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the Effects of Managerial Entrenchment on Capital
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Executive summary (English)

The aim of this paper is to explain theoretically and empirically how Corporate Governance determines the ways in which companies finance their operations. More precisely, I provide evidence that management-protective (i.e. entrenched) companies feature an increased preference towards debt financing.

Corporate Governance is a concept of great importance in the current economic context. In modern organizations, the power-sharing relationship between shareholders and managers is dictated by the rules of Corporate Governance (Gompers et al., 2003). Meanwhile, Corporate Governance has evolved as an important determinant of financing policy. The direction and importance of this relation has been highlighted by numerous empirical studies, which I document in the present thesis.

The empirical part of this paper builds on the theory that firms with self-interested managements prefer debt over equity financing. By following recent theories, I construct a model aimed at explaining levels of leverage as a function of managerial entrenchment, as measured by the Gompers Index (Gompers et al., 2003) and the Bebchuk Index (Bebchuk et al., 2008).

The first Hypothesis presented in this thesis assumes that entrenched firms enjoy a better access to the debt markets, which determines managers to use more external debt financing (John and Litov, 2010). In order to investigate if the model is subject to causality issues, the second Hypothesis tests the effects of exogenous Corporate Governance shocks represented by the adoption of state anti-takeover laws on leverage. Additionally, the endogeneity issue is addressed by a two-stage least-squares (2 SLS) analysis.

I analyze both Hypotheses by implementing OLS regressions, as well as panel regressions. Because of the low timely variation in the Gompers Index, Bebchuk Index and the Pro-takeover dummy (measuring the effects of anti-takeover laws), panel regression estimates do not possess a high explanatory power.

Results are to a certain extent robust and lead to a confirmation of the first Hypothesis. Due to limitations explained in a separate chapter, the findings of this paper provide only restricted evidence against causality. Therefore, the second Hypothesis is partly rejected.

The thesis is structured in seven chapters. The introduction briefly describes the theoretical background, as well as the research objectives. Chapter 2 documents some of the most relevant theories of the firm and presents the concept of separation between ownership and control. The third chapter reviews the agency theory. Chapter 4 defines the terms „Corporate Governance“ and „Shareholder Value“ and provides evidence about their relevance in the

current economic context. Chapter 5 describes the most common determinants of capital structure, including Corporate Governance, by providing a comparison between the leading studies in this field of research. Chapter 6 comprises the empirical analysis of the main Hypotheses presented in this thesis. Chapter 7 summarizes of the main empirical results and provides the conclusion.

Executive summary (Deutsch)

Ziel dieser Arbeit ist es, den Zusammenhang zwischen Unternehmensführung (Corporate Governance) und Unternehmensfinanzierung zu erklären. Die Ergebnisse der durchgeführten Studie zeigen, dass Unternehmen mit schwachen Unternehmensführungsstrukturen eine Präferenz für Fremdkapitalfinanzierungen aufweisen.

Schwache Unternehmensführungsstrukturen implizieren, dass das Management auf die Maximierung des eigenen Nutzens fokussiert ist und Entscheidungen trifft, die für die Anteilseigner nachteilig sind.

Die Theorie der Unternehmensführung basiert auf der Trennung von Management und Eigentum. Durch diese Trennung sind moderne Organisationen gekennzeichnet wobei zu beachten ist, dass eine solche Trennung zwischen Eigentum und Management zu Prinzipal-Agent Problemen führen kann, sodass die Effizienz von Organisationen sinkt. Andererseits kann eine Trennung von Management und Eigentum unter bestimmten Umständen (z.B. durch die Gestaltung einer geeigneten Unternehmensführungsstruktur) jedoch auch signifikante Wertsteigerungen bewirken.

Ein bedeutender Teil der Literatur befasst sich mit den Auswirkungen der Unternehmensführung auf den Unternehmenswert. Weiters wird der Zusammenhang zwischen Unternehmensführung und Unternehmensfinanzierung untersucht.

Diese Magisterarbeit untersucht das Verhältnis zwischen Corporate Governance und Unternehmensfinanzierung empirisch und leistet so einen wesentlichen Beitrag für die Forschung.

Klassische Theorien unterstellen ein negatives Verhältnis zwischen schwachen Unternehmensführungsstrukturen und dem Fremdfinanzierungsgrad (Jensen und Meckling (1976), Jensen (1986), Grossman und Hart (1982), Berger et al. (1995) und Garvey und Hanka (1999)).

Neuere Studien (John und Litov (2010), Chava et al. (2008), Cremers et al. (2004) und Klock et al. (2004)) zeigen, dass schwache Unternehmensführungsstrukturen eine positive Auswirkung auf die Fremdfinanzierungsquote aufweisen. Die Ergebnisse dieser Arbeit unterstützen die neuere Forschung.

Die erste Hypothese befasst sich mit den Einflüssen einer schwachen Führungsstruktur auf die Fremdkapitalquote. Mithilfe einer zweiten Hypothese wird das Modell auf Kausalität untersucht. Zu diesem Zweck werden die Auswirkungen von staatlichen Übernahmeschutzbestimmungen auf den Fremdfinanzierungsgrad analysiert. Beide Hypothesen werden anhand von OLS, sowie Panel Regressionen getestet. Der Erklärungsgrad

von Panel Regressionen ist wegen des Zeit-invarianten Charakters des G-Index, des E-Index und des Übernahme-Dummys eher eingeschränkt. Die Ergebnisse führen zur Annahme der ersten Hypothese, während die zweite Hypothese nur teilweise angenommen wird. Aufgrund von verschiedenen Einschränkungen, die sich durch den verwendeten Datensatz, sowie durch die Eigenschaften der verwendeten Variablen ergeben, wird die Kausalität der Ergebnisse nicht gänzlich ausgeschlossen.

Diese Arbeit ist in sieben Kapitel gegliedert. Die Einführung beinhaltet eine Kurzbeschreibung der theoretischen Fragestellung, sowie der Forschungsziele dieser Arbeit. Kapitel 2 dokumentiert die wesentlichen Theorien der Unternehmensführung, sowie die Problematik der Trennung von Management und Eigentum. Das dritte Kapitel beinhaltet eine Zusammenfassung über die Prinzipal-Agent Theorie und deren Hintergründe. Kapitel 4 definiert die Konzepte „Corporate Governance“ und „Shareholder Value“, sowie ihre aktuelle ökonomische Relevanz. Im Rahmen des fünften Kapitels werden die wesentlichen Determinanten der Kapitalstruktur untersucht. Die Theorie wird durch eine Gegenüberstellung der wichtigsten Forschungsstudien auf diesem Themengebiet ergänzt. Die im Rahmen dieser Arbeit formulierten Hypothesen werden im Kapitel 6 einer empirischen Analyse unterzogen. Die Zusammenfassung der Endergebnisse erfolgt im Kapitel 7.

1. Introduction and research objectives

Corporate Governance is a concept which has been raising questions across economic literature and in the world of business since Berle and Means (1932), who published their book „The Modern Corporation and Private Property“. Especially during the past three decades, Corporate Governance issues have gained increased attention (Zingales, 1997).

Following the Shareholder Value approach, a management's primary responsibility is to increase returns for the owners of the capital they manage (Rappaport, 1986). However, this ideal situation is not always satisfied. Ronald Coase (1976) discusses the views of Adam Smith (1759) on the nature of the man and underlines the importance of self-interest in determining human behaviour. In his book, „The Theory of Moral Sentiments“, Smith (1759) stated that *„the habits of economy, industry, discretion, attention, and application of thought, are generally supposed to be cultivated from self-interested motives, and at the same time are apprehended to be very praise-worthy qualities, which deserve the esteem and approbation of everybody“*. According to Jensen (1986), self-interest can take the form of entrenchment, which occurs when managers of a company pursue their own goals at the expense of shareholders (Hart, 1995). The conflict of interests between managers and shareholders is defined by Jensen and Meckling (1976) as an agency problem.

In a world of incomplete contracts, which is characterized by the presence of agency conflicts, Corporate Governance becomes crucial. Through the implementation of appropriate Corporate Governance structures, agency issues can be avoided (Hart, 1995).

Finance scholars have been researching the effects of Corporate Governance on the overall performance of corporations, as well as on capital structure. While the effects of Corporate Governance on firm value are broadly acknowledged, there is still much uncertainty about its implications on a firm's financing policy.

Therefore, the present thesis is aimed at explaining how Corporate Governance determines capital structure by analysing the effects of managerial entrenchment on a firm's preferences toward external debt financing. Due to causality issues, the present thesis does not solely focus on the effects of the „internally“ chosen Corporate Governance design (e.g. corporate charter amendments) on leverage. By taking into account takeovers as a „disciplining“ device, this paper explains how exogenous Corporate Governance shocks, represented by the adoption of anti-takeover laws, determine changes in capital structure.

The paper is structured as follows. The introduction describes the theoretical background, as well as the research objectives. Chapter 2 is aimed at defining the firm by confronting different theories of the literature. One characteristic of the firm which leads to the present

discussion is the separation of ownership and control, which will also be described in Chapter 2. Chapter 3 reviews the agency theory and Chapter 4 is aimed at providing a comprehensive understanding of the terms „Shareholder Value“, „Corporate Governance“, as well as their relevance in the current economic context. The theoretical section of this paper is further extended by Chapter 5, which discusses some of the most important determinants of capital structure, including Corporate Governance. Chapter 5 also includes a review of the leading studies of Corporate Governance research and formulates the main Hypotheses of this paper. Chapter 6 comprises a description of the data, variables, as well as the empirical methods and results used for testing the effects of Corporate Governance on leverage. Chapter 7 provides a summary of the main empirical results and concludes.

2. Theory of the firm

2.1. Relevant approaches

Before addressing the ways in which a firm is governed, it needs to be defined why firms exist and what they are. This is why the definition of the firm is a question of central importance for Corporate Governance research (Zingales, 1997). Ever since Adam Smith, economic literature has been trying to explain the existence of the firm and to determine its boundaries. The „invisible hand“ approach relies on the assumption of perfect markets and states that the most efficient allocation of resources is achieved by the price mechanism (Smith, 1776). According to Lóránth (2010), in perfekt markets, individuals are able to borrow on the same terms as corporations. Furthermore, perfect markets are characterized by homogeneous information, the absence of financial distress costs, as well as the absence of agency costs and the absence of taxes. Therefore, if inefficiencies, e.g. transaction costs arise, the price mechanism cannot solely be made responsible for allocating resources towards their most efficient use (Coase, 1937). Market transaction costs are, according to Fabel (2009), costs of designing and establishing „organized“ markets, but can also take the form of advertising and information costs of sellers and search costs of buyers. Within corporations, transaction costs are the costs of aggregating and allocating information, as well as costs of the information loss which arises due to hierarchical organizational structures. Generally, transaction costs take the form of motivational costs, which emerge due to imperfect or asymmetrical information, as well as due to an inefficient decision enforcement (Fabel, 2009). According to Coase (1937), firms will emerge whenever the (transaction) costs of the activities undertaken within markets outweigh the (transaction) costs of activities carried out under the existence of authority. Coase quotes Robertson (1923) when describing firms as *„islands of conscious power in this ocean of unconscious cooperation“* (Coase, 1937). If transaction costs can be minimized by specialization under authority, carrying out activities within firms will be more efficient than operating them on the „free“ market (Coase, 1937).

In contradiction to the view that actions in a firm should be coordinated by authority, Alchian and Demsetz (1972) emphasize the importance of contracts as voluntary exchanges, as well as the idea that firms are defined by joint input and team production. In their view, firms are nothing else than a central entity, acting as a „common party“ in a bilateral contractual agreement with the owners of input (e.g. suppliers, employees, owners, etc.). In this constellation, firms have the role of facilitating the efficient organization of the joint inputs in the form of team production (Alchian and Demsetz, 1972). In his paper

„Corporate Governance“, Zingales (1997) reviews different theories of the firm and their connection to Corporate Governance. According to Zingales (1997), the approach used by Alchian and Demsetz (1972) for defining the firm does not emphasize the „uniqueness“ of Corporate Governance, which is only *„a more complex version of standard contractual governance“* (Zingales, 1997).

Building on the foundations laid by Coase (1937) and Alchian and Demsetz (1972), Jensen and Meckling (1976) define the private corporation as a *„legal fiction which serves as a nexus for contracting relationships and which is also characterized by the existence of divisible residual claims on the assets and cash flows of the organization which can generally be sold without permission of other contracting individuals“*. In other words, they define the firm as a set of complex exchange relationships between the legal fiction (i.e. the firm) and the owners of inputs (capital, raw materials, labour) on the one side, and the consumers of output on the other (Jensen and Meckling 1976). In their article „Investor Protection and Corporate Governance“, La Porta et al. (1999) critically discuss the approach of Jensen and Meckling (1976) towards corporations. According to La Porta et al. (1999), the theory of Jensen and Meckling does not explain why managers should create value for shareholders. Contracts may entitle the owners of capital, such as shareholders and creditors, to claim their rights to a firm’s cash flows. However, according to Jensen and Meckling (1976), the returns to investors cannot be taken for granted, as the risk of expropriation by managers is high. The only limitation on the opportunistic behaviour of managers, as seen by Jensen and Meckling (1976), is their residual equity ownership (La Porta et al., 1999). However, there are several other methods to create managerial incentives of maximizing Shareholder Value (Hart, 1995). Some of these methods will be discussed by this thesis.

By extending the approach of Jensen and Meckling (1976), other scholars assume that firms are more than just a nexus of contracting relationships. An interesting approach in this regard is the property rights view provided by Grossman and Hart (1986) and Hart and Moore (1990). These authors define the firm as a collection of physical assets that are jointly owned. Their work concentrates on the distribution of residual contractual rights in a world of incomplete contracts. Since ownership allows making decisions in states of the world which are not specified by contractual agreements, the allocation of property rights is a matter of central importance in defining the firm. Therefore, Grossman and Hart (1986) and Hart and Moore (1990) define the allocation of ownership as the essence of Corporate Governance. Zingales (1997) discusses the drawbacks of this theory and criticizes the assumption that the ownership over physical assets constitutes the only source of power within corporations.

Since firms are more than just collections of physical assets, the importance of constituencies which cannot be „owned“ (for example, employees) is crucial (Zingales, 1997).

According to Zingales (1997), a more comprehensive understanding is provided by Rajan and Zingales (1998, 2001), who view the firm as a „*nexus of specific investments, a combination of mutually specialized assets and people*“. In contrast to the approach of Alchian and Demsetz (1972), the complexity of a firm cannot instantaneously be replicated by voluntary contracts, and, contrary to the property rights approach, all parties participating on the output (suppliers, workers, customers, owners) belong to the firm. According to Rajan and Zingales (1998, 2001), it is very important to view the firm as an economic entity rather than just a legal body (Zingales, 1997).

2.2. Separation of ownership and control

While the theories described in the previous sub-chapter present different approaches for defining the existence and nature of firms, it is important to conclude that, after all, „*the form of organization that survives in an activity is the one that delivers the product demanded by customers at the lowest price while covering costs.*“ (Fama and Jensen, 1983).

An important task of Corporate Governance research is to explain the ways in which companies increase value, especially when these companies are characterized by a separation of ownership and control. According to the theory of Jensen and Meckling (1976), the separation of ownership and control is a source for agency conflicts. Therefore, it is important to investigate how companies minimize such conflicts in order to achieve efficiency. Before addressing this topic in a forthcoming chapter, it is important to provide an understanding of the terms „ownership“ and „control“.

According to Fama and Jensen (1983), in the decision process of firms, ownership represents the exclusive authority to determine how a resource is used, and control is the mechanism for guiding and regulating the activities of subjects.

Separation of decision and risk-bearing functions is common to all types of organizations, ranging from large corporations to professional partnerships, mutual funds and non-profit firms. Separation of ownership and control is also a trigger for agency problems. The success of organizations characterized by the separation of ownership and control is ensured by specialization of management and risk-bearing, and also by the ability of these organizations to control the agency problems triggered by the separation of these functions (Fama and Jensen, 1983). The next chapter presents the agency theory, as well as the ways in which companies minimize agency problems by designing an appropriate system for the allocation

of decision and control rights. Meanwhile, the process of allocating decision and control rights represents the basis for defining Corporate Governance.

3. Agency theory

3.1. General facts

Agency problems emerge e.g. in a world of incomplete contracts, which cannot be written and enforced in a cost effective manner. According to Hart (1995), an incomplete contract does not specify the behaviour of its parties in all possible states of the world. The efforts of balancing the conflicting interests arising among the agents of a firm are called agency costs. Agency costs are the costs of structuring, monitoring and bonding contracts between conflicting agents. Additionally, agency costs include the residual loss caused when the cost of implementation of such mechanisms exceeds its benefits (Jensen and Meckling, 1976).

As stated in the previous chapter, agency problems are most likely to arise when management and ownership are separated. As stated by Adam Smith (1776), „*The directors of such [joint-stock] companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company*“.

According to Fama and Jensen (1983), agency conflicts can be mitigated by designing a proper system of decision control. In some situations, an efficient system of decision control is achieved by strictly separating decision control from decision management. This is mostly efficient in large, complex organizations, where decision management is implemented by agents with valuable relevant knowledge, delegated by residual risk-bearing claimants (i.e. shareholders), who are often too diffused or unqualified for overtaking the decision process. In such cases, specialization, provided by the strict separation of ownership and control, reduces agency problems by limiting the power of individual decision agents to expropriate residual claimants.

