarbanes-Oxley Act, the NYSE and NASDAQ required listed companies to increase the number of independent directors on their board. These new requirements on board independence were intended to be a solution to management misbehaviour. Monitoring effectiveness would improve by increasing the number of independent directors, since independent directors are expected to be better monitors and better challengers of CEO performance. As a result, this improved monitoring should limit the possibility for management to engage in undesired behaviour, resulting in less agency costs and improved shareholder wealth. In order to test if this new listing rule had the desired outcome, I examine the effect of this new requirement on the dividend policy of US industrial firms. Following the traditional agency view, I assume that improved monitoring effectiveness reduces agency costs. As a result, less squandering takes place and more cash should be available for dividend payments to shareholders. To test if these assumptions hold, the following research question is tested:

RQ**: Is there a statistical significant effect between board independence and the dividend pay-out ratio of US industrial firms?**

In order to provide an answer to this question, three hypothesis were tested using a sample of 619 US industrial firms from the period 1996 to 2014. This sample is divided into a treatment and control group, were the treatment group consists of firms who did not have a majority of independent directors in the period before the new listing rules. Using a difference-in-difference approach, I test if the increase in dividend pay-out ratio from pre- to post-SOX was larger for the treatment group compared to the control group.

5.2 Discussion

Based on a sample of 619 listed US industrial firms, I find a positive and significant association between board independence and dividends. Firms who did not have a majority of independent directors in the pre-SOX period, showed a significantly larger increase in dividend pay-out ratios in the post-SOX period than firms who already had a majority of independent directors in the pre-SOX period. Increasing the number of independent directors on the board thus resulted in higher dividend pay-out ratios for these firms. Based on this sample, my results support the outcome model of La Porta et al. (2000), suggesting that independent boards and dividends play complementary governance roles. Assuming that a higher dividend pay-out ratio is an outcome of improved corporate governance, I can conclude that the new listing rule had the desired effect. In the pre-SOX period, firms in the treatment

group were managed by a board that consisted of a majority of insiders. These companies had the opportunity to improve corporate governance quality by appointing more independent board members, but choose not to, suggesting that some possible agency conflicts could be present in these organisations. With the implementation of the new listing rule and obligation to appoint more independent directors, these companies were forced to adjust their board structure and to bring in more external monitoring. With more independent directors on board, results show that these companies increased their dividend pay-out ratios in the period after the implementation. This suggests that independent directors convinced the other board members to increase the pay-out ratios and to redistribute more cash to shareholders, thereby protecting and promoting the interests of the shareholder. As a result, less cash is available for managers, which limit their opportunity to use this cash for private benefits. Since the new listing rule was designed to prevent management misbehaviour, I think this requirement on board independence has shown to be an effective manor in limiting the possibility for undesired behaviour. Off course, it is difficult to state that independent boards will always improve monitoring effectiveness or increase shareholder wealth. For instance, I focused on the negative role of managers in this research, assuming that managers will always have the incentive to pursue private benefits at the cost of shareholders. In reality, this will not be the case. Having large amounts of free cash flow available does not automatically mean that this cash will be used for private benefits. Managers can easily use this cash for investments in positive NPV projects, which could improve shareholder wealth. What the new listing rule (indirectly) did accomplish however, is to limit the opportunity for management to engage in undesired behaviour by reducing the resources available. Independent directors thus established a situation of improved corporate governance. Since I assume that shareholders always prefer to leave no room for expropriation, I conclude that independent directors are better protectors of shareholders' interest than inside directors.

The second part of this research focused on the added value of independent directors in companies who are already subject to a high degree of external monitoring. I distinguish between two types of external monitoring; monitoring by block holders and monitoring by suppliers of debt financing. Consistent with my predictions, I find that the effect of more independent directors on dividends is smaller for firms who are already faced with intense monitoring by block holders. Because of that, the need for monitoring by independent directors is smaller for these firms. A new listing rule that obligates to bring in more independent directors on board thus has little effect on these companies, since external monitoring by block holders already resulted in improved corporate governance. These findings support the assumption that monitoring by block holders can substitute for monitoring by independent directors. However, I do not find support for this effect in companies who are subject to monitoring by debt financiers. Based on my results, there is no difference in dividend increases between highly leveraged or highly unleveraged firms. This indicates that monitoring by debt financiers is different from monitoring by block holders, suggesting that stakeholders monitor differently than shareholders.