In other situations, it is more efficient to concentrate ownership and control into one or a few agents. In small, non-complex organizations, the restriction of residual claims to the important decision agents is a substitute for other costly control mechanisms. An example in this regard

are family enterprises or professional partnerships. For such firms, delegating decision and risk-bearing to one or a few agents does not lead to agency conflicts with the other residual claimants. In these cases, close relationships, goodwill, trust and advice substitute for any control device (Fama and Jensen, 1983).

Fama and Jensen (1983) also state that, due to the high costs of writing and enforcing contracts, there is no „one best way“ for designing decision systems and mechanisms for allocating residual claims. The benefits of small, non-complex organizations in mitigating agency costs is partly overturned by liquidity constraints emerging from the lack of risk diversification. Meanwhile, large, complex (open) companies enjoy the advantages of dispersed ownership (increased risk-sharing, higher liquidity and the flexibility of concentrating shares when needed), but they need to engage higher efforts in incentivizing managers and mitigating free-rider problems. Therefore, organizational survival involves a trade-off between the costs and benefits of alternative decision systems and systems of residual risk allocation (Fama and Jensen, 1983).

The separation of decision and risk-bearing functions represents the starting point for defining Corporate Governance. Meanwhile, the aim of Corporate Governance in this context is to balance the agency conflicts and to align the interests of owners and managers (Hart, 1995).

Prior to a more detailed discussion of Corporate Governance, the following chapters will review the main types of agency conflicts.

3.2. Agency costs of free cash flow

Large, public companies which operate in mature industries often realise large amounts of free cash flow. In such companies, conflicts arise between shareholders and managers regarding the most appropriate payout policy. The resulting costs thereof are the agency costs of free cash flow (Jensen, 1986). In his paper, Jensen (1986) investigates the determinants of this type of agency costs. According to his theory, managers tend to excessively increase the growth of their companies, as this increases the resources under their control. Their incentives in this regard are high, since growth is positively associated with compensation, which is in this case provided in the form of bonuses or promotion.

Due to these strong incentives of extending the size of their companies, managers are reluctant with respect to the payout of cash to shareholders, since this could reduce their "power". Unavailability of internal funds may cause managers to appeal to external financing, which is often only available at very high costs. In other words, paying out the cash can expose managers to monitorization through capital markets (Jensen, 1986).

In many cases, market competition determines companies to focus on their core competences and incentivizes management to increase efficiency. However, when the disciplinary effect of markets is constrained, e.g. in the case of new innovations or activities which generate high amounts of free cash flow (also called „economic rents“ or „quasi rents“), motivating managers towards efficiency is better achieved through internal control mechanisms and through the market for corporate control (Jensen, 1986). These mechanisms will be discussed in more detail in Chapter 5.

According to Jensen (1986), inducing the management to disgorge the cash rather than investing it into wasteful investment projects can also be realised by designing an appropriate capital structure, i.e. by introducing an optimal portion of debt. Outside financing has a „disciplining“ effect on firms as it imposes constraints on the management’s behaviour. Under the assumption that managers dislike bankruptcy, debt will reduce the resources under management’s control and will force the firm to focus on its core competences. In contrast to dividend payout promises, which do not commit managers to increase the amount of future payments, debt issues *„effectively bond their promise to pay out future cash flows“* (Jensen, 1988).

Supporting this view, Oliver Williamson (1987) argued that a possible solution for mitigating agency issues would be to invest solely in debt, especially for firms with highly redeployable assets. Because debtholder protection is high (i.e. through collaterals or changing debt maturity), debtholders have more advantages over shareholders, who have open-ended contracts without specific protection. However, since a high portion of debt can easily trigger financial distress, it is best for corporations to rely on a combination of debt and equity capital (Jensen (1986).

3.3. Agency costs of debt

In the previous chapter it was argued that outside debt is not always the „remedy“ for solving agency conflicts. Whenever a company increases outside debt, agency issues arise as a principal-agent problem between shareholders and debtholders. Shareholders hold a call option on the levered assets of the firm with exercise price equal to debt, while bondholders have sold a put option on the company’s assets with exercise price equal to debt (Lóránth, 2010).

According to the Anglo-Saxon view on Corporate Governance (which will be described in more detail in the next chapter), shareholders, as residual claimants of the firm’s cash flows, are interested in maximizing firm value. This should also benefit bondholders, who represent

the other main supplier of capital (Cremers et al., 2004). However, as I will show in more detail later, several studies reveal that higher value for shareholders may not always imply more benefits for bondholders. Here, the main determinant of agency problems is risk. Since shareholders have unlimited upside potential and limited liability, they tend to shift risks towards debtholders while undertaking risky investment projects. While this behaviour increases volatility, bondholders require higher payments for the capital they provide. An extreme case is the one of a leveraged buyout, which may create value for shareholders, but may also seriously harm target debtholders by increasing the probability of a company's bankruptcy (Cremers et al., 2004). Risk shifting, asset substitution and underinvestment are just a few examples of agency costs of debt (Lóránth, 2010).

Mitigating agency costs in a world of incomplete contracts requires efficient protection for the owners of equity, which can only be provided by appropriate Corporate Governance structures (La Porta et al., 1999 and Hart, 1995). According to Hart (1995), Corporate Governance mechanisms „*allocate the residual rights of control over a firm's nonhuman assets*“, given that the rights have not been specified by an initial contract. Therefore, Corporate Governance is an issue in small, closely-held firms, as well as in large, publicly-held corporations (Hart, 1995). The upcoming chapter is aimed at providing the definition of Corporate Governance, as well as explaining its relevance in the current economic context.

4. The concept of Corporate Governance

4.1. Definitions of Corporate Governance

In large, publicly-owned firms, Corporate Governance is more complex than in small, privately-owned companies. Due to free-rider issues of dispersed ownership, shareholders have little incentives to monitor the management. Since monitoring management increases firm value, this process would lead to an increase in value of all shareholders. As monitoring efforts are costly, each shareholder will free-ride, while expecting that the other shareholders will perform the monitoring. As a consequence, there will be a lack of monitoring, which may lead to managerial entrenchment (Hart, 1995).

Therefore, for public companies, Corporate Governance implies, as briefly stated in the previous chapters, an allocation of decision and control rights, as well as mechanisms for managerial control. Two-tiered systems, proxy fights, the existence of one or more large shareholders, the occurrence of hostile takeovers and financial structure, are some of the few methods for preventing shareholders from expropriation by the management (Hart, 1995). The upcoming chapters of this thesis emphasize the relationship between capital structure and Corporate Governance. Additionally, the effect of hostile takeovers on managerial entrenchment will be discussed.

For now, this chapter presents the concepts of Corporate Governance and Shareholder Value, as well as their relevance in the current context of economic activity. As the implications of Corporate Governance on firm value are also a question of great importance among economic research, this topic will be also addressed in this section.

Following the conclusions of the previous chapter and according to Bernheim and Whinston (1986) and Becht et al. (2005), Corporate Governance is a „*common agency problem*“ between the Chief Executive Officer (CEO) of a corporation and multiple principals, i.e. shareholders, employees, creditors, suppliers, customers, or other constituencies involved in any contractual relationship with the corporation he is representing. In this constellation, boards and external auditors play the role of intermediaries or representatives of these constituencies (Becht et al., 2005). Looking back on the definition of Jensen and Meckling (1976), who describe the firm as a „*nexus of contracting relationships*“, Corporate Governance can be thought of as the set of rules emerging from the contracting process between the various principals and constituencies and the CEO (Becht et al., 2005). Meanwhile, Corporate Governance is aimed at providing the structure through which the objectives of a company are set and enforced

(Organization for Economic Co-operation and Development (OECD), 2004). Nevertheless, research links Corporate Governance to the exercise of authority, direction and control within corporations (Committee on the Financial Aspects of Corporate Governance, 1992). Here are some of the most famous definitions of Corporate Governance:

- „Corporations are republics. The ultimate authority rests with voters (shareholders). These voters elect representatives (directors) who delegate most decisions to bureaucrats (managers). As in any republic, the actual power-sharing relationship depends upon the specific rules of governance.“ (Gompers et al., 2003)
- „Corporate Governance is, to a large extent, a set of mechanisms through which outside investors protect themselves against expropriation by the insiders.“ (La Porta et al., 1999)
- ”Corporate Governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment. How do the suppliers of finance get managers to return some of the profits to them? How do they make sure that managers do not steal the capital they supply or invest in bad projects? How do suppliers of finance control managers?” (Shleifer and Vishny, 1997)
- ”Corporate Governance describes the legal and factual regulatory framework for managing and supervising a company.“ (German Code of Corporate Governance, 2010)

In order to provide a proper contracting framework, Corporate Governance has to be efficient. The most important efficiency criterion of Corporate Governance is Shareholder Value (Becht et al., 2005). Managing for Shareholder Value is about maximizing the wealth of a company's shareholders. Since shareholders are mainly investors who target a positive return on their investment, „a CEO's job is about resource allocation with a goal of earning a return in excess of the opportunity cost of capital“ (Mauboussin, 2011). An advocate of the Shareholder Value approach is also Oliver Williamson (1985), who supports the view that shareholders represent the constituency with the highest need for protection within corporations. While the property of other stakeholders (i.e. labour, raw material, electric power) cannot be easily expropriated, the investment of shareholders is potentially placed at hazard (Williamson, 1985).

Nevertheless, managers of a firm must operate their companies in an efficient way that satisfies the diverse claims of employees, suppliers and creditors. Long-term value creation benefits not only the shareholders of a firm, but „the value of all other stakeholder claims“ (Rappaport, 1986). Therefore, as Shareholder Value increases total welfare

(Rappaport, 1986), its creation is a matter of central importance in the current economic context.

4.2. Shareholder Value as a determinant of different Corporate Governance systems

In the previous section, evidence has been provided for Shareholder Value as a firm value-enhancing device. According to Williamson (1985), Shareholder Value creation is achieved when the owners of equity enjoy a high degree of protection. According to La Porta et al. (1999), the degree of shareholder protection, and implicitly the quality of Corporate Governance varies among countries with different legal origins. The quality of Corporate Governance is determined by factors like law enforcement, surveillance through capital markets and the quality of accounting standards. Additionally, the design of the specific corporate charter, which defines the level of shareholder protection, varies among countries and companies (Gompers et al., 2003). Chapter 5 will dedicate deeper attention to the ways in which corporate charter provisions determine the level of shareholder protection. Literature generally defines two main systems of Corporate Governance (La Porta et al., 1999).

The Anglo-Saxon legal family, consisting of the United Kingdom (U.K.) and its former colonies (including the United States - U.S., Canada, Australia, New Zealand and a big part of Africa and South Asia), belongs to the common law (La Porta et al., 1999, Franks and Myer, 2000). The Anglo-Saxon system of Corporate Governance (also called „outsider system“) is characterized by dispersed ownership. Strong securities markets and a strong law enforcement, especially with respect to disclosure standards, allow for an extensive monitoring of corporate activity. Additionally, the Anglo-Saxon system is characterized by high share turnover and high transparency. Therefore, research catalogates countries in the Anglo-Saxon area as shareholder friendly, with a high level of Corporate Governance quality (La Porta et al., 1999).

The civil law Corporate Governance „insider system“ distinguishes between „French civil law“ and „German civil law“. French civil law countries include France and the former Dutch, Belgian and Spanish colonies, as well as Latin America and Japan. The German civil law tradition is present in Germanic countries in Europe, as well as a few countries in East Asia (La Porta et al., 1999, Franks and Myer, 2000).

Generally, the Continental-European Corporate Governance system is characterized by concentrated ownership structures. Companies are owned by large blockholders, who enjoy high private benefits of control. Securities markets are rather weak, with lower disclosure and transparency standards. In this context, countries in the Continental-European system are

classified by research as being less shareholder protective, with low quality standards of Corporate Governance (La Porta et al., 1999, Coffee, 2001).

4.3. Side note – Corporate Governance of German corporations

In order to provide a better understanding of the differences between „insider“ and „outsider“ Corporate Governance structures, this chapter comprises a brief description of the Corporate Governance of German corporations.

As Germany belongs to the civil law tradition, its degree of outside investor protection is not as high as in Anglo-Saxon countries (e.g. U.K., U.S.). However, Germany provides a better protection for shareholders and creditors than French civil law countries (La Porta et al., 1999). By contrast to common law countries, Germany is characterized by weak securities markets. While the London Stock Exchange listed about 2,652 U.K. companies in January 2011 (London Stock Exchange, 2012), the Frankfurt Stock Exchange quoted only 1,082 German companies as of January 2011 (Frankfurt Stock Exchange, 2012).

As mentioned in the previous chapter, German Corporations manifest high levels of ownership concentration. According to Franks and Myer (2000), more than 80% of the largest quoted German companies have a single large shareholder owning more than 25% of voting shares. These large blocks of shares are primarily held by families and other companies (Franks and Myer, 2000). Corporate holdings feature complex patterns, involving pyramidal structures, as well as cross-shareholdings, which hinder the occurrence of hostile takeovers (Rajan and Zingales, 1995). Franks and Myer (2000) define a pyramidal structure as a corporation in which there is at least one large shareholder owning more than 10% of shares through another company. Cross-shareholdings are reciprocal equity linkages between different companies (Onetti and Pisoni, 2009). This is the case when e.g. a company holds a share in another company, and the latter also holds a share in the first one (Wastl and Wagner, 1997).

In this context, the role of institutional investors, e.g. trusts and insurance companies, is relatively low compared to the role such shareholders play in the U.S. or U.K. As pension funds are financed on a current basis out of a firm's own earnings, such institutional investors account only for 14.7% of dominant shareholdings (i.e. shareholdings exceeding 25% of total shares), according to Franks and Myer (2000).

In order to monitor their managements, German companies are governed by two-tier (or dual-class) board structures, consisting of a management board and a supervisory board (Franks and Myer, 2000). The supervisory board includes representatives of shareholders,

employees and other stakeholders. Its role consists of supporting the interests of these constituencies towards a firm's directors (Baums, 1994).

Meanwhile, banks confer additional monitoring, not necessarily through direct ownership, but mainly over proxy votes, which allow them to offer advisory and voting services on behalf of a firm's shareholders (Franks and Myer, 2000). Because of the great influence of banks on companies through both debt and equity holdings, especially in a context of underdeveloped stock markets, La Porta et al. (1999) classify Germany as being a „bank-centered“ Corporate Governance system.

According to Franks and Myer (2000), these distinctive features of German Corporate Governance do not imply significantly different levels of managerial entrenchment, as compared to the U.S. or U.K.. However, as stated by Rajan and Zingales (1995), the implications of different systems of Corporate Governance on leverage are not negligible. As these implications represent a topic of interest for the present analysis, I will return to the distinction between Anglo-Saxon and Continental-European Corporate Governance in a later chapter of this thesis.

4.4. Advocating for worldwide Shareholder Value: the takeover wave of the 1980's

The previous sections have documented various aspects of Shareholder Value, reflected by different systems of Corporate Governance. Even if its implications on welfare have only become clear during the past three decades, the Shareholder Value approach is gaining worldwide increased attention (Zingales, 1997).

At the beginning of the 1980's, the Shareholder Value approach, as well as the term „Corporate Governance“ were rather ambiguous. Companies in highly profitable, mature industries, such as the oil industry, were devoting their excess cash towards wasteful, overdiversifying investments. This implies that agency costs of free cash flow were large and the stock market rapidly seized the gap between the true value and the potential value of such corporations (i.e. if they were run in a value-maximizing manner). This led to the well-known takeover movement of the late 1980's, during which entrenched managements were replaced by corporate raiders aimed at closing the „value gap“ and providing value for shareholders. Merger and acquisition transactions have affected many sectors of the U.S. economy ranging from the already mentioned oil and gas industry, banking and finance, insurance, food processing, mining and minerals. Figure 1 provides an overview about the acquisition activity between 1981 and 1984 (Rappaport, 1986 and Jensen, 1988). The first bar displays the merger and acquisition activity by economic sector as a percent of total takeover transactions for

which valuation data are publicly reported, while the second bar depicts data on industry size measured as a fraction of overall corporate market value (Jensen, 1988, Grimm, 1984). Data are depicted as per end of 1984. Total value is calculated as the sum of the market value of common equity for 4,305 companies, including 1,501 companies on the New York Stock Exchange, 724 on the American Stock Exchange, plus 2,080 companies on the over-the-counter market (The Media General Financial Weekly, 1984).