In summary, my findings show that firms who are obligated to take on a majority of independent directors on the board increased their dividend pay-out ratio after the SOX. These results suggest that independent board and dividends play complementary governance roles. The increase in dividend pay-out ratios is smaller for firms with substantial block holders, since they substitute for independent directors as external monitors. I find no support for this substitution effect in highly leveraged firms.

5.3 Limitations and suggestions for future research

As with every research, this paper is subject to several limitations. For instance, this study only focuses on cash dividends as a way of redistributing cash to shareholders. When firms have excess cash available and are willing to distribute this cash to shareholders, however, they can also choose to repurchase their own stock. Where dividends result in a direct cash-in for the shareholder, a share repurchase results in a capital gain for the remaining shareholder. I chose to only incorporate cash dividends in this research, assuming that companies and shareholders are indifferent between dividends and share repurchases. In the real world, however, this assumption of indifference could be unrealistic. The existence of differing shareholder preferences, tax regulations, transaction costs and many other factors could make it interesting to opt for a share repurchase or vice versa. The choice between dividends or share repurchase is beyond the scope of this research, but since a share repurchase also reduces the resources available under managements control, it could be interesting to take this into account as well. Another possible limitation of this study could be the measurement of the dividend pay-out ratio. I determine this ratio as dividends in year *t* dividend by net income in year *t*. It could well be however, that there is a small lag in the relation of cash dividends and earnings. Dividend may be subject to smoothing or cash flows could be distributed in the year(s) after they were collected. Adjustment in the measurement of this dividend pay-out ratio, for instance a one year lag or 2-3 year average, could be interesting. Another limitation of this study is that it does not provide information about the effect of board independence on shareholder wealth. The study showed that increased board independence leads to improved corporate governance and increased dividend pay-outs, but it does not show if this improved corporate governance also resulted in reduced agency costs. As mentioned before in paragraph 2.1, agency costs can include monitoring costs, bonding costs and residual costs. Although hard to quantify or measure, it would be interesting to see if improved monitoring by independent board members actually resulted in reduced agency costs and hence improved shareholder wealth. Finally, this study does not control for industry effects. Although financials and utilities are excluded from the sample, I make no distinction between industries in the final sample. It could well be that firms in certain industries can benefit more from independent directors than others. For instance, in highly specialized companies such as pharmaceutical, medicinal or chemical companies the advisory role can be the dominant role of the board instead of the monitoring role. It is therefore interesting to see if the outcomes differ across industries.

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Appendix 1: Table 1 – Summary of related research

Author(s)	Year	Title	Sample		Main findings	Relation
Schellenger et al.	1989	Board of director composition, shareholder wealth and dividend policy	US listed non-financial firms (1986)	-	No support for hypothesis that board composition and dividends are substitutes	+
				-	Positive correlation between outside directors and dividend pay-out	
Bathala and Rao	1995	The determinants of board composition: An agency theory perspective	US listed non-financial firms (1986)	-	Negative relationship between proportion of outside directors on dividend pay-out ratio, inside ownership and leverage	-
				-	Firms choose the board composition depending on the extent to which alternative agency conflict-minimizing devices are utilized	
Cotter and Sylvester	2003	Board and monitoring committee independence	Australian 200 largest firms	-	No significant relation between independent boards and dividend pay-out	+/-
				-	Negative relation between independent boards and debt levels, management ownership and substantial shareholders	
Borokhovich et al.	2005	Dividends, corporate monitors and agency costs	US listed industrial firms (1992-1999)	-	Mean stock-price reaction to dividend surprises is significantly lower for board with majority of outside directors	-
				-	Dividends reduce agency costs	
Belden et al.	2005	Dividends and directors: do outsiders reduce agency costs?	Forbes 500 list (1998-2000)	-	Companies with more outside directors pay higher dividends	+
Al-Najjar and Hussainey	2009	The association between dividend pay-outs and outside directorships	UK listed non-financial firms (1991-2002)	-	Higher number of independent directors pay lower dividends. Consistent with substitution hypotheses	-
Sharma	2011	Independent directors and the propensity to pay dividends	S&P 1500 US public companies (2006)	-	Positive association between the propensity to pay dividends and board independence	+
				-	The characteristics of independent directors are important determinants of the pay-out policy	
Yarram and Dollery	2014	Influence of board characteristics on the dividend policy of Australian firms	Australian listed non-financial firms (2004-2009)	-	Board independence has a significant positive influence on the dividend pay-out of Australian firms	+
				-	Consistent with the outcome model of La Porta (2000)	
Seo, Tomkins and Yi	2014	Board independence and corporate cash holdings	US listed non-financial firms (1996-2006)	-	Firms which had a minority of independent directors in the pre-SOX period increased their cash holdings in the post-SOX period	-
				-	Relationship is smaller for firms which already were subject to intense external monitoring	
Benjamin and Zain	2015	Corporate governance and dividend pay-outs: Are they substitutes or compliments	Malaysian listed firms (2002-2008)	-	Negative relation between board independence and board meeting frequency vs. dividend pay-out	-
				-	Suggest that CG and dividend pay-outs are substitutes	