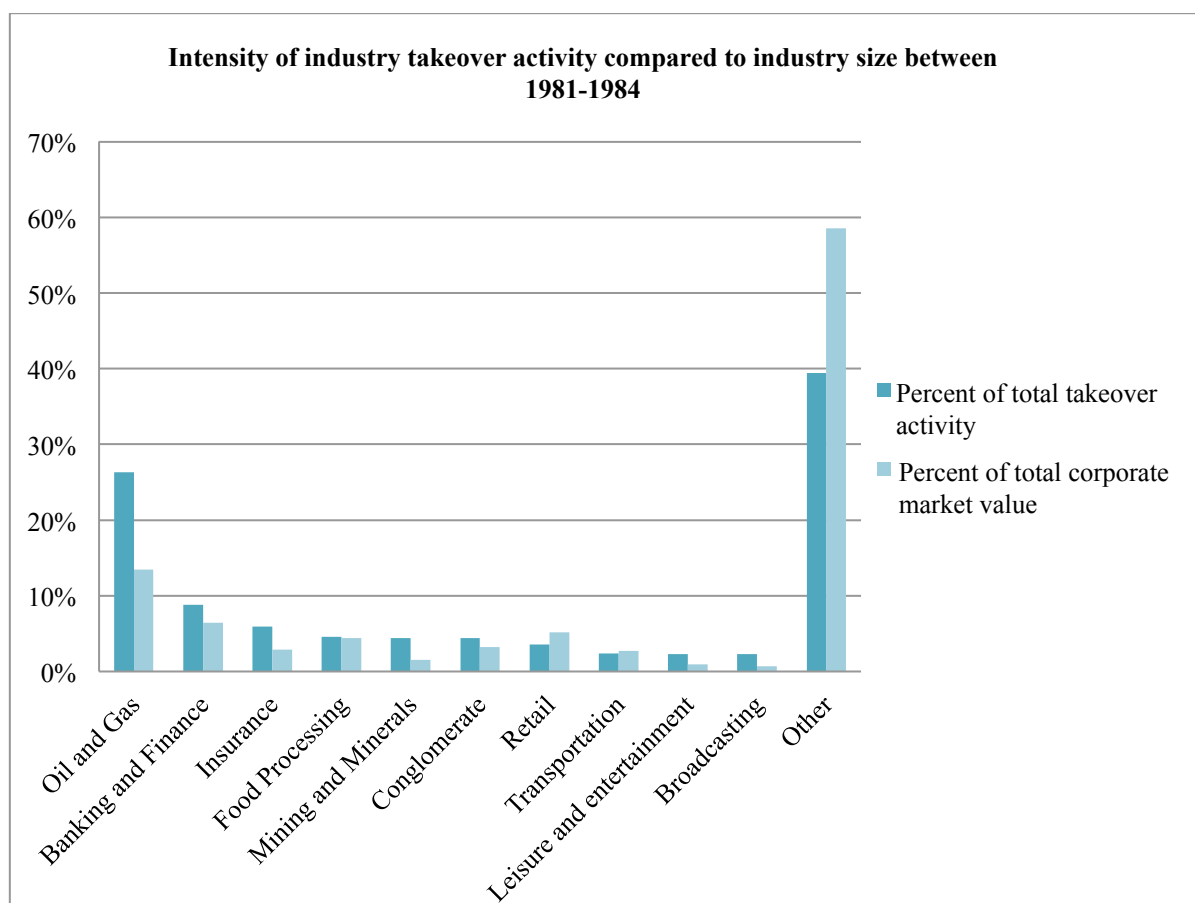


Figure 1: Intensity of industry takeover activity compared to industry size between 1981-1984 (Jensen, 1988 and Grimm, 1984).

Due to the excessively leveraged buyouts, many raiders retired at the beginning of the 90's. However, the takeover wave had induced a new approach on the performance management of companies (Jensen, 1988). The old short-term approach towards value creation was replaced by the goal of creating „consistent, profitable growth (...) and a return to the investor that is consistently above what he could earn somewhere else at a similar risk“ (Pfeiffer, 2011).

At the beginning of the 1990's, the task of monitoring managers and improving underperforming companies was shifted from corporate raiders to institutional investors. Internationally operated institutional shareholders, particularly American pension funds, required returns on equity up to 15%. In the context of capital market internationalization,

such requirements forced companies to increase quality standards in order to be able to face competition (Zimmermann, 1998). According to Rappaport (1986), creating Shareholder Value is becoming matter of central importance for a vast number of corporations. As stated before in this chapter, creating Shareholder Value is a prerequisite of Corporate Governance. Therefore, in the next section, the relevance of Corporate Governance will be discussed.

4.5. Relevance of Corporate Governance

4.5.1. Current economic context

Corporate Governance is with certainty a highly relevant issue in the current economical context. Becht et al. (2005) identified some of the main reasons why Corporate Governance has generated such strong debate during the past three decades:

- i) the world-wide wave of privatization of the 1980s and 1990s;
 - ii) pension fund reform and the increase in private savings;
 - iii) the U.S. takeover wave of the 1980s and a series of merger and takeover movements in Europe at the beginning of the 1990s and 2000s;
 - iv) deregulation and the integration of capital markets;
 - v) the 1998 East Asia crisis, which has increased the importance of Corporate Governance in emerging markets;
 - vi) a series of recent USA scandals and corporate failures.
- i) Starting with 1990, **privatization policy** took over the world. Especially OECD countries in Latin America, Western Europe, Asia and the former Soviet Union started selling their state-owned enterprises. Following the model of the U.S., where privately-owned enterprises were rather common, industrialized countries needed to adopt market-oriented policies by spreading share ownership and fostering capitalism (Bortolotti and Pinotti, 2005). The OECD privatization programmes determined the sale of seizable companies with great market power, like British Aerospace in the U.K., Rhône Poulenc and Paribas in France (Bortolotti and Pinotti, 2005) or Telekom in Germany, which generated total revenues of 2.7% and country proceeds of up to 27% of local Gross Domestic Product (GDP) (Becht et al., 2005). Figure 2 depicts the revenue share generated by public offerings for different continents. With public offerings amounting over U.S. \$200 billion and total privatization revenues exceeding

U.S. \$500 billion, Europe was the leader with respect to privatization between 1977 and 1999, according to data provided by Bortolotti et al. (2000).

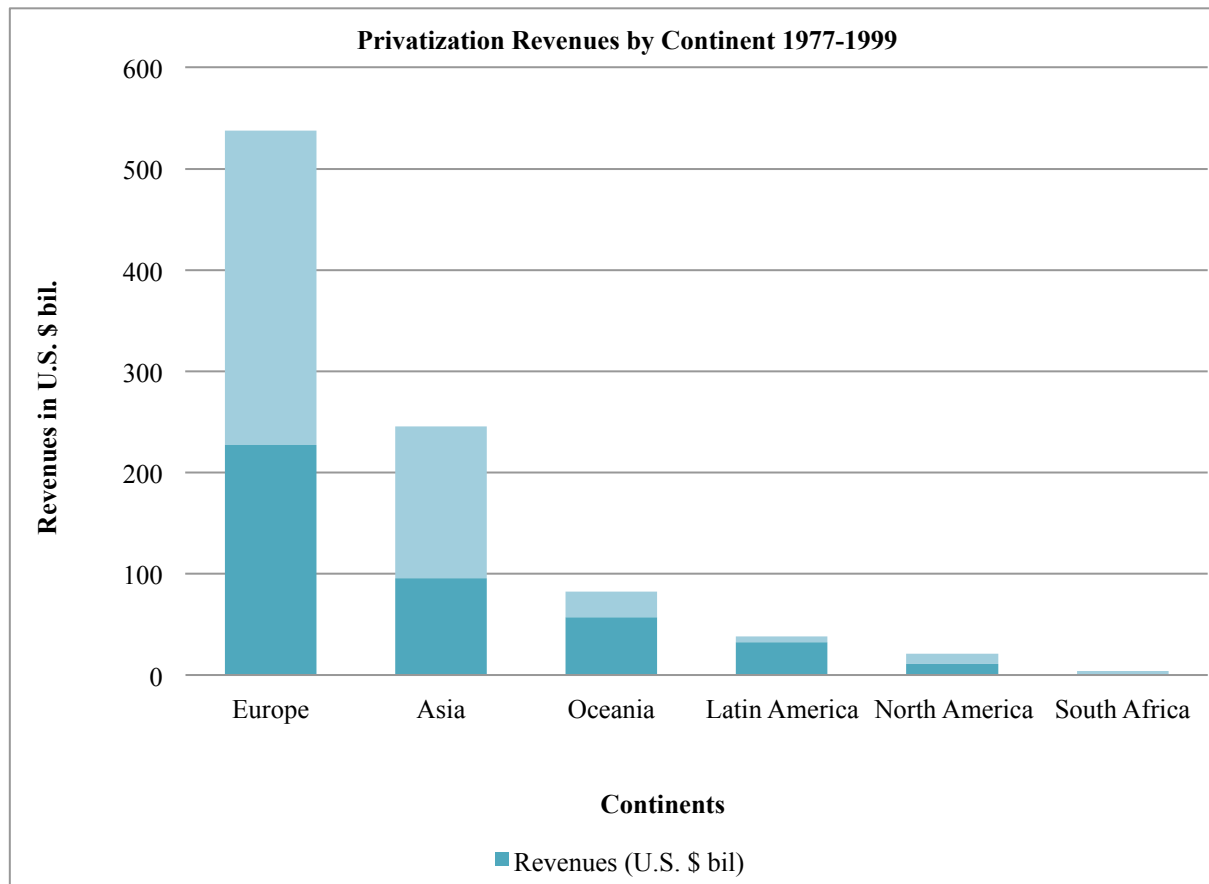


Figure 2: Privatization revenues by continent 1977-1999 (Bortolotti et al., 2000)

The United Kingdom was an illustrative example, not only by being a pioneer of the privatization process, but also by achieving a record of 58% of total OECD and 90% of European Community privatization proceeds by 1991 (Bortolotti and Pinotti, 2005 and Becht et al., 2005).

ii) Corporate Governance is also strongly linked to shareholder activism and institutional investment. Shareholder activism has become an important component of financial markets over the past 25 years (Becht et al., 2005). Its existence is derived from the Securities and Exchange Commission's (SEC) Shareholder Proposal Rule 14a-8, which allows shareholders to submit their concerns for inclusion in the proxy material and eventually present them at the annual general meeting. Proxy materials are documents regulated by the SEC in which a public company outlines its methods and procedures. These documents are aimed at providing information for shareholders and require votes for corporate decisions, e.g. the election of directors and other corporate actions (Investopedia, 2012). For activist shareholders, whose primary goal was to increase value for poorly performing firms in their portfolios, the SEC's

14a-8 regulation has created new opportunities, especially by allowing the promulgation of Corporate Governance concerns (Gillan and Starks, 2000). The importance of institutional investors - investment companies, insurance funds, banks, and especially **pension funds** - has been increasing during the 1980s and in the early 1990s. This growing trend was mainly determined by the growth in defined contribution pension plans. According to Investopedia (2012), defined contribution pension plans are „*retirement plans in which a certain amount or percentage of money is set aside each year by a company for the benefit of the employee.*“ These funds can be withdrawn without penalties only when certain (timely) conditions are met (Investopedia, 2012).

A large fraction of household savings led to the growth in pension fund's assets, so institutional investor's equity ownership raised from 24,2% in 1980 to just under 50% in 1994 according to Gillan and Starks (2000).

iii) As already discussed in the previous chapter, **the takeover wave of the 1980's** has considerably changed companies' approaches towards Corporate Governance.

The debate on Corporate Governance was further sustained by European **merger and takeover movements** at the beginning of the 1990s and 2000s (Becht et al., 2005). High profile cross-border hostile takeover-bids involving newly privatized firms have animated the political and regulatory background of continental Europe. An example in this regard is the hostile cross-border bid in which Vodafone successfully took over Mannesmann. The U.S. \$199 billion deal took place in 2000 and represented at that point in time the largest hostile takeover bid in Europe's history. Without experiencing opposition from the social democratic administrations at that time, hostile takeovers in France (BNP Paribas; Elf Aquitaine for Total Fina) and Italy (Olivetti for Telecom Italia; Generali for INA) have filled the public agenda (Becht et al., 2005). However, the volume of mergers and acquisitions did not solely increase for Europe. World-wide, the volume of deals raised from U.S. \$342 billion in 1992 to U.S. \$3.3 trillion in 2000. Competition in terms of market size determined interesting mergers, such as Citibank and Travelers, Exxon and Mobil, Boeing and McDonnell Douglas, Chrysler and Daimler Benz and AOL and Time Warner (Lipton, 2006).

iv) Besides of its crucial role within mergers and takeovers, Corporate Governance was partly intended at protecting and encouraging investment within emerging markets (Asia and in particular the European Union and the introduction of the Euro). The **integration of world capital markets**, together with the increasing equity capital financing during the 1990 turned the attention again towards Corporate Governance issues.

Together with the increasing need of European companies for foreign, especially U.S. and U.K., equity capital, which often imposed certain competitiveness requirements, the Anglo-Saxon „equity culture“ was spread (Becht et al., 2005).

v) A result of the poorly implemented investor protection in **East Asia, Russia and Brazil** was a governance and privatization **crisis** in 1998. Change in Asia had to occur with respect to entrenched hierarchical structures controlled by large investors, while Russia had to resign its mass insider privatization and simultaneously reassess protection of small investors. Corporate Governance reforms in Russia, Asia, Brazil and other transitional economies have been a key issue for the OECD, the World Bank and institutional investor activists (Becht et al., 2005).

vi) A topic of recent Corporate Governance debate is the **series of scandals** occurring in the United States. Between 1990 and 2000 a great number of companies in the United States were subject to financial statement restatements (Becht et al., 2005). Statement of Financial Accounting Standards (FAS) 154 „Accounting Changes and Error Corrections“, paragraph 2 (j) defines a restatement as *„the process of revising previously issued financial statements to reflect the correction of an error in those financial statements“*. Furthermore, FAS 154 paragraph 2 (h) defines an error as *„an error in recognition, measurement, presentation, or disclosure in financial statements resulting from mathematical mistakes, mistakes in the application of GAAP, or oversight or misuse of facts that existed at the time the financial statements were prepared“* (for further information see Lamont and Skalak, 2007). While the average number of earnings restatements by U.S. companies during 1990-1997 was 49, the number of restatements increased to 91 in 1998 and reached 156 in 2000 (Moriarty and Livingston, 2001). During a typical restatement, firms lost approximatively 10 percent of their market capitalization over a 3-day window surrounding the date of the announcement. In total, market losses due to financial statement restatements amounted about U.S. \$100 billion over the period 1997-2002 (U.S. Government Accountability Office, 2002). Declines in stock prices occurred mostly because markets interpreted restatements as signals of fraud. Some examples of major corporate scandals in the U.S. in the late 1990s are the cases of Cendant, MicroStrategy and Sunbeam, who lost more than U.S. \$23 billion during the days surrounding their restatement announcements (Richardson et al., 2002). The agenda also comprises prominent companies like Enron, Adelphia and Tyco (Coates, 2007).

In the early 1990s, managerial compensation plans were mostly relying on cash payments. As a consequence, managers involved in earnings manipulation by holding back from the recognition of excess income and deferring its use towards future (less profitable) periods. In 1993, tax laws restricted the corporate deductibility of high cash compensation

(Coffee, 2004, 2005). Therefore, companies shifted more and more towards equity compensation schemes. This trend can be followed by looking at Figure 3, which depicts the evolution of compensation packages of CEOs between 1989 and 2008.

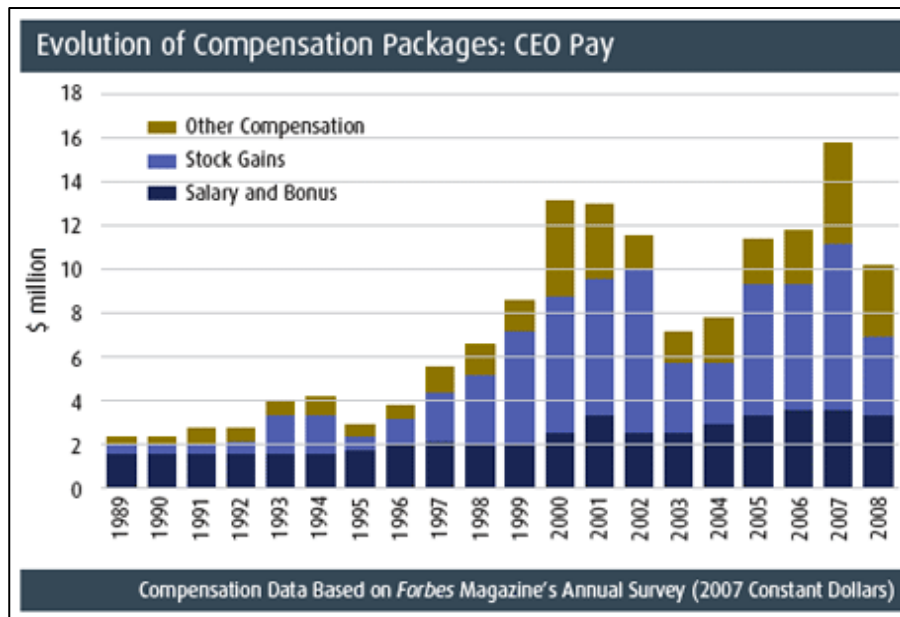


Figure 3: Evolution of compensation packages: CEO pay (in 2007 U.S. dollars), Diamond (2010)

Instead of aligning managerial and shareholder incentives for increasing firm value, equity-based payments generated the adverse effect, according to Coffee (2004, 2005). Motivated by the remuneration, which is closely and positively tied to the increase in sales, managers developed perverse incentives, which, in the absence of an efficient monitoring system, lowered firm value. As the shift from a cash-based system to an equity-based system occurred without any accompanying Corporate Governance device controlling for perverse incentives, managers were encouraged to manipulate short-term profits and perform fraudulent accounting maneuvers (Coffee, 2005). The Congress of the United States passed the Sarbanes-Oxley Act on July 15th, 2002, as a reaction to the wave of financial irregularities (Coffee, 2005). The aim of this legislation was to „fight theft by enlisting auditors to enforce new disclosure rules that strengthen the incentives for firms to increase spending on financial controls“ (Coates, 2007).

Even if equity-based payments have been a source for strong criticism in the late 1990s, mainly due to the lack of legal enforcement against fraudulent acts, many scholars consider managerial ownership „beneficial“ with respect to managerial incentives towards Shareholder Value maximization. Evidence on the effects of managerial ownership is diverse, and will be presented in the upcoming chapter.