Appendix 2: SPSS Output

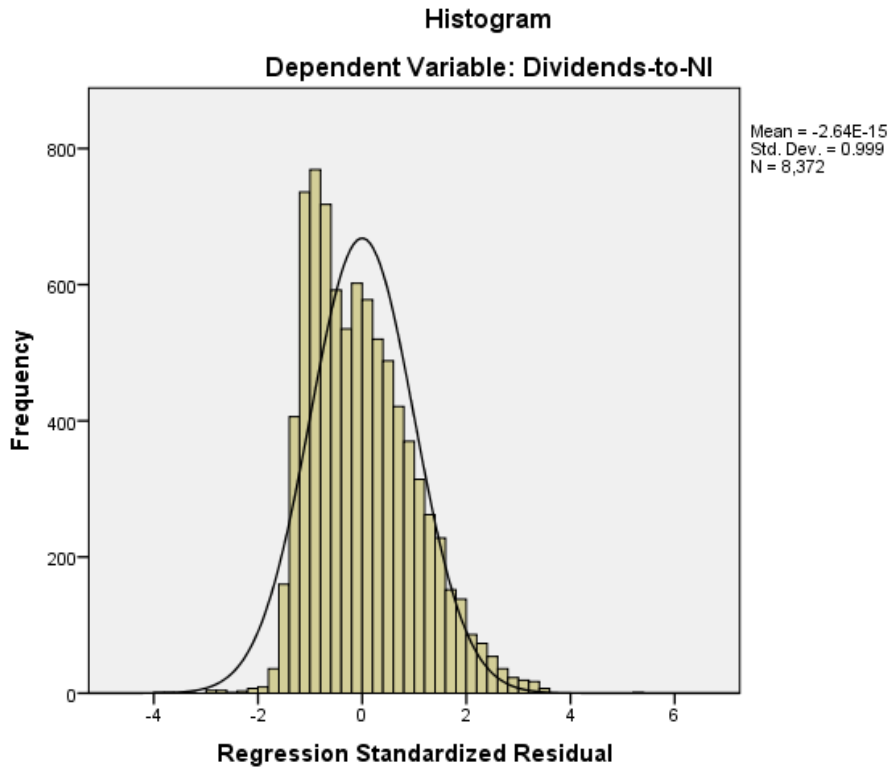
Hypothesis 1 – Regression output

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.033	.005		6.160	.000
	DEP dummy	-.021	.003	-.117	-7.005	.000
	Post_SOX Dummy	.015	.002	.096	7.697	.000
	DEP_POSTSOX	.007	.004	.035	1.969	.049
	% held by Block Holders	-.049	.007	-.083	-7.377	.000
	Leverage	-.006	.005	-.013	-1.146	.252
	Cash holdings	-.018	.003	-.075	-5.654	.000
	ROA	.128	.012	.124	10.743	.000
	Log Firm Size	.008	.001	.151	12.626	.000
	Sales Growth	-.059	.004	-.144	-13.475	.000
	Market-to-book	-.001	.000	-.044	-3.230	.001

a. Dependent Variable: Dividends-to-NI

Hypothesis 1 – Standardised residuals



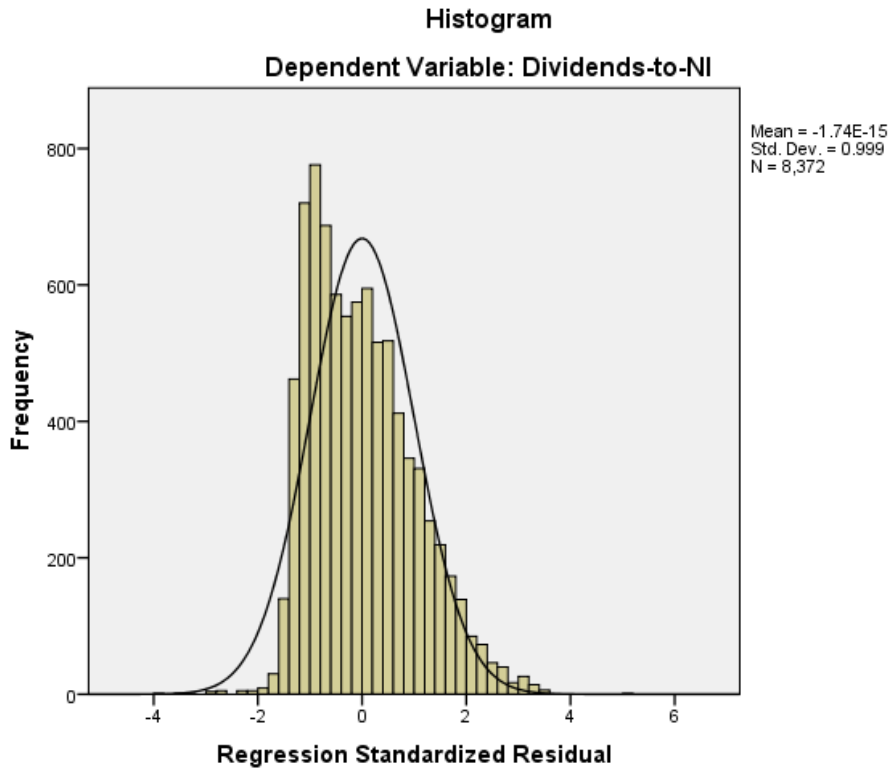
Hypothesis 2 – Regression output

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.015	.005		3.256	.001
	DEP dummy	-.019	.003	-.108	-6.470	.000
	Post_SOX Dummy	.013	.002	.082	6.649	.000
	DEP_POST	.022	.005	.102	4.026	.000
	BLOCK_DEP_POST	-.019	.005	-.078	-3.708	.000
	Leverage	-.010	.005	-.022	-1.998	.046
	Cash holdings	-.018	.003	-.074	-5.569	.000
	ROA	.137	.012	.132	11.506	.000
	Log Firm Size	.009	.001	.177	15.629	.000
	Sales Growth	-.059	.004	-.144	-13.469	.000
	Market-to-book	-.001	.000	-.038	-2.766	.006

a. Dependent Variable: Dividends-to-NI

Hypothesis 2 – Standardised residuals



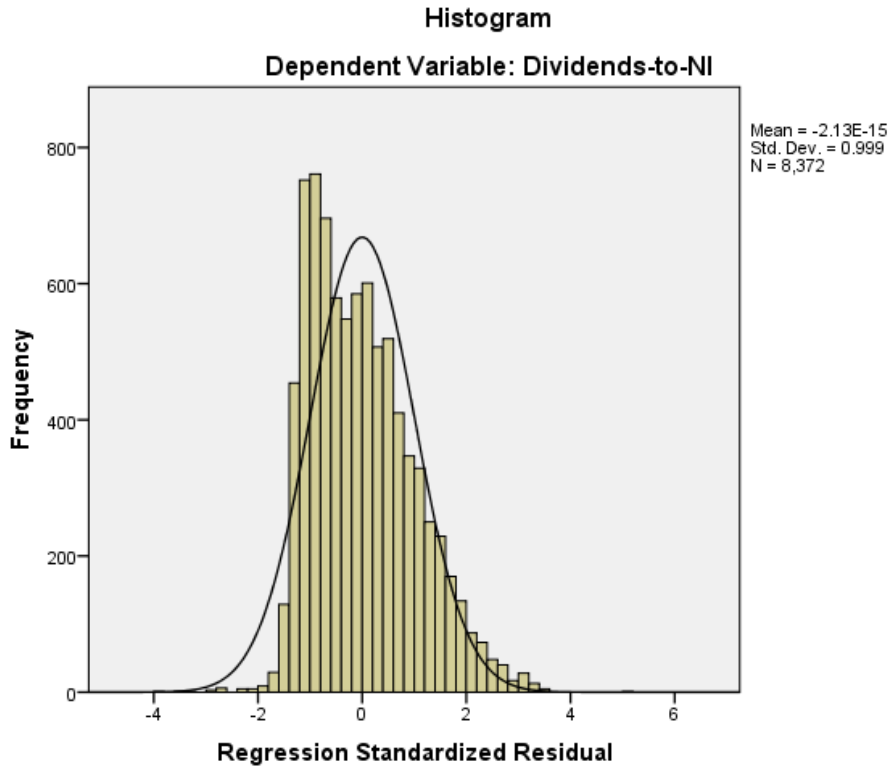
Hypothesis 3 – Regression output

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.014	.005		2.976	.003
	DEP dummy	-.019	.003	-.108	-6.436	.000
	Post_SOX Dummy	.013	.002	.081	6.586	.000
	DEP_POST	.006	.004	.026	1.337	.181
	DEBT_DEP_POST	.004	.004	.013	.945	.344
	Block	-.011	.005	-.024	-2.105	.035
	Cash holdings	-.018	.003	-.074	-5.539	.000
	ROA	.138	.012	.133	11.592	.000
	Log Firm Size	.009	.001	.181	16.021	.000
	Sales Growth	-.060	.004	-.145	-13.525	.000
	Market-to-book	-.001	.000	-.037	-2.728	.006