4.5.2. Corporate Governance and firm performance – previous empirical research

Literature attests the importance of Corporate Governance by advocating its effects on firm value. One influential article in this field of research is, according to Bebchuk et al. (2008), the article written by Gompers et al. (2003), „Corporate Governance and Equity Prices“, which investigates the relationship between the quality of Corporate Governance and firm performance. Gompers et al. (2003) construct a „Governance Index“ („G-Index“) using a set of 24 governance rules allowed by the Investor Responsibility Research Center (IRRC). The index proxies for the balance of power between shareholders and managers and classifies different portfolios into five deciles. Portfolios in the lowest decile (with $G \leq 5$) are called „democracy portfolios“. They are considered more shareholder-protective than portfolios in the highest decile ($G \geq 14$), which are defined as „dictatorship portfolios“. In other words, democracy portfolios are characterized by low management power and strong shareholder rights, while dictatorship portfolios are proving the contrary. The G-Index is computed by adding one unit for every corporate charter provision which entrenches the management (Gompers et al., 2003). A detailed description of all 24 components is provided by Chapter 5.3.5. By running regressions for data on approximately 1,500 firms between 1990 and 1999, Gompers et al. (2003) find that the profitability of democracy portfolios, measured by Tobin's Q, as well as by stock returns, outweighs the performance of dictatorship portfolios by a statistically significant rate of 8.5 % per year. Tobin's Q is computed as the ratio of the market value of assets to the book value of assets, where the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock and deferred taxes (Gompers et al., 2003). The main finding of Gompers et al. (2003) is that firms with weaker shareholder rights are less profitable and have lower sales growth than other firms in their industry.

By relying on the findings of Gompers et al. (2003), Bebchuk et al. (2008) investigate the relative importance of the 24 provisions of the IRRC. They contest the expectation that each of the 24 provisions equally contributes to the documented relation between the G-Index and firm value. In investigating these effects, Bebchuk et al. (2008) construct an entrenchment index („E-Index“) based on six provisions which are perceived as being most important: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes and supermajority requirements for mergers and charter amendments. Their findings provide evidence that increases in the E-Index lead to significant reductions in firm valuation as

measured by Tobin's Q, as well as large negative abnormal stock returns during 1990-2003. Moreover, they confirm their hypothesis by showing that the other 18 IRRC provisions do not correlate with any of the firm performance measures considered in their study.

Morck, Shleifer and Vishny (1988) address the same entrenchment problem in an earlier paper. By using a dataset from 1980 comprising 371 of the Fortune 500 firms supplied by Corporate Data Exchange (CDE), they study the relationship between management ownership and Tobin's Q. The results suggest a positive relationship between CEO and board ownership and Tobin's Q for stakes between zero and five percent. Tobin's Q decreases for ownership stakes between 5% and 25%, but begins to rise slowly as ownership exceeds 25%. The main explanation is that increases in Tobin's Q which are triggered by increases in ownership reflect an alignment of interests between managers and shareholders. The decline in Tobin's Q due to higher ownership stakes is significantly correlated with entrenchment of the management team (voting power, control of the board of managers, status, etc.).

McConnell and Servaes (1990) rely on a similar premise and show that firm value is a function of the equity ownership structure. For a sample of 1,173 firms for 1976 and 1,093 firms for 1986 which were listed on either the New York Stock Exchange or the American Stock Exchange, results show that Tobin's Q rises for stock ownership up to 50%, and then slightly falls for higher ownership levels.

Stulz (1988) investigates the relationship between managerial control of voting rights and firm value and emphasizes the role of takeovers. He constructs a model where he assumes that takeovers always benefit shareholders, but may hurt managers. Findings show that if managerial preference for control (reflected by the amount of voting rights held by the management) is high, the probability of a takeover decreases. This high managerial control of voting rights increases firm value, as it forces acquirers to offer higher takeover premiums. The results of Stulz (1988) are similar with the evidence provided by McConnell and Servaes (1990) and show that firm value rises proportionally with management ownership only up to certain levels.

In their paper „Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure“, Jensen and Meckling (1976) support a similar view, by suggesting that higher levels of managerial ownership determine positive managerial incentives, which, in turn, lead to higher total welfare.

Conclusions on the relationship between managerial ownership, as a tool for aligning managerial and shareholder interests, and firm value are not unambiguous. This spurious relationship is proven by Himmelberg et al. (2000), who believe that managerial ownership and firm performance are endogenously determined by exogenous characteristics of a firm's

contractual environment. Their findings show that managerial ownership levels, which are determined by unobserved firm heterogeneity, do not affect firm performance. Berger et al. (1995) also show contradictory results: CEO direct stock ownership may increase incentives of management for enhancing firm value, but on the same time, may „insulate“ the management from disciplinary mechanisms. Simultaneously, low level of CEO option holdings can create managerial entrenchment, as the CEO is no longer interested in increasing performance (John and Litov, 2010). Heron et al. (2007) and Bergstresser and Philippon (2006) find that stock and option-based compensation often leads to earnings manipulation.

While the effects of managerial ownership on performance are open for further research, literature agrees upon the positive impact of shareholder protection on firm value (e.g. Gompers et al., 2003, Bebchuk et al., 2008, John and Litov, 2010). After having described the characteristics and relevance of the main explanatory variable, Corporate Governance, I will discuss about the main dependent variable of this thesis, which is capital structure.

5. Common determinants of capital structure in Corporate Governance research

5.1. Theories

The „parents“ of the modern theory of capital structure are Modigliani and Miller (1958). In their leading paper „The Cost of Capital, Corporation Finance and the Theory of Investment“, Modigliani and Miller (1958) set the path for future research by stating the conditions under which capital structure is irrelevant for a firm's market value. By following this path, economists have developed various theories of designing capital structure (Harris and Raviv, 1991). While some models of Kraus and Litzenberger (1973), Scott (1976), Miller (1977), Kim (1978), Deangelo and Masulis (1980) and Bradley et al. (1984) are based on tax considerations (static tradeoff theory), other models start with the premise of asymmetric information (pecking order theory). Some of the advocates of pecking order models are Ross (1977), Leland and Pyle (1977), Myers and Majluf (1984), and Myers (1984). A great number of studies (Marsh, 1982, Bradley et al., 1984, Long and Malitz, 1985, Kester, 1986 and Titman and Wessels, 1988) provide evidence on the relationship between various firm and industry characteristics and leverage. Also, many approaches of capital structure attempt to explain the agency conflicts arising among different groups of interests within firms (Jensen and Meckling, 1976, Grossman and Hart, 1982). Additionally, there are models of capital structure which take the effects of corporate control contests into consideration (Harris and Raviv, 1988). While the first two approaches (static tradeoff theory and pecking order theory) do not constitute the core point of interest of this thesis, I refer to the above mentioned research papers for a detailed description. The latter three models (referring to the relationship between firm characteristics and leverage, capital structure and agency costs, as well as capital structure and corporate control contests) have been of great interest among Corporate Governance research, therefore they will be considered in more detail in the next chapters.

5.2. Firm and industry characteristics

Research on the relation between specific characteristics of firms, industries and leverage agrees that leverage increases with asset tangibility (the ratio of fixed to total assets) and firm size (measured as the logarithmus of total assets). Similarly, leverage decreases with market-to-book ratio (used as a proxy for investment opportunities), volatility, advertising expenditures, R&D expenditures, probability of bankruptcy, profitability and

product uniqueness. These relations are supported by Rajan and Zingales (1995), Harris and Raviv (1991), Bradley et al (1984), Long and Malitz (1985), Kester (1986), Marsh (1982) and Titman and Wessels (1988).

The greater the proportion of tangible assets on the balance sheet, the higher is the ability to provide collateral, which diminishes lender's risk by reducing the agency costs of debt. Since lenders are more willing to supply debt capital, a large fraction of tangible assets should allow for higher leverage levels (Harris and Raviv, 1988). Berger and Udell (1994) show contradicting results for firms with close creditor relationships. In these cases, there is a less pronounced positive influence of asset tangibility on leverage. An example in this regard were Japanese firms in the mid 1970s, as the close relationships between firms and banks almost substituted for physical collateral. However, due to legal restrictions regarding creditor ownership in some countries, a generalization of this relationship seems inappropriate. Moreover, since the Japanese system of the 1970s evolved due to the extremely regulatory political environment during that time period (Hoshi et al., 1991), this particular case should not be subject to generalization.

By contrast to asset tangibility, the effects of firm size on leverage are not so clear. The risk of bankruptcy is low for large, diversified firms, which allows them to take on more debt. However, size may also be a proxy for better outsider information, hence inducing firms to prefer equity financing (Rajan and Zingales, 1995).

Since firms with a high market-to-book ratio may experience higher costs of financial distress, external debt financing may be more expensive. Therefore, Rajan and Zingales (1995) agree upon the negative relation between the presence of growth opportunities and leverage. Another explanation for this relation is that firms rely on stock issues when their share prices are high relative to earnings or book value (Rajan and Zingales, 1995).

Profitability, measured by the return on assets, is again a variable which leads to conflicting effects with respect to leverage. While Myers and Majluf (1984) support the theory that firms prefer internal financing over external debt financing, which explains a negative relation between profitability and leverage, Jensen and Meckling (1976) refer to the disciplinary effects of the corporate control market, which determines firms to lever up in order to maintain efficiency (Rajan and Zingales, 1995).

Leaning on the empirical methods of Rajan and Zingales (1995), Berger et al. (1995), Fama and French (2002), Baker and Wurgler (2002), Faulkender and Petersen (2006) and John and Litov (2010), the present paper refers to firm and industry characteristics as „standard control variables“. The most influential study for the present paper is given by

John and Litov (2010). In their research, John and Litov (2010) include a variety of controls generally agreed upon by literature as being determinants of leverage. Similarly with the results of related studies, John and Litov (2010) find that net debt issuance increases when (a) tangibility increases, (b) when profitability decreases, (c) when market-to-book decreases, and (d) when size increases. Following previous empirical work, the empirical part of this thesis includes tangibility, profitability, market-to-book ratio and size as control variables.

5.3. Corporate Governance and capital structure

5.3.1. General facts

Capital structure models developed by Modigliani and Miller (1958) are built on the simplifying assumption that managers always act in the interest of shareholders, while excluding the presence of agency conflicts. By relaxing this assumption, recent studies show that capital structure choices are a matter of managerial discretion.

Research done by Zwiebel (1996) shows that capital structure is a result of managers' decisions, who are often interested in their self-benefit. In one of his papers, Zwiebel (1996) states that „*agency theory models in which debt serves to constrain managers are among the most widely accepted explanations of capital structure*“. Zwiebel (1996) also suggests that the main determinant of capital structure is „*managerial optimality*“ rather than „*shareholder optimality*“. If managers are left the freedom of deciding over the capital structure, they will be able to cancel the capital structure imposed by an initial entrepreneur – they will adjust the capital structure in their own favour (Zwiebel, 1996).

Relying on this theory, managerial entrenchment turns out to be an important determinant of leverage. Therefore, Corporate Governance provisions, which serve as a proxy for managerial entrenchment according to Gompers et al. (2003), are expected to act as determinants of financing policy. Evidence on this relation is diverse. In this chapter, I will provide a description of some of the most relevant empirical studies of this field of research. Furthermore, I provide information on the underlying methodology. This will contribute to explain the research methods applied by this master thesis.

5.3.2. Corporate Governance as a determinant of capital structure

The research of Jensen and Meckling (1976) provides evidence that Corporate Governance reduces total agency costs. They state that a firm's leverage choice is an efficient Corporate Governance mechanism which mitigates the agency problems arising among its multiple constituencies, which are managers, shareholders and stakeholders. In a later paper, Jensen (1986) underlines the benefits of debt in motivating managers and their organizations towards efficiency. According to his theory, debt creation is profitable, as it commits managers to disgorge the „free“ cash flow, rather than using it for their own interest at the expense of value maximization. Debt causes retrenchment, a process by which companies are determined to operate towards their core competences (Jensen, 1986).

A similar approach belongs to Grossman and Hart (1982). Under the assumption that bankruptcy „safeness“ puts managers into an unconstrained position, where they have little incentives to profit-maximize, markets will assess the firm at a lower value and cost of capital will raise. According to Grossman and Hart (1982), issuing debt increases the probability of bankruptcy and forces managers to invest cash towards its best use.

Berger et al. (1995) rely on the same premises and state that managers will allow for optimal capital structures only when they are pressured to do so by „disciplining“ forces. The underlying Corporate Governance mechanism, the market for corporate control, and especially the level of leverage represent the most important „disciplining“ devices. By using a sample of 452 companies between 1984-1991 drawn from the Forbes magazine rankings of the 500 largest U.S. public corporations, Berger et al. (1995) construct an index („Berger Index“) consisting of five determinants of agency conflicts: CEO direct stock ownership (as a percent of common shares), CEO's holdings of stock options exercisable within 60 days (as a percent of common shares), CEO tenure, percent of independent directors on board and board size. An important finding of this paper is that debt is used more aggressively when incentives to increase share value are high, especially in the case of stock-based compensation (or high CEO stock ownership). According to Berger et al. (1995), debt increases as a result of externally induced CEO replacements. Conversely, leverage decreases when CEO tenure is high, showing that low debt levels are a signal of managerial entrenchment. Results underline the importance of debt in reducing agency conflicts, as well as the effectiveness of Corporate Governance in reducing agency costs. However, according to John and Litov (2010), the main drawback of this paper is endogeneity, as the measures Berger et al. (1995) used for managerial incentives are simultaneously determined with leverage.

Garvey and Hanka (1999) provide similar evidence and show that entrenchment is negatively related to leverage. Since their study relies mainly on takeovers, their paper will be discussed in more detail in the upcoming chapter.

Further evidence that leverage creates Shareholder Value is provided also by Harvey et al. (2004). The distinctive feature of this paper is that it focuses on firms with very high agency costs, i.e. where managerial cash flow and control rights are extremely separated. According to Harvey et al. (2004), such ownership structures are very popular in emerging markets. This is why the sample of the study consists of 1,132 publicly listed firms in 18 emerging markets. The results of Harvey et al. (2004) show that debt creates Shareholder Value for firms that face extreme agency costs.

Contrary to the view that agency costs and managerial inefficiency can be mitigated by leverage, recent studies support the theory that high debt levels are a signal of entrenchment. A strong influence on this thesis is provided by John and Litov (2010), who advocate for a positive relationship between managerial self-interest and leverage. With a sample consisting of 2,069 firms and 15,635 firm-year observations between 1990-2006, John and Litov (2010) provide a comprehensive analysis about how the quality of Corporate Governance determines the capital structure of the firm. Their theory relies on the assumption that the conservative investment policy of entrenched managers leads to better terms of access to credit markets, as well as to higher credit ratings. Their main regression uses three main measures of leverage (market leverage, book leverage and interest coverage) as alternative explaining variables. Their main explanatory variable is the G-Index, together with its main sub-indices: delaying hostile takeover bid, protection to officers and directors, shareholder voting rights, state laws and other defenses (Gompers et al., 2003). For robustness purposes, Gompers et al. (2003) alternatively plug in the E-Index of Bebchuk et al. (2008), as well as the Berger Index (Berger et al., 1995) as proxies for managerial entrenchment. John and Litov (2010) extend this earlier study of Berger et al. (1995) while controlling for endogeneity by using a two-stage least squares analysis. John and Litov argue that the G-Index (Gompers et al., 2003) clearly reflects the degree of shareholder protection, by contrast to the Berger Index (Berger et al., 1995), which may lead to contradictory interpretations. Similar to Garvey and Hanka (1999), John and Litov (2010) study the impact of Second Generation anti-takeover laws on leverage changes. Their results will also be described in more detail in the corresponding chapter on takeovers.

The results of John and Litov (2010) confirm the hypothesis that firms with weak shareholder rights use more debt financing. Simultaneously, more entrenchment leads to lower interest coverage, which confirms the robustness of the results. John and Litov (2010) find a positive

relationship between the G-Index and leverage and contrary to the results of Berger et al. (1995), between the Berger Index and leverage.

The findings of John and Litov (2010) are similar to the results of Cremers et al. (2004). In a study investigating the circumstances under which shareholder and debtholder interests converge, Cremers et al. (2004) show that a higher asset volatility determines lower bond yields. Their research relies on corporate bonds data from Lehman Brothers' Bind Database and comprises an average of 1,839 corporate bonds per year between 1990-1997. Information on bond covenants is procured from the Fixed Income Securities Database and the measures on Governance Mechanisms are constructed using a Thompson/CDA Spectrum dataset on institutional share holdings, as well as data from the Investor Research Responsibility Center during the years 1990, 1993 and 1995. Cremers et al. (2004) conclude the same as John and Litov (2010), namely, that Corporate Governance is related to capital structure. Similarities also emerge with respect to the effect of Corporate Governance on debt financing: since strengthening Corporate Governance does not automatically increase value of bondholders, one would expect low debt levels for firms with strong shareholder protection. However, the novelty of the findings of Cremers et al. (2004) is that bond covenants represent a method of „balancing“ the interests of equity holders and debt holders in the context of strong Corporate Governance.

Similarly to Cremers et al. (2004), Klock et al. (2004) show that the costs of debt financing are higher for firms featuring a high degree of shareholder protection, mainly due to the increased volatility of such firms. Their dataset consists of 1,877 firm-year observations on 678 firms from the years 1990, 1993, 1995, 1998 and 2000.

In a study about shareholder rights and their effects on bank loans, Chava et al. (2008) provide insights on the relationship between Corporate Governance measured by the G-Index of Gompers et al. (2003) and the cost of bank loans for publicly held firms. The paper analyzes 6,000 loans issued for different U.S. firms between 1990 and 2004 and shows that firms which provide a high degree of protection to shareholders are more likely to pay higher loan spreads than firms with high levels of managerial entrenchment. Chava et al. (2008) show that „democracy“ firms with low leverage incur higher costs of financing, especially due to their great exposure to corporate control contests. Thereby, it can be concluded that the exposure to takeovers, as well as the degree of shareholder protection are important determinants of capital structure. Chava et al. (2008) provide evidence which is similar to John and Litov (2010), by documenting a positive relationship between managerial entrenchment and leverage.

As it has been in this chapter, recent theories support the assumption that the amount of external debt financing is determined by a firm's degree of shareholder protection. In this area of research, John and Litov (2010) provide a unique analysis of the effects of managerial entrenchment on capital structure decisions. In contrast to other papers, John and Litov (2010) provide an in-depth investigation of the relationship between different measures of Corporate Governance and financing policy.

I construct my first Hypothesis based on the research done by John and Litov (2010) and assume that:

***Hypothesis 1.** Weak Corporate Governance structures (as expressed by the degree of managerial entrenchment) have a positive (and significant) influence on the amount of a company's external debt financing.*

Since literature in this regard is scarce, the empirical part of the present paper is aimed at analysing this relationship in a similar manner, however, by using a different dataset.

5.3.3. The market for corporate control as a determinant of capital structure

5.3.3.1. General issues

Agency costs are often triggered by „manager myopia“ - a term used for characterizing entrenched managements who avoid undertaking necessary structural changes, while focusing mainly on short-term value creation. Changes in technology and market conditions require retrenchment and therefore lead to disciplinary action in the form of takeovers (Jensen, 1988). In the process of restructuring, old managements are replaced by new managements who implement fresh ideas of increasing corporate value (Jensen, 1988). Fama and Jensen (1983) define corporate control as „the rights to determine the management of corporate resources – that is, the right to hire, fire and set the compensation for top-level managers“. In the market for corporate control there is continuous competition among management teams, in a struggle for rights to manage corporate resources (Jensen and Rubak, 1983).

The upcoming section focuses on anti-takeover provisions, which are some of the most important „tools“ for avoiding the market for corporate control. The introduction of anti-takeover laws, which will be discussed in the next sub-chapters, increases managerial entrenchment, as it protects the managers against the market for corporate control (Jensen, 1988, Garvey and Hanka, 1999 and John and Litov, 2010).

This discussion also represents the starting point in constructing the second Hypothesis of the present paper:

Hypothesis 2. *There is a significant positive relationship between the adoption of state anti-takeover laws – as a proxy for externally determined managerial entrenchment – and the levels of leverage chosen by corporations.*

Before addressing this issue empirically, I discuss some of the leading research papers which document significant effects of takeovers or anti-takeover laws on leverage.

5.3.3.2. Takeovers and leverage

Harris and Raviv (1988) are some of the pioneers of the theory that contests for corporate control are accompanied by changes in capital structure. Their paper documents that takeovers have a „disciplinary“ effect on management, in a sense that they determine managers to increase debt levels. Supporters of these theory are also Berger et al. (1995), who show that firms use debt more aggressively when faced with the threat of takeovers. According to their study, debt levels increase after unsuccessful tender offers.

Evidence that the threat of hostile takeovers motivates managers to issue debt, which they would otherwise avoid, is also offered by Garvey and Hanka (1999). By using a COMPUSTAT and CRSP dataset from 1990 consisting of 1,203 firms, Garvey and Hanka (1999) provide evidence that managers reduce leverage when they are protected from hostile takeovers. In other words, legal barriers to takeovers may increase managerial entrenchment. Meanwhile, anti-takeover laws act as substitutes for debt because they reduce the threat of hostile control changes. Therefore, Garvey and Hanka (1999) state that managerial entrenchment is strongly related with low leverage levels. However, according to their results, this relationship holds only when insider ownership is lower than 25%. Garvey and Hanka (1999) offer a similar evidence with Stulz (1988) when documenting that manager ownership levels above 25% provide immunity against hostile takeovers. Their paper concludes that high ownership stakes confer protection against hostile takeovers, even in the absence of anti-takeover legislation.

In spite of the fact that the greatest part of literature suggests a negative relationship between entrenchment (measured by the intensity of anti-takeover protection) and leverage, recent research documents the contrary.

One of the recent studies in this regard has been published by John and Litov (2010). In addition to the previously described analysis provided on managerial entrenchment as

measured by the G-Index, John and Litov (2010) investigate how the adoption of Second Generation anti-takeover laws („SGAT“, their detailed description is provided by the next chapter), as a proxy for externally induced managerial entrenchment, determines changes in leverage. They also perform this analysis in order to eliminate the assumption of causality, i.e. of a potential joint determination of managerial entrenchment and leverage. Following the data selection and methods of Garvey and Hanka (1999), John and Litov (2010) compare leverage levels between firms in states that passed SGAT before 1987 („anti-takeover“ states) and firms „pro-takeover“ states. Contrary to Garvey and Hanka (1999), who document a negative relation between anti-takeover legislation and leverage, John and Litov (2010) confirm the hypothesis that firms incorporated in states which adopted SGAT tend to increase the amount of debt in their financing. By showing that the exogenously induced level of managerial entrenchment significantly increases leverage, John and Litov (2010) successfully eliminate causality.

A similar theory is provided by Cremers et al. (2004). One of the findings of this study is that shareholder control and takeover exposure increase credit risk. As a consequence, firms which are more vulnerable to takeovers incur higher costs of debt, meaning that such companies rely less on debt financing. According to their results, it can be concluded that managerial entrenchment (as represented by low shareholder protection and strong anti-takeover provisions) decreases credit risk, by allowing companies to incur high levels of debt more easily. In their paper „Does Corporate Governance matter to Bondholders?“, Klock et al. (2004) obtain similar results and prove that strong anti-takeover provisions make debt more advantageous.

In order to insure a proper understanding of anti-takeover provisions as a Corporate Governance device, the following chapter provides a brief description of U.S. Second Generation anti-takeover laws and their institutional background.

5.3.3.3. A side note to U.S. anti-takeover legislation

As stated by Romano (1987), questioning the effects of takeovers is not simply a matter of corporate policy. The extent to which the states and the national government should regulate takeovers is an important topic of the present Corporate Governance debate.

In 1982, the ground U.S. federal rules for tender offers were legislated with the Williams Act which prohibited „*fraudulent, deceptive or manipulative acts or practices in connection with any tender offer*“ (Securities Exchange Act of 1934, University of Cincinnati College of Law (2012)). At the same time, several U.S. states had in place „First Generation“ anti-takeover laws. These laws were enacted through the lobbying actions of some well-represented local

companies and stretched the fundamental requirements of the Williams Act, while protecting managers from hostile takeovers (Garvey and Hanka, 1999, Macey, 1988).

The efforts of the U.S. Supreme Court in preempting state anti-takeover laws, especially in the case of *Edgar versus MITE Corp.* in 1982, were very soon repressed by new takeover legislation. The regulation within the MITE case included restrictions that went far beyond the requirements of the Williams Act and enabled a broad jurisdictional implementation, which was adopted by numerous federal U.S. states (Romano, 1987).

Even if the extensive legal manipulation by the states has encountered strong disagreement by multiple critics, the suggestion of creating a single, federal regulation has been forcefully opposed. Five years after the MITE case, the U.S. Supreme Court's decision in *Dynamics versus CTS* ruled that state anti-takeover laws were enforceable as long as they did not conflict with the Williams Act (Garvey and Hanka, 1999). Even though the new legislation was more shareholder-friendly, it allowed for an extensive legislative innovation in each state. These so-called „Second Generation“ anti-takeover laws were adopted by 21 U.S. states and took effect mostly between 1987 and 1989, but also after 1990 (Delaware and Pennsylvania). Second Generation anti-takeover laws generally took the form of „control share“ and „business combination“ provisions and imposed several restrictions on block shareholders while increasing the power of managements (Romano, 1987).

Besides the above cited provisions, anti-takeover provisions take a variety of forms. Chapter 5.3.5. of this thesis comprises, among other provisions, a description of each of the six most important state anti-takeover amendments: poison pill provisions, supermajority provisions, classified board provisions, fair-price provisions, cumulative voting provisions, and anti-greenmail provisions (Mahoney et al., 1997).

5.3.4. Conclusions

5.3.4.1. Corporate Governance and capital structure

While literature agrees upon the positive effects of Corporate Governance on firm performance, the impact of Corporate Governance on capital structure is not really straightforward. The results of extensive research in this field of study can be split into two main groups. The first group of scholars, e.g. Garvey and Hanka (1999), Berger et al. (1995), Jensen and Meckling (1976), Jensen (1986), Grossman and Hart (1982) and Harvey et al. (2004) advocate for a positive relationship between Corporate Governance and leverage. According to their studies, leverage diminishes agency conflicts and increases firm value by limiting managerial power. Therefore, it can be assumed that debt acts as a

disciplining device on entrenched managements. In other words, good Corporate Governance (i.e. low managerial entrenchment) is associated with higher levels of external debt financing. The second group of scholars, represented by John and Litov (2010), Chava et al. (2008), Klock et al. (2005) and Cremers et al. (2004) supports the opposite idea, that firms with entrenched managements possess higher levels of leverage. By assuming that the costs of debt financing are low with more conservative management policies, these scholars bring new insights into this area of research.

This thesis investigates the relation between managerial entrenchment and leverage assumed by the second group of scholars, leaning especially on the study of John and Litov (2010). The empirical part of the present paper provides detailed information in this regard.

5.3.4.2. Takeovers and their effects on leverage

As stated in the previous sub-chapters, takeovers are an efficient Corporate Governance mechanism. Economists generally agree upon takeovers being beneficial, not only for the shareholders of the firms being acquired, but also for society at large. Takeovers are a tool for providing discipline in the market for corporate control. Additionally, takeovers prevent firms from bankruptcy, since they act as low-cost substitutes for insolvency (Macey, 1988). In an article about anti-takeover statutes and their economical implications, Macey (1988) states that, through redeployment of under-utilized business divisions, takeovers „*cause assets to flow to their highest valuing uses*“. Macey (1988) quotes Jensen (1987), who noted that „*the restructuring of corporate America (...) that is being brought about by the takeover market is streamlining many of the largest and most complex corporations that are simply too large, too complicated and too unfocused to be efficient. Restructuring is bringing top level managements closer to employees, customers and shareholders. We must not strange these productive forces*“. Macey (1988) notes that, in spite of the generally accepted beneficial effect of takeovers, several public interest explanations have been developed in favor of state anti-takeover legislation. The problem of collective shareholder response, the goal of protecting local jobs, the prevention of the managerial focus on the short-term and the potential losses to acquiring firms are some examples in this regard. However, according to Macey (1988), the only true explanation for the adoption of state anti-takeover legislation is managerial self-interest.

By contrast to their negative impact on welfare, which is generally attested by literature, the effect of anti-takeover provisions on leverage is rather ambiguous. As discussed in Chapter 5.3.3.2., research done by Garvey and Hanka (1999), Berger et al. (1995) and Harris and Raviv (1988) supports a negative relation between anti-takeover legislation and

leverage. Results of recent studies published by Cremers et al. (2004), Klock et al. (2005), Chava et al. (2008) and John and Litov (2010) prove the contrary, by documenting higher levels of external debt financing for firms located in states which are protected against hostile takeovers. The empirical analysis of this thesis is aimed at completing these insights by analysing the effects of anti-takeover laws on capital structure decisions.

5.3.5. Side note: Corporate Governance provisions

Prior to an empirical analysis of the effects of Corporate Governance on capital structure, this chapter comprises a review of the 24 corporate charter provisions used for constructing the Governance Index of Gompers et al. (2003). As the G-Index represents the main Corporate Governance proxy of the present empirical study, I provide a brief description for each of its components. This documentation of the G-Index components relies on the publications of Gompers et al. (2003) and Rosenbaum (1990, 1993, 1995, 1998).

Anti-greenmail – Greenmailing is a practice in which a corporate raider acquires a large amount of shares from another company and agrees to sell his stock back at a substantial premium, while committing himself not to take over the company for a specific period of time. Anti-greenmail provisions forbid the payment of such bonuses without the approval of a given majority of shareholders. By discouraging such arrangements, Anti-greenmail provisions make bonuses more difficult to receive by closing one source of exit for the corporate raider, who might become stuck with ownership shares he/she does not want (Financial Dictionary, 2012). Seven federal states of the U.S. have (versions of) Anti-greenmail laws, which tend to be passed in conjunction with stronger anti-takeover laws. Moreover, Gompers et al. (2003) show that the presence of Anti-greenmail provisions in the corporate charter is positively correlated with 18 of the 21 firm-level provisions. A significantly positive correlation is given for eight of these provisions, and there is no evidence of any significantly negative correlation. As a consequence, Anti-greenmail provisions are perceived as takeover defenses and therefore count as a decrease in shareholder rights (Gompers et al., 2003).

Blank Check preferred stock is a charter provision which allows the board of directors to issue preferred stock without requiring shareholder approval. By drafting this provision, the board of directors is empowered to determine voting rights, stock conversion and other preferences, which allows for more board flexibility in meeting the needs of a specific

business purpose. For example, blank check preferred stock provides the board with the ability of placing preferred stock with friendly investors. The use of this provision is mainly aimed at implementing poison pills (see below) or takeover defenses. However, if the usage of blank check preferred stock as a takeover defense is accompanied by shareholder approval, this provision is not considered as a proxy for managerial entrenchment (Gompers et al., 2003, Law Catalog, 2012).

Business Combination laws are aimed at shielding companies from undesired takeovers. This type of laws imposes restrictions on transactions (such as asset sales or mergers) between a large shareholder and the firm without the approval of the Board of Directors. Such restrictions often take the form of a moratorium ranging between two and five years after the shareholder's stake has passed a prespecified (minority) threshold. While representing the only anti-takeover law of the state Delaware, business combination laws were enacted by 27 U.S. states by 1998 (Gompers et al., 2003, Basnage et al., 2006).

Bylaw and Charter amendment limitations constrain shareholder's ability to undertake charter or bylaw modifications. Such restrictions can take many forms, including requirements for the supermajority of shareholders to agree, classifying certain charter provisions as unamendable, or extending the ability of the board of directors to amend certain provisions beyond the state law and without shareholder approval. Meanwhile, charter amendment restrictions can constitute the component of an anti-takeover measure (Gompers et al., 2003, Financial Dictionary, 2012).

Control-share Cash-out laws enable shareholders of a target company to sell their shares to the controlling shareholder, at the expense of the latter, who has already purchased a certain percentage of the company's outstanding stock. Similarly to fair-price provisions (which will be discussed below), these laws protect companies from two-tiered takeover bids, by restricting the ability of an acquirer to purchase a large number of shares at a high price and then buy out the remaining shares at a lower price (Gompers et al., 2003, Mallele and Spagnola, 1994).

The default law in all states foresees that all directors can be replaced at each annual shareholder meeting, e.g. Delaware code title 8, § 211(b) (State of Delaware, 2012), Model Business Corporation Act § 8.03(c) (American Bar Association, 2005). However, this rule becomes exempt if the board is staggered (Bebchuk et al., 2002). With **Classified (or "staggered") boards**, directors are placed into classes (usually three), so only one part of

the board can be elected each year. Therefore, shareholders are not able to replace a majority of directors in any shareholder meeting. Moreover, when a board of directors is staggered, bidders seeking to gain control over the company would have to win votes during two consecutive shareholder meetings. Due to its slow replacement, a staggered board reduces the probability of takeovers, it increases corporate slack and is hence negatively correlated with firm valuation (Gompers et al., 2003, Bebchuk et al., 2010).

Compensation Plans with changes-in-control provisions determine the acceleration of incentive-plan based benefits (e.g. the payout of bonuses to executives) in the event of a change in control (Gompers et al., 2003).

Control-share Acquisition laws (see Supermajority, below).

Cumulative Voting is a provision which strengthens the ability of minority shareholders to elect a director. This provision provides shareholders the freedom to cast their total votes in any way they desire. The presence of cumulative voting and secret ballot (see below) is the only one coded as an increase in shareholder rights, while an additional decrease in shareholder rights occurs if these provisions are absent (Gompers et al., 2003, SEC, 2012).

Directors' Duties (also called Constituencies) allow directors to take into consideration constituencies other than shareholders during hostile takeover bids. This way, managers are protected from undesired takeovers, while they enjoy substantial legal protection in the event of a shareholder suit. While all U.S. states have Directors' Duties laws allowing similar expansions of constituencies, common components include: (1) the long and short-term interests of the corporation and its subsidiaries; (2) the interests of employees, creditors, customers, and suppliers; (3) community and societal considerations; (4) the economies of the nation and the state; (5) any other factor deemed relevant by a director including the possibility that these interests may be best served by the corporation's continued independence; and (6) the resources, intent, and conduct of the acquirer (Gompers et al., 2003, Mallette and Spagnola, 1994).

Director indemnification Contracts are aimed at „immunizing management from personal liability“ (Bishop, 1968). Such contracts protect officers from certain legal expenses and judgements emerging from lawsuits pertaining to their actions. „Indemnification“ can exist as

a bylaw or charter provision, but, at the same time, it can be used as an independent „contract“ (Gompers et al., 2003).