a. Dependent Variable: Dividends-to-NI

Hypothesis 3 – Standardised residuals



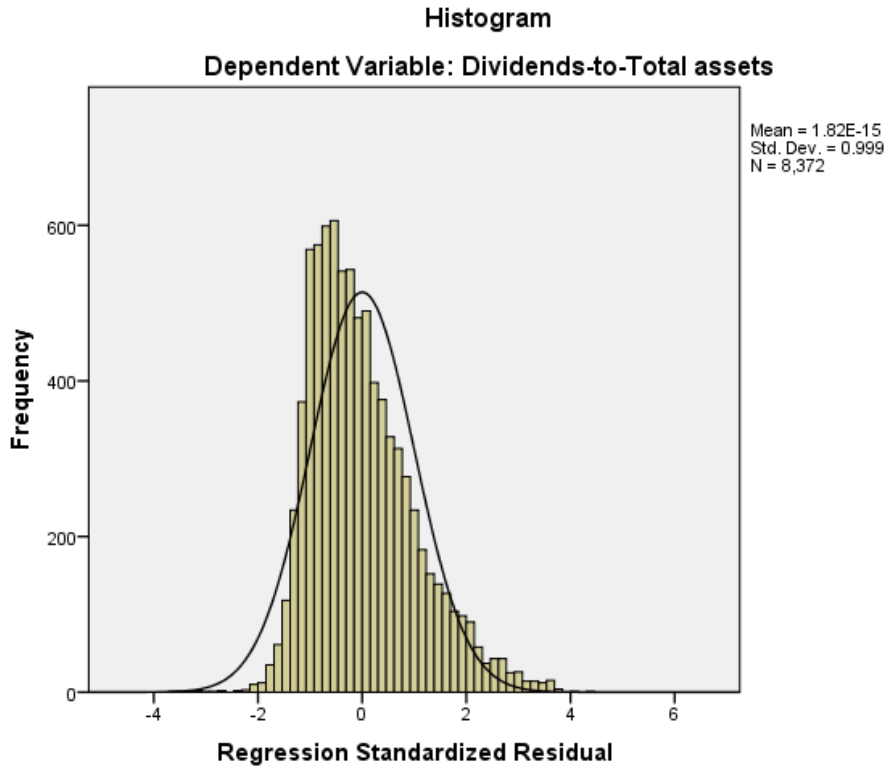
Robustness check – Regression output Dividends-to-assets

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.006	.001		6.242	.000
	DEP dummy	-.003	.001	-.104	-6.410	.000
	Post_SOX Dummy	.002	.000	.091	7.484	.000
	DEP_POSTSOX	.001	.001	.039	2.290	.022
	% held by Block Holders	-.012	.001	-.118	-10.733	.000
	Leverage	.000	.001	-.006	-.592	.554
	Cash holdings	-.005	.001	-.119	-9.249	.000
	ROA	.052	.002	.288	25.669	.000
	Log Firm Size	.001	.000	.095	8.180	.000
	Sales Growth	-.010	.001	-.138	-13.228	.000
	Market-to-book	.000	.000	.064	4.808	.000

a. Dependent Variable: Dividends-to-Total assets

Robustness check – Standardised residuals dividends-to-assets



Robustness check – Regression output Dividends-to-sales

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.009	.001		-8.896	.000
	DEP dummy	-.002	.001	-.071	-4.453	.000
	Post_SOX Dummy	.002	.000	.063	5.266	.000
	DEP_POSTSOX	.001	.001	.019	1.144	.253
	% held by Block Holders	-.011	.001	-.093	-8.592	.000
	Leverage	.005	.001	.064	6.059	.000
	Cash holdings	-.002	.001	-.033	-2.614	.009
	ROA	.044	.002	.222	20.064	.000
	Log Firm Size	.003	.000	.266	23.159	.000
	Sales Growth	-.012	.001	-.152	-14.814	.000
	Market-to-book	.000	.000	.030	2.297	.022

a. Dependent Variable: Dividend-to-sales

Robustness check – Standardised residuals dividends-to-sales