Fair-Price provisions are aimed at preventing takeovers by limiting the range of prices an acquirer may pay during two-tier bids. During a two-tiered takeover bid, the acquirer normally has the ability to purchase a large number of shares at a high price and then buy out the remaining shares at a lower price. With fair-price provisions, the bidder is required to pay to all shareholders the highest price paid during a specified period of time before the initiation of a tender offer. This way, target shareholders avoid the pressure of selling out their shares in the second stage of a two-tiered tender offer. Moreover, such provisions make takeovers more expensive. The effect of the fair-price provision ceases only when the board or a supermajority of shareholders agrees with the transaction (Gompers et al., 2003, Mallele and Spagnola, 1994).

Golden Parachutes are *„severance agreements that provide cash and non-cash compensation to senior executives upon an event such as termination, demotion, or resignation following a change in control“* (Gompers et al., 2003). Since takeovers are often accompanied by a replacement of the old management, such payments appear to discourage corporate control contests by increasing their costs (Focus Magazin, 2010). However, a part of literature argues that golden parachutes induce the opposite incentive for the target's managers to encourage eventual mergers in order to receive the benefits of their contractual compensation (Lambert and Larcker, 1985). Therefore, the direct impact of such provisions on managerial entrenchment is ambiguous. Meanwhile, their impact on Shareholder Value is clear, since the absence of golden parachutes allows potential controlling shareholders to fire the old management without incurring additional cost, and therefore allowing for takeovers to happen. As golden parachutes are also highly correlated with all the other takeover defenses, they are treated as a restriction of shareholder rights (Gompers et al., 2003).

Limitations on director Liability are charter amendments that eliminate or limit the personal liability of a director to a certain extent allowed by the specific state law. Such articles of incorporation may limit the liability of directors with respect to monetary damages due to the breach of their duty as directors, but not for acts or omissions which involve intentional misconduct or are known to the directors to be a violation of the law (Gompers et al., 2003, Kentucky Legislature Homepage, 2012 and Washington State Legislature, 2012).

Pension Parachutes are a form of poison pills, while they allow pension plan participants to benefit from excess pension plan assets in the event of a hostile takeover attempt. With this provision, the raider is prevented from using surplus cash in the pension fund of the target to finance an acquisition, since surplus funds remain the property of the pension fund and can be used for the benefit of the pension plan participants (Gompers et al., 2003, Financial Dictionary, 2012).

Poison Pills are activated by events, such as hostile takeover bids, which lead to changes in control of target corporations. They can be adopted by the board of directors without shareholder approval. Once triggered, poison pills provide the holders of the target's stock (other than the bidder) with special rights, such as the ability to buy stock in the target's company, in the bidder's company or in both at a substantial discount from market prices. The purpose of the poison pill is to make the target unattractive by diluting the acquirer's equity interest and voting power (Gompers et al., 2003, Mallette and Spagnola, 1994).

Secret Ballot (confidential voting), is a voting procedure involving an independent third party which is used to count proxy votes, under the agreement that management will not be made aware of how individual shareholders vote. Such confidential voting proposals help eliminate potential conflicts of interest or pressure between management and shareholders, who would feel constrained to vote if management were able to ascertain how they voted (this is mostly the case for shareholder-employees or shareholder-partners). The Cumulative Voting (see above) and Secret Ballot provisions are the only ones coded as an increase in shareholder rights, with an additional point to the Governance Index if one of the provisions is absent (Gompers et al., 2003, Romano, 2002).

Executive Severance agreements provide executives with an exception to the pay-for-performance compensation schemes. Such agreements are not contingent upon a change in control (unlike golden or silver parachutes), and may be contracted upon at the time of the CEO's appointment. Executive severance agreements are called by some „*rewards for failure*“ (Rusticus, 2006). Since they feature the payment of substantial sums of money after the CEO has been fired, executive severance agreements are mainly tied to moral hazard and poor performance (Gompers et al., 2003, Rusticus, 2006).

Silver Parachutes are a form of severance payments to the employees of a company in the event of a merger, acquisition, or other changes in corporate control. Similar to golden parachutes, which provide benefits for top executives, silver parachutes provide severance pay, stock options and bonuses for a large number of employees. Therefore, the promulgation of such provisions does not directly count as an increase in the G-Index (Gompers et al., 2003, Investopedia, 2012).

Special Meeting limitations include restrictions for shareholders regarding the manner of calling special meetings. They may either increase the ownership percentage necessary for the appointment of such meetings beyond that specified by the state law or even entirely exclude such shareholder proposals from a company's proxy statement. Especially in combination with limitations on actions by written consent, special meeting limitations lead to major delays in proxy fights, since bidders have to wait until the regular annual meeting in order to enforce their actions (Gompers et al., 2003).

When firms enact **Supermajority requirements for approval of mergers**, they establish voting thresholds for mergers (or similar transactions) exceeding the thresholds for such business combinations imposed by the state laws. Such supermajority rules require 66.7, 75, or 85 percent, which usually exceeds the participation quote at the annual meeting. Supermajority requirements are very similar to Control Share Acquisition laws, which request the approval of the majority of the (disinterested) outstanding shares before a large blockholder can exercise the voting rights associated with his/her acquired stock. In a nutshell, control share acquisition laws state that a simple share acquisition should not directly lead to a change in voting control (Gompers et al., 2003, Mallette and Spagnola, 1994).

Unequal Voting rights provide shareholders of existing stock with voting rights depending on certain conditions. This way, the voting rights among shareholders differ. A condition for receiving more voting rights is for example the period of time for which a shareholder has been holding his/her shares (also called „time-phased voting“). Meanwhile, extensions from this provision set restrictions on the voting rights of shareholders who have exceeded certain ownership thresholds. Just like a dual-class recapitalization plan (for more details in this regard see Sridharan, 1997), the unequal voting rights scheme is serving to protect incumbent's management control over the firm (Gompers et al., 2003, Sridharan, 1997).

Limitations on action by Written Consent are provisions which can set majority thresholds for taking action by written consent which exceed the levels provided by state law. As they can also take the form of unanimous consent, or even the exemption from the right to take action by written consent, such provisions lead to major delays in proxy fights, since bidders have to wait until the regular annual meeting in order to enforce their actions. Limitations on action by written consent are mostly powerful in combination with limitations for calling special meetings (see above) (Gompers et al., 2003).

6. Empirical analysis

6.1 Empirical methodology and data

6.1.1. Hypotheses and statistical methods

This empirical analysis investigates the effects of Corporate Governance on capital structure by relying on the theory discussed in the previous chapters. To recall, the Hypotheses of the present study assume that:

***Hypothesis 1.** Weak Corporate Governance structures (as expressed by the degree of managerial entrenchment) have a positive (and significant) influence on the amount of a company's external debt financing.*

***Hypothesis 2.** There is a significant positive relationship between the adoption of state anti-takeover laws – as a proxy for externally determined managerial entrenchment – and the levels of leverage chosen by corporations.*

By considering these assumptions, it becomes clear that Corporate Governance represents the central explanatory variable of the present study. Therefore, the choice of the dataset goes hand in hand with properly defining this variable. In the past chapters, I argued that efficient Corporate Governance mechanisms, which create Shareholder Value and align the incentives of managers and owners, encourage excessive risk-taking and might therefore be disadvantageous for debtholders. As a consequence, debtholders might provide better financing terms for less risky firms which are run by conservative (in this case, entrenched) managements, allowing for lower levels of shareholder protection. Based on this intuition, I follow John and Litov (2010) and investigate the effects of managerial entrenchment on the amount of a company's external debt financing. For this purpose, I use the G-Index compiled by Gompers et al. (2003) as a measure for managerial entrenchment. By relying on publications of the Investor Responsibility Research Center (IRRC), which provide detailed information about the Corporate Governance arrangements of individual firms, Gompers et al. (2003) compute the G-Index based on 24 anti-takeover, voting, compensation-related and state-law related corporate charter provisions which have been described in Chapter 5.3.5. By adding one point for each anti-takeover provision adopted in the corporate charter,

Gompers et al. (2003) provide one of the best available broad-sample indexes for the period 1990-2006, according to John and Litov (2010).

Each IRRC publication for this time period comprises information on between 1,400 and 1,800 firms, including S&P 500, as well as some of the largest corporations in the publications of Forbes, Fortune and Businessweek. Firms included in every IRRC publication account for approximately 90 percent of the total U.S. stock market capitalization (Gompers et al., 2003). However, since IRRC information is not provided on a yearly basis (Gompers et al., 2003), I follow Bebchuk et al. (2008) when assuming that the corporate charter provisions of a company - as reported in a given IRRC publication - remain in place at least until the subsequently issued IRRC volume. Therefore, I take the G-Index of the previous period in order to supplement the G-Index values for each of the missing years. According to Bebchuk et al. (2008), this method does not distort the results of empirical analysis.

For robustness reasons, I use the E-Index of Bebchuk et al. (2008) as an alternative entrenchment measure. Under the assumption that the 24 Corporate Governance provisions of the IRRC do not play an equal role in determining levels of entrenchment, Bebchuk et al. (2008) construct an entrenchment index („E-Index“) based on six corporate charter amendments, which were considered most important among the 24 provisions of Gompers et al. (2003). Thereby, the E-index increases by one for each one of the following provisions: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes and supermajority requirements for mergers and charter amendments (Bebchuk et al., 2008). Data on the E-Index is provided by Lucian Bebchuk (2012) for the same timeframe and for almost each firm covered by the G-Index.

For the same robustness reasons, the present study does not rely exclusively on ordinary least-squares (OLS) analysis. As I will explain in more detail in the following sub-chapters, the data used in this study are panel data. Panel data, or cross-sectional times-series data, contain repeated measures of the same individuals over time (Kohler and Kreuter, 2009). According to Kohler and Kreuter (2009), panel data observations are more likely to be intercorrelated than observations from different entities. Since OLS regressions for such data structures may violate the assumption that all observations are uncorrelated with each other (Kohler and Kreuter, 2009), I supplement my analysis by running panel regressions in order to test the two Hypotheses.

Furthermore, a 2 SLS analysis is applied in order to test for endogeneity. Since the relation between Corporate Governance and leverage is often subject to endogeneity issues, I follow

John and Litov (2010) in performing this analysis. The methods and results of endogeneity tests will be described in more detail in chapter 6.2.3.

Additionally, I address the causality issue by investigating the effects of exogenous Corporate Governance changes, represented by state anti-takeover legislation, on capital structure choices. In this regard, I rely on the studies of Garvey and Hanka (1999) and John and Litov (2010). Under the premise that the adoption of anti-takeover laws increases managerial preferences for debt financing, I use the Anti-takeover Index developed by Bebchuk and Cohen (2003) as a proxy for exogenous variation in Corporate Governance. Bebchuk and Cohen (2003) compute their Anti-takeover Index by using five anti-takeover statutes which were adopted by a majority of U.S. states. According to Bebchuk and Cohen (2003), the most „popular“ anti-takeover statutes are: Control Share Acquisition Statutes, Fair Price Statutes, Business Combination Statutes, Poison Pill Endorsement Statutes and Constituencies Statutes. The Anti-takeover Index takes values between 0 and 5, according to the number of standard anti-takeover laws adopted by the respective state. Lucian Bebchuk (2012) provides the yearly Anti-takeover Index and its components for all U.S. states and the District of Columbia between 1986 and 2001.

In addition to testing different entrenchment proxies, I follow John and Litov (2010) and investigate the robustness of my results by using different measures of leverage: book leverage, market leverage and interest coverage, as well as their mean values by SIC industry codes. Prior to a description of the main regression results, the present chapter provides a description of the underlying dataset, followed by summary statistics.

6.1.2. Compustat and CRSP data

In order to provide a complete sample comprising all three previously described Corporate Governance indexes, I perform my analysis for the timeframe 1990-2000. My survey comprises a set of firms from IRRC G-Index data and Lucian Bebchuk's (2012) E-Index data. Data on these firms are also covered by data from the CRSP/Compustat merged industrial annual database. By merging these data sources, I obtain a sample consisting of 1,212 firms included in an unbalanced panel over the survey years 1990-2000. I use STATA 11.0 for performing all empirical analyses of this thesis.

Following John and Litov (2010), I exclude from the sample financing firms (SIC codes 6,000 - 6,999), as well as firms in regulated industries (SIC codes 4,800 – 4,999). Since most STATA commands deal with missing values by disregarding incomplete observations (STATA, 2012), I do not remove any missing data. I further exclude firms with

book leverage greater than one and interest coverage smaller than zero as well as outliers, as these values might distort the results. Removing outliers is achieved by winsorizing the extreme left and right-tail values at a 2 % level, except for book equity and book debt (John and Litov, 2010). Interest Coverage values above zero are winsorized at the 5 % level. The G and E-Index, as well as the Anti-takeover Index are also excluded from winsorizing, as these are categorical variables which do not have outliers. After imposing these filters, I obtain a sample of 806 firms corresponding to 4,348 firm-year observations. Table 1 summarizes all variables compiled for the present analysis, as well as their methods of calculation.

Table 1
Variable definitions (John and Litov, 2010)

Variable Name	Definition
<i>Main independent variables</i>	
G entrenchment Index	Entrenchment Index developed by Gompers et al. (2003) which counts the presence of 24 anti-takeover, voting, compensation-related and state-law related corporate charter provisions. Data on the G-Index is provided by the IRRG.
E entrenchment Index	Entrenchment Index developed by Bebchuk et al. (2008) based on the six - considered most relevant - corporate governance provisions of the G-Index: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes and supermajority requirements for mergers and charter amendments. Data on the E-Index is provided by Lucian Bebchuk (2012).
Democracy dummy	Dummy variable that takes the value of one if $G \leq 5$, and zero otherwise. In the case of the E-Index, the Democracy dummy takes the value of one if $E \leq 3$.
Dictatorship dummy	Dummy variable that takes the value of one if $G > 5$, and zero otherwise. In this regard, I use an approach which is different from Gompers et al. (2003) and from John and Litov (2010), who classify firms with $G \geq 14$ as Dictatorship portfolios. As the G-Index values of the present dataset do not exceed the value of 16 and because many values of G in this dataset lay between 5 and 14, a lot of information would be excluded by following a similar approach with Gompers et al. (2003) and John and Litov (2010). In the case of the E-Index, the Democracy dummy takes the value of one if $E > 3$.
Anti-takeover Index	Entrenchment Index developed by Bebchuk and Cohen (2003) computed by the five most commonly adopted state anti-takeover laws: Control Share Acquisition Statute, Fair Price Statute, Business Combination Statute, Poison Pill Endorsement Statute and Constituencies Statute. The index increases by one for each law adopted by the state of incorporation. Data on the Anti-takeover Index is provided by Lucian Bebchuk (2012).
Pro-takeover dummy	Dummy variable that takes the value of one if the Anti-takeover Index = 0, and zero otherwise.
Anti-takeover dummy	Dummy variable that takes the value of one if the Anti-takeover Index = [1,5], and zero otherwise.
<i>Control variables</i>	
Market-to-book	Market value of assets divided by the book value of assets, where the market value of assets is computed as: book value of assets + total shares outstanding * share price (market value of common stock) - book value of common stock - deferred taxes (all components as at the end of the current fiscal year).
Asset tangibility	Net property, plant and equipment to total assets of the current fiscal year.
Profitability	EBITDA divided by total assets of the current fiscal year.
Firm size	Logarithm of total assets as of the end of the current fiscal year.
<i>Main dependent variables</i>	
Book Leverage	Book debt divided by total assets at the end of the current fiscal year. Book debt is computed as total assets - book equity (both values as at the end of the fiscal year). Book equity is defined as total assets - total liabilities - preferred stock + deferred taxes + convertible debt (all values as at the end of the current fiscal year).
Mean Book Leverage	Average value of Book Leverage by industry (SIC code).
Market Leverage	Book debt divided by: total assets - book equity + total shares outstanding * share price.
Mean Market Leverage	Average value of Market Leverage by industry (SIC code).
Net change in leverage	$\Delta L_t = (D_t - 1 + \text{net debt issues}) / (A_t - 1 + \text{net debt issues} + \text{net equity issues}) - D_{t-1} / A_{t-1}$ where: D_t = book debt at the end of the current fiscal year A_t = total assets at the end of the current fiscal year Net equity issues = (sale of common & preferred stock - purchase of common & preferred stock) / total assets Net debt issues = (long-term debt issuance - long term debt reduction) / total assets
Interest Coverage	Operating earnings before depreciation divided by interest expense. Negative interest coverage is coded as 0 and winsorized at the 5%-level.
Mean Interest Coverage	Average value of Interest Coverage by industry (SIC code).

Table 1: Variable definitions (John and Litov, 2010)

6.1.2. Summary statistics

In order to provide a basis for the linear relations which will be discussed in the upcoming chapters, I compute pairwise correlations between the main variables used by this analysis. Correlations marked by one star document a 10 % level of significance, two stars represent a 5 % level of significance and three stars account for a 1 % level of significance. I keep this notation throughout all outputs of this empirical study.

Table 2 Part I. Correlations between the main variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Book Leverage (1)	1						
Market Leverage (2)	0.7566***	1					
Interest Coverage (3)	-0.5256***	-0.5382***	1				
Mean Book Leverage (4)	0.661***	0.5476***	-0.3628***	1			
Mean Market Leverage (5)	0.5179***	0.6988***	-0.3751***	0.784***	1		
Mean Interest Coverage (6)	-0.4185***	-0.4582***	0.5615***	-0.6333***	-0.6555***	1	
G (7)	0.1995***	0.1572***	-0.1623***	0.1778***	0.1508***	-0.2093***	1
E (8)	0.1556***	0.1653***	-0.152***	0.1429***	0.1538***	-0.1885***	0.7481***
Anti-takeover Index (9)	-0.0108	-0.0053	-0.0292*	0.0398***	0.0204	-0.0177	0.1331***
Pro-takeover dummy (10)	-0.106***	-0.0674***	0.0714***	-0.124***	-0.0567***	0.0369***	-0.1671***
Market-to-book ratio (11)	-0.3048***	-0.6511***	0.4686***	-0.2569***	-0.4932***	0.3709***	-0.1377***
Tangibility (12)	-0.0089	0.089***	-0.1062***	0.024	0.1509***	-0.2081***	0.0368***
Profitability (13)	-0.2655***	-0.5803***	0.4475***	-0.2054***	-0.4137***	0.2675***	-0.0704***
Size (14)	0.4119***	0.2092***	-0.2127***	0.337***	0.1912***	-0.245***	0.1968***

* p<0.10, ** p<0.05, *** p<0.01

Table 2 Part II. Correlations between the main variables

	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Book Leverage (1)							
Market Leverage (2)							
Interest Coverage (3)							
Mean Book Leverage (4)							
Mean Market Leverage (5)							
Mean Interest Coverage (6)							
G (7)							
E (8)	1						
Anti-takeover Index (9)	0.1396***	1					
Pro-takeover dummy (10)	-0.1037***	-0.2046***	1				
Market-to-book ratio (11)	-0.1802***	-0.0466***	0.0311***	1			
Tangibility (12)	0.0708***	-0.0277**	0.0058	-0.1974***	1		
Profitability (13)	-0.0745***	-0.0002	0.0559***	0.5998***	0.0431***	1	
Size (14)	0.0666***	0.0287**	-0.0838***	0.0238	0.1652***	-0.0108	1

* p<0.10, ** p<0.05, *** p<0.01

Table 2: Correlations between the main variables

Table 2 shows significant positive correlations between book and market leverage, as well as their mean measures. Similarly, interest coverage is significantly positively correlated with mean interest coverage. Book leverage, as well as market leverage and their mean measures correlate negatively with interest coverage and its mean measure, at a 1 % level of significance. These correlations show that all measures of leverage are interrelated, meaning that book leverage, market leverage and interest coverage can be used as alternative proxies when measuring the amount of a company's level of external debt financing. Additionally, these findings show that interest coverage is an „inverse“ measure of leverage. As previously depicted in Table 1, interest coverage is computed by dividing the operating earnings before depreciation by the amount of interest payments.

Results in Table 2 further present a positive, significant correlation between the G-Index and book leverage, mean book leverage, market leverage and mean market leverage. Similarly, G is negatively and significantly correlated with interest coverage and its mean measure. Therefore, findings show that managerial entrenchment is significantly positively correlated with leverage. Results hold for entrenchment, as measured by the E-Index. E is positively correlated with book leverage, market leverage and their mean values. Meanwhile, the E-Index is negatively correlated with (mean) interest coverage at a 1 % significance level, supporting the assumption that a low level of shareholder protection is correlated with higher amounts of external debt financing. There is a strong, positive correlation between E and G, showing that these two variables represent good alternative measures for managerial entrenchment. As the E-Index is derived from the G-Index (Bebchuk et al., 2008), this is not a surprising result.

There is a low, insignificant correlation between the Anti-takeover Index and book leverage, as well as market leverage. The Anti-takeover Index correlates positively with mean book leverage (at a 1 % level of significance) and with mean market leverage. Between the Anti-takeover Index and interest coverage there is a very low, negative correlation. As the Anti-takeover Index is positively correlated with E, I conclude that the Anti-takeover Index serves as an alternative entrenchment proxy.

Between the Pro-takeover dummy (which takes the value of one when the Anti-takeover Index is zero, and zero otherwise) and (mean) book leverage there is a significant, negative correlation. This also applies for market leverage and its mean measure at a lower, but significant level. Accordingly, there is a positive, significant (however, low) correlation between the Pro-takeover dummy and (mean) interest coverage. These results show that the adoption of state anti-takeover legislation, proxied by a Pro-takeover dummy of zero, is loosely correlated with leverage. The Pro-takeover dummy is negatively correlated

with G, E, and with the Anti-takeover Index, confirming the fact that the Pro-takeover dummy is computed as an „inverse“ measure of managerial entrenchment.

The market-to-book ratio is negatively correlated with market and book leverage and positively correlated with interest coverage, showing that firms with high investment opportunities rely more on internal financing. These correlations are significant and hold also for all mean measures of leverage and interest coverage. As the market-to-book ratio is negatively correlated with G, E and the Anti-takeover Index and positively correlated with the Pro-takeover Index (all significant at a 1 % level), results show that managerial entrenchment is negatively correlated with firm values and lower investment opportunities. Profitability exhibits similar correlation coefficients, except for the Anti-takeover Index, for which there is no significant correlation. Results are in line with theory and show that a high profitability is correlated with lower leverage, as well as with lower managerial entrenchment.

The correlations between tangibility and the measures of leverage are rather ambiguous. Tangibility is negatively correlated with book leverage and positively correlated with mean book leverage, which is very intriguing. However, these coefficients are very low and not significant. There is a positive and significant correlation between tangibility and market leverage, as well as mean market leverage. Similarly, tangibility is significantly negatively correlated with interest coverage and its mean measure, showing that firms with tangible assets manifest higher levels of leverage, as they have the ability to provide collateral. Tangibility features positive, but low correlations with G, E and the Pro-takeover dummy. Meanwhile, the correlation between tangibility and the Anti-takeover Index is negative. Therefore, there is no clear correlation between managerial entrenchment and tangibility.

Size is positively and significantly correlated with book leverage, mean book leverage, market leverage and mean market leverage, showing that large firms are more likely to appeal to external debt financing. This result is also provided by (mean) interest coverage, which is significantly negatively correlated with size. G, E and the Anti-Takeover Index feature significant, positive correlations with firm size. The Pro-takeover dummy is negatively correlated with size, but at a lower level. Results show that managerial entrenchment is positively correlated with firm size. This chapter further investigates these findings by providing summary statistics.

Summary statistics with respect to the G-Index (Table 3) are in line with the results provided by pairwise correlations and show that leverage levels increase monotonically with managerial entrenchment represented by the five quintiles of the G-Index.

Table 3 Summary Statistics Managerial Entrenchment (G-Index), Leverage and Firm Characteristics									
Variables	G index					Democracy Dictatorship		t-test	
	1st Quintile G ≤ 6	2nd Quintile G = {7,8}	3rd Quintile G = {9,10}	4th Quintile G = {11,12}	5th Quintile G ≥ 13	G ≤ 5	G > 5	t	df
Book Leverage	42.86%	43.71%	49.58%	50.96%	53.87%	43.03%	48.79%	6.0424***	4346
Market Leverage	28.52%	30.85%	33.34%	35.09%	39.13%	30.60%	33.57%	2.9228***	4322
Interest Coverage	14.56	13.11	11.66	9.47	5.89	14.26	10.64	-4.0236***	4044
Profitability	0.177	0.163	0.17	0.169	0.152	0.172	0.167	-1.3953	4325
Market-to-book ratio	2.27	1.96	1.97	1.86	1.59	2.14	1.91	-3.3971***	4322
Firm Size (US \$ mil.)	3,034.93	2,386.59	3,351.23	4,363.25	3,061.04	3,013.79	3,317.52	4.9629***	4346
* p<0.10, ** p<0.05, *** p<0.01									

Table 3: Summary statistics - managerial entrenchment (G-Index), leverage and firm characteristics

While book leverage for firms in the lowest quintile ($G \leq 6$) averages 42.86 %, book leverage in the highest quintile ($G \geq 13$) reaches almost 54 %. Similarly, average market leverage levels increase by 10.61 basis points among the five deciles of G. Interest coverage decreases monotonically with G, supporting the assumption that highly entrenched managers prefer debt over equity financing. Table 3 further reveals that managerial entrenchment tends to be rather high for less profitable companies. Even if this distribution is non-monotonical, preliminary results are consistent with the findings of Gompers et al. (2003), Bebcuk et al. (2008) and Morck, Shleifer and Vishny (1988).

Summary statistics in Table 3 are in line with the previously described findings with respect to investment and growth opportunities, as proxied by the market-to-book ratio. The market-to-book ratio averages 2.27 for shareholder-protective firms in the first quintile of G and decreases to an average of 1.59 for manager-protective firms in the 5th quintile, supporting the assumption that firms in dictatorship portfolios feature lower market values than firms in democracy portfolios. The pattern of firm size is rather ambiguous and the level of managerial entrenchment is not clearly tied to firm size. Findings match the theories of Rajan and Zingales (1995), which have been documented in Chapter 5.2. of this paper.

Table 3 documents the same effects as presented before by the correlations between firm characteristics and leverage. Highly profitable firms are less indebted than firms with lower profitability. Results match the theory of Myers and Majluf (1984) and are in line with the findings of John and Litov (2010), by showing that profitable firms prefer internal over

external debt financing. According to Table 3, companies with high market-to-book ratios feature lower levels of leverage. These findings match the theory of Rajan and Zingales (1995), who state that firms with high growth opportunities are more exposed to financial distress, and therefore feature an aversion towards debt financing. Moreover, as their share prices are high relative to earnings or book value, firms with high market-to-book ratios mostly rely on stock issues (Rajan and Zingales, 1995). Table 3 provides ambiguous results with respect to firm size and leverage. As stated in Chapter 5.2, literature documents similar, contradictory results, by showing that large, diversified firms have a lower risk of bankruptcy, which allows them to incur high amounts of debt. Meanwhile, as size may be a signal for better outsider information, large firms might prefer equity financing (Rajan and Zingales, 1995). While summary statistics are not able to provide the most reliable estimates, a more accurate description of this relation will be provided in the regression outputs.

T-tests investigate the explanatory power of the previously described results with respect to entrenchment, leverage and firm characteristics by comparing the means of the two main „entrenchment“ groups (democracy portfolios with $G \leq 5$ and dictatorship portfolios with $G > 5$). T-tests significantly reject the equality of means between democracy and dictatorship portfolios with respect to book leverage, market leverage, interest coverage, market-to-book ratio and size. Profitability is the only variable which does not significantly differ between the two main groups, according to the t-test. However, its coefficient is still negative, which confirms the previously described results. The t-test provides a clearer picture with respect to firm size, showing that companies in dictatorship portfolios are significantly larger than shareholder-protective firms in democracy portfolios.

Summary statistics with respect to the E-Index are presented in Table 4 and do not differ substantially from the previously described results.

Table 4 Summary Statistics Managerial Entrenchment (E-Index), Leverage and Firm Characteristics											
Variables	E-Index							Democracy Dictatorship		t-test	
	0	1	2	3	4	5	6	E ≤ 3	E > 3	t	df
Book Leverage	43.83%	45.23%	47.09%	49.24%	52.76%	51.32%	70.82%	46.97%	52.99%	8.3253***	4346
Market Leverage	28.82%	29.53%	31.88%	35.02%	37.42%	38.79%	57.99%	32.02%	38.20%	8.0422***	4322
Interest Coverage	14.7	14.35	11.79	9.64	7.76	6.00	4.75	11.94	7.39	-6.9918***	4044
Profitability	0.18	0.174	0.164	0.163	0.166	0.159	0.13	0.17	0.16	-1.6646*	4325
Market-to-book ratio	2.4	2.18	1.97	1.77	1.72	1.47	1.19	2.01	1.66	-6.7364***	4322
Firm Size (US \$ mil.)	4091.7	3197.3	3939.7	2909.2	2740.7	2151.4	3323.7	3,444.43	2,654.78	4.1367***	4346
* p<0.10, ** p<0.05, *** p<0.01											

Table 4: Summary statistics - managerial entrenchment (E-Index), leverage and firm characteristics

This is not very surprising, because, as stated earlier in this thesis, the E-Index is constructed upon the six most relevant provisions of the G-Index. The reason for which I investigate the effects of the E-Index on leverage is to insure robustness. As depicted by Table 4, book leverage and market leverage increase monotonically with E, while the opposite relation is supported by interest coverage. This assumption is also supported by the t-test, which shows that democracy firms feature significantly lower levels of external debt financing than dictatorship firms. Overall, results show that firms with entrenched managements have lower values than shareholder-protective companies, which represents an additional argument when supporting the validity of the previously discussed Shareholder Value approach. In the case of the E-Index, this distribution is furthermore sustained by a significant t-test result.

Like in the case of G, summary statistics do not return a clear pattern with respect to firm size, which in this case is higher for firms in democracy portfolios. Most surprisingly, t-test statistics document that firms in Democracy portfolios are larger than firms in Dictatorship portfolios, as measured by the logarithmus of assets. Therefore, no statement can be made with respect to the relation between size and managerial entrenchment.

Results in Table 4 are similar to results in Table 3 with respect to firm characteristics and leverage and show that the amount of external debt financing decreases with market-to-book ratio and profitability. The findings in Table 4 do not document a clear trend with respect to firm size and leverage.

Summary statistics provide a good representation of the data used in the present study. However, this thesis is aimed at predicting the *relationship* between measures of leverage and Corporate Governance (Kohler and Kreuter, 2009). The upcoming chapters present the statistical techniques and their estimates with respect to this relationship.

6.2. Empirical results

6.2.1. OLS regressions: Corporate Governance and leverage

The first Hypothesis assumes, as earlier stated, that weak Corporate Governance, proxied by the degree of managerial entrenchment, has a significantly positive influence on the amount of a company's external debt financing. In a first step, I test this Hypothesis by running an OLS multivariate regression.

Following John and Litov (2010), I construct the following models:

$$L_{i,t} = \beta_0 + \beta_1 G_{i,t-1} + \beta_2 \text{Control variables}_{i,t-1} + \varepsilon_{i,t}, (1)$$

$$L_{i,t} = \beta'_0 + \beta'_1 E_{i,t-1} + \beta'_2 \text{Control variables}_{i,t-1} + \varepsilon'_{i,t}, (2)$$

where i indexes firms and t indexes years. The models (1) and (2) expresses leverage levels of a given year, $L_{i,t}$ as a function of the entrenchment levels of the previous year, proxied by $G_{i,t-1}$ and $E_{i,t-1}$, while controlling for firm characteristics like tangibility, profitability, market-to-book ratio and size of the previous fiscal year. In the above equations, these measures are denoted as *Control variables* _{$i,t-1$} (John and Litov, 2010 and Rajan and Zingales, 1995). $L_{i,t}$ stands for all measures of leverage: book leverage, market leverage and interest coverage, as well as their mean values by SIC industry codes, which are used for robustness purposes. In order to adjust for heteroskedasticity, I use the „robust“ form of the OLS-regression. Table 5 presents OLS estimates for the first model.

Table 5 OLS Regressions: Levels of Leverage depending on the G-Index						
Independent variables	Book Leverage	Market Leverage	Interest Coverage	Book Leverage	Market Leverage	Interest Coverage
				mean	mean	mean
G Index t-1	0.00516*** (5.59)	0.00365*** (3.99)	-0.358*** (-4.24)	0.00328*** (5.26)	0.00275*** (4.14)	-0.400*** (-7.42)
MB Ratio t-1	-0.0262*** (-8.82)	-0.0468*** (-16.23)	3.533*** (9.22)	-0.0173*** (-9.01)	-0.0300*** (-15.77)	1.603*** (8.47)
Tangibility t-1	-0.0930*** (-6.80)	-0.00296 (-0.21)	-2.489** (-1.99)	-0.0361*** (-4.01)	0.0405*** (4.13)	-5.195*** (-7.27)
Profitability t-1	-0.362*** (-6.68)	-0.822*** (-16.28)	44.41*** (7.56)	-0.146*** (-4.31)	-0.396*** (-11.64)	16.45*** (5.67)
Size t-1	0.0514*** (27.36)	0.0284*** (15.27)	-2.530*** (-13.57)	0.0271*** (19.99)	0.0151*** (10.68)	-1.401*** (-12.54)
_cons	0.209*** (12.43)	0.324*** (19.02)	19.56*** (11.62)	0.327*** (28.82)	0.309*** (25.36)	21.42*** (20.29)
Observations	4283	4267	3986	4283	4282	4281
Model F-statistic	264.5	382.1	121.1	147.9	231.5	118.8
p-value	0.00	0.00	0.00	0.00	0.00	0.00
R-squared stat	0.232	0.331	0.205	0.157	0.232	0.164
t statistics in parentheses						
* p<0.10, ** p<0.05, *** p<0.01						

Table 5: OLS regressions - levels of leverage depending on the G-Index

The f-test shows that there is at least one beta coefficient which differs significantly from zero, as all its p values are smaller than 5 %. According to t-statistics, which are displayed in parentheses, all independent variables excepting tangibility have significant effects on all measures of leverage. The high significance of estimates might be somehow puzzling, but the reason for these results will be explained later on in this section. According to Table 5, the adoption of an additional charter provision which entrenches the incumbent management (i.e. an increase of one in the G entrenchment Index) increases book leverage by 0.00516 and market leverage by 0.00365 at a 1 % level of significance. The same change in managerial entrenchment decreases interest coverage by -0.358 and is significant at a 1 % level. Results are robust for all mean measures of leverage.

The effects of three of four control variables are consistent with theory: a marginal increase in profitability, as well as a marginally higher market-to-book ratio lead to a decrease in a firm's amount of external debt financing. Size has a significant, positive effect on leverage, confirming that large, diversified firms „afford“ higher levels of external debt financing. The only firm characteristic with ambiguous effects on leverage is asset tangibility. Its impact on (mean) book leverage and (mean) market leverage is inconsistent with the main assumptions of theory, which assume a positive relation between debt financing and asset tangibility, mainly due to the ability of firms with highly tangible assets to provide collateral. However, tangibility has significantly negative effects on (mean) interest coverage, confirming the theoretical assumptions in Chapter 5.2.

Table 6 illustrates the OLS estimates for the model by using the E-Index as a proxy for managerial entrenchment.

Table 6 OLS Regressions: Levels of Leverage depending on the E-Index						
Independent variables	Book Leverage	Market Leverage	Interest Coverage	Book Leverage mean	Market Leverage mean	Interest Coverage mean
E-Index $t-1$	0.0108*** (5.43)	0.00779*** (3.97)	-0.603*** (-3.40)	0.00560*** (4.20)	0.00448*** (3.13)	-0.665*** (-5.56)
MB Ratio $t-1$	-0.0258*** (-8.67)	-0.0465*** (-16.13)	3.532*** (9.21)	-0.0173*** (-8.97)	-0.0300*** (-15.91)	1.607*** (8.52)
Tangibility $t-1$	-0.0965*** (-7.03)	-0.0055 (-0.40)	-2.211* (-1.75)	-0.0382*** (-4.24)	0.0387*** (3.97)	-4.936*** (-6.92)
Profitability $t-1$	-0.366*** (-6.76)	-0.825*** (-16.34)	44.38*** (7.56)	-0.148*** (-4.32)	-0.397*** (-11.67)	16.58*** (5.72)
Size $t-1$	0.0529*** (28.72)	0.0294*** (16.06)	-2.639*** (-14.27)	0.0281*** (21.25)	0.0159*** (11.52)	-1.525*** (-13.83)
_cons	0.223*** (14.10)	0.334*** (20.88)	18.28*** (11.64)	0.339*** (31.58)	0.319*** (27.81)	19.98*** (20.07)
Observations	4283	4267	3986	4283	4282	4281
Model F-statistic	263.4	377.5	118.9	144.5	227.7	113.9
p-value	0.00	0.00	0.00	0.00	0.00	0.00
R-squared stat	0.232	0.331	0.204	0.156	0.231	0.16
t statistics in parentheses						
* p<0.10, ** p<0.05, *** p<0.01						

Table 6: OLS regressions - levels of leverage depending on the E-Index

All p-values of the f-test in Table 6 are below 5%, showing that at least one beta coefficient in this model is significantly different from zero. Again, t-test coefficients of all independent variables excepting the ones of tangibility are significant at a 1 %-level. The addition of one E-Index provision determines an increase of 0.0108 in book leverage. Similarly, a marginal increase (i.e. an increase by one unit) in the E-Index raises market leverage by 0.00779 and lowers interest coverage by -0.603. Results are robust with respect to the implementation of different measures of entrenchment and leverage, since there is a high similarity between the coefficients of the models (1) and (2).

Both models also provide similar coefficients with respect to the control variables: leverage decreases with market-to-book ratio and profitability and increases with size. According to the findings in Table 6, tangibility does not have a significant impact on leverage. The coefficients of tangibility are consistent with theory only for mean market leverage, interest coverage and mean interest coverage.

To conclude, results confirm the first Hypothesis of this paper and provide evidence that the degree of shareholder protection is a determinant of leverage. The estimates provided by the OLS regressions of this study document a positive relationship between managerial entrenchment and external debt financing. However, the effects of the E and G-Index on leverage are rather small. Generally, results are similar to John and Litov (2010), Chava et al. (2008), Klock et al. (2005) and Cremers et al. (2004) and hold for all robustness checks implemented by now (i.e. different measures of entrenchment and leverage).

At the beginning of the previous chapter, it was briefly stated that the current analysis is based on panel data. The main characteristic of a panel dataset is the presence of multiple observations over the same economic units (Baum, 2006 and Cameron and Trivedi, 2010). The data used in this study comprise repeated measurements on the same companies at different points in time over a the period 1990-2000. Since not every individual unit is observed in all time periods ($T_i \neq T$ for some i), the present dataset is *unbalanced* (Cameron and Trivedi, 2010).

The linear representation of several models that arise from panel data takes the following form:

$$y_{i,t} = \sum_{k=1}^k x_{kit} \beta_{kit} + \epsilon_{it}, i = 1, \dots, N, t = 1, \dots, T, (3)$$

and comprises T observations for each of their N individuals. The number of regression coefficients is therefore $k \times N \times T$.

Therefore, one cannot estimate all regression coefficients by relying on $N \times T$ observations. Applying ordinary least squares analysis would rely on the assumption that $\beta = \beta_j$, which would imply that the nature of panel data is ignored (Baum, 2006). According to Baum (2006), running OLS regressions on panel data might be overly restrictive in the sense that they may ignore unobserved components (e.g. unobserved heterogeneity). Cross-sectional OLS regressions may capture variation over units, but they leave apart time-variant information and allow for potential bias (Baum, 2006). This could be a possible explanation for the high level of significance provided by the previous results. According to Baum (2006), panel data requires a more complex method of analysis.

One model which is highly emphasized by microeconometrics literature is the *fixed-effects* model (Cameron and Trivedi, 2010). This model relaxes the assumption that the regression function is constant over time and space and therefore allows for heterogeneity across economic units and time (Baum, 2006). Unlike random-effects models, which assume that regressors are entirely exogenous, fixed-effects models allow for a certain degree of endogeneity, given by the correlation between regressors and the time-invariant component of the error term.

Leaning on this theory, I apply both types of regressions on the present dataset. In order to insure robustness, I implement first a Hausman test in order to investigate formally if random-effects models provide reliable estimates, or if additional fixed-effects regression models are necessary. The Hausman test compares fixed-effects and random-effects estimators by testing the null hypothesis of individual effects being random (i.e. of both types of estimators being consistent) against the alternative hypothesis, which assumes that the two types of estimators diverge (Cameron and Trivedi, 2010). In all cases, findings show that the Hausman test soundly rejects the null hypothesis and therefore indicate that fixed-effects models produce the most consistent estimates. In the next chapter, I test the first Hypothesis of the present paper by running fixed-effects panel regressions on the above presented models (1) and (2).

6.2.2. Fixed-effects panel regressions: Corporate Governance and leverage

Results of fixed-effects panel regressions testing the effects of managerial entrenchment as measured by the G-Index on three of the six measures of leverage are depicted by Table 7.

Table 7			
Panel Regressions: Levels of Leverage depending on the G-Index			
Independent variables	Book Leverage	Market Leverage	Interest Coverage
G-Index t-1	0.00136 (1.41)	0.000542 (0.50)	0.320*** (2.64)
MB Ratio t-1	0.00263 (1.38)	-0.00917*** (-4.21)	2.110*** (8.38)
Tangibility t-1	-0.00483 (-0.36)	-0.000201 (-0.01)	-3.066* (-1.84)
Profitability t-1	-0.275*** (-8.10)	-0.339*** (-8.89)	25.12*** (5.69)
Size t-1	0.0121*** (6.58)	0.0121*** (5.79)	-0.611*** (-2.61)
_cons	0.424*** (27.57)	0.315*** (18.24)	5.335*** (2.73)
Observations	4283	4267	3986
Model F-statistic	25.45	42.12	44.15
p-value	0.00	0.00	0.00
R-squared stat	0.0353	0.0573	0.0637
t statistics in parentheses			
* p<0.10, ** p<0.05, *** p<0.01			

Table 7: Panel regressions - levels of leverage depending on the G-Index

Data on coefficients for the other three, „mean“ measures of leverage is missing, because these mean values are, by construction, time-invariant variables (Cameron and Trivedi, 2010). However, the remaining measures of leverage should suffice for insuring robustness. Due to the low variance of G over the years, the explanatory power of the fixed-effects panel model is lower than the explanatory power of the OLS model.

This is shown by the t-values, which depict moderate levels of significance. In line with recent research, the impact of the G-Index on book leverage and market leverage is positive. However, its coefficients are very low and not significant. Surprisingly, the G-Index manifests a significant, positive effect on interest coverage, which is not consistent with the first Hypothesis of this paper.

The coefficients of the control variables are also only partly consistent with theory: market-to-book ratio has a very low, almost negligible positive impact of 0.00263 on book leverage and a low, but significant negative effect of -0.00917 on market leverage. Similarly, a marginal increase in the market-to-book ratio increases interest coverage twice at a 1 % level of significance. A marginal increase in profitability decreases book leverage by a significant coefficient of -0.275 and market leverage by a significant -0.339. Similarly, profitability increases interest coverage by 25.12. By relying on these results, I can state that market-to-book ratio, as well as profitability, have a negative effect on leverage and confirm the assumptions discussed in the theoretical section of this paper.

Tangibility has very low, negative effects on both book leverage (of -0.0048) and on market leverage (of -0.0002). Tangibility has also a negative impact on interest coverage of -3.066, which is significant at a 10 % level. Based on these findings, I conclude that the impact of tangibility on leverage, as documented by panel models, is negligible. By contrast to tangibility, size is a significant control variable, which points out that large firms are able to incur higher levels of external debt financing.

Table 8 explains the effects of the E-Index on leverage by using panel regressions.

Table 8 Panel Regressions: Levels of Leverage depending on the E-Index			
Independent variables	Book Leverage	Market Leverage	Interest Coverage
E-Index $t-1$	0.00344* (1.75)	-0.0018 (-0.82)	0.851*** (3.43)
MB Ratio $t-1$	0.00285 (1.49)	-0.00940*** (-4.30)	2.163*** (8.56)
Tangibility $t-1$	-0.0049 (-0.37)	-0.000459 (-0.03)	-3.128* (-1.88)
Profitability $t-1$	-0.276*** (-8.13)	-0.338*** (-8.85)	24.97*** (5.66)
Size $t-1$	0.0123*** (6.80)	0.0125*** (6.09)	-0.564** (-2.45)
_cons	0.427*** (29.68)	0.321*** (19.86)	5.972*** (3.27)
Observations	4283	4267	3986
Model F-statistic	25.67	42.21	45.18
p-value	0.00	0.00	0.00
R-squared stat	0.0356	0.0574	0.0651
t statistics in parentheses			
* p<0.10, ** p<0.05, *** p<0.01			

Table 8: Panel regressions - levels of leverage depending on the E-Index

Again, the effects on mean leverage measures are omitted due to their time-invariant nature. The E-Index does not excessively vary over time, so the explanatory power of the fixed-effects panel models is also moderate. However, the positive impact of E on book leverage amounts 0.00344 and possesses a 10 % level of significance, which confirms the first Hypothesis of this paper. According to Table 8, the effects of E on market leverage are negative, but negligible (-0.0018), and its influence on interest coverage is positive (0.851, significant at a 5 % level). The estimates of the control variables in the case of E are very similar to the ones of the previous model and show that profitability is significantly negatively related with leverage: a marginal increase in profitability triggers a decrease of -0.276 on book leverage, as well as a decrease of -0.338 on market leverage. Similarly, interest coverage raises by 24.97 with market-to-book ratio. All estimates are significant at a 1 % level. Market-to-book ratio has a positive, but insignificant impact on book leverage of 0.00285. A marginal increase in the market-to-book ratio a small negative impact on market leverage of -0.0094 (significant at a 1 % level) and a positive effect on interest coverage of 2.163 (also significant at a 1 % level).

To conclude, fixed-effects panel regressions provide modest, only partly robust evidence with respect to the effects of managerial entrenchment on leverage. The findings described in this chapter do not lead to a complete rejection of the first Hypothesis, however, they only have limited explanatory power, which can be justified by the low variation of managerial entrenchment over time. Even if the estimates of panel regressions with respect to the effects of managerial entrenchment on leverage do not completely confirm the assumptions made by theory, it is of great importance to investigate their significance, because, as explained before, the structure of the present dataset requires the implementation of panel models.

6.2.3. 2 SLS regressions: Corporate Governance and leverage

Literature takes into account a potential joint determination of firm leverage and the chosen entrenchment proxies. For example, John and Litov (2010) argue that firms' capital structure decisions may fall simultaneously with corporate charter amendments which increase entrenchment (for example, by increasing the number of inside directors or by adopting anti-takeover provisions). Therefore, OLS estimates may be biased if there exists a latent factor which influences both entrenchment and levels of leverage and if this latent factor is not being controlled for. This issue is called „endogeneity“ (John and Litov, 2010).

A fundamental requirement for providing consistent OLS estimates is that the error term is unrelated to the regressors. In other words, for the equation

$$y = \beta_0 + \beta_1 x + u, \quad (4)$$

$E(u|x)$ must be equal to zero. If this assumption is violated, the model does not exclude causality, which could also represent an issue of the present study.

One of the leading methods of estimation for models with endogenous regressors is the *instrumental-variables* approach. The iv estimators provide consistent results by assuming the existence of valid instruments z , which are correlated with the regressors x and satisfy $E(u|z) = 0$ (Baum, 2006). I follow John and Litov (2010) by treating the G-Index and leverage as endogenous and estimate the instrumental variables by using a two-stage least squares (2 SLS) model. With 2 SLS models, the first stage consists in assuming the existence of at least one variable z (also called *instrument*) which provides information on the variable being *instrumented* (i.e. x or, in the present case, G), but is not correlated with the residuals of y (which is, in this case, leverage). In a second stage, y is regressed on x using the instrument z under the condition that $E(u|z) = 0$.

In the process of finding an appropriate instrument for G , I follow John and Litov (2010), and assume the presence of state-peer effects on the G-Index of the company in question. State-peer effects on entrenchment can occur if influential stakeholders in the respective state of incorporation are part of the board of directors of the company in question. Influential stakeholders are, for example, legal consultants, labour union representatives, or even CEOs of other companies located in the same state (e.g. by being part of a local director network). Especially in the last case, CEOs may determine the adoption of similar corporate charter provisions as other firms incorporated in the respective state, as well as a similar implementation of anti-takeover devices.

In my analysis, I construct the instrumental variable by computing the average G-Index of all companies incorporated in the same state and assume that this instrumental variable would positively correlate with the G entrenchment index. Meanwhile, I expect that the instrumental variable is uncorrelated with the second-stage (leverage) regression's residuals, since the entrenchment level of other companies in the same state of incorporation should not be a determinant of financing policy for the firm in question.

Table 9 presents descriptive statistics for the instrumental variable „Average G-Index“ used in the 2 SLS estimation, as well as pairwise correlations between the instrumental variable and

the variables G, book leverage, market leverage and interest coverage, which are assumed to be endogenous.

Table 9 Descriptive Statistics Levels of Leverage and Managerial Entrenchment: Endogeneity-Robust Estimation					
Part I. Descriptive statistics for the instrumental variable used in the 2SLS estimation. I instrument the G-Index with the average of this index for all companies incorporated in the same state .					
Instrumental Variable	Observations	Mean	10% Value	Median	90% Value
Instrument: average G-Index for all companies in the same state of incorporation	4,344	9.37	8.45	9.36	10.2
Part II. Pairwise correlations among the <i>instrumental</i> variable (horizontal tab) and the <i>instrumented</i> (endogenous) variable G, together with book leverage, market leverage and interest coverage (vertical tab).					
Instrumental Variable	Instrumented variable G-Index	Book Leverage	Market Leverage	Interest Coverage	
Instrument: average G-Index for all companies in the same state of incorporation	0.3233***	0.1102***	0.0827***	-0.1001***	
* p<0.10, ** p<0.05, *** p<0.01					

Table 9: Descriptive statistics - levels of leverage and managerial entrenchment: endogeneity-robust estimation, where the G-Index is instrumented by the average of this index for all companies incorporated in the same state

According to Part I of Table 9, the average G-Index has been computed for 4,344 firm-year observations and average entrenchment for a given state equals 9.37, showing that firms in the present sample are rather management-protective, as they belong to the „dictatorship“ group (with $G > 5$). In Part II of Table 9, I compute pairwise correlations between the instrumental variable (i.e. average G-Index) and the instrumented (endogenous) variable G. Findings show that the instrumental variable is mostly correlated with G, with a highly significant coefficient of 0.3233 and confirm that the existence of state-peer effects determines the level of managerial entrenchment of the firm in question. In order to find out if managerial entrenchment of state peers influences the capital structure decisions of the firm in question, I further investigate the correlation between the instrumental variable and the three main measures of leverage, which are also assumed to be endogenous within the regression. The average G-Index features a low correlation with book leverage (0.1102, significant at a 1 % level) and market leverage (0.0827, significant at a 1 % level).

Meanwhile, the average G-Index is negatively correlated with interest coverage (-0.1001, significant at a 1% level). These results show that there is a low correlation between the existence of state-peer entrenchment effects and a firm's leverage.

In a next step, I implement fixed-effects 2 SLS regressions. With panel models, the instrumental approximation of G leads to omitted results because of the low variation in the average G-Index over the years. Therefore, I present only the results of cross-sectional, 2 SLS models. In Table 10, I illustrate the estimates of first-stage regressions of the 2 SLS-analysis, with the aim of explaining the endogenous variable G.

Table 10 Levels of Leverage and Managerial Entrenchment: Endogeneity- Robust Estimation First-Stage Least Squares Analysis Instrumental variable: average G-Index for all companies incorporated in the same state			
Independent variables	G (Book Leverage)	G (Market Leverage)	G (Interest Coverage)
Instrumental Variable: Average G	0.9522*** (21.66)	0.9559*** (21.72)	0.9863*** (21.61)
MB Ratio $t-1$	-0.2888*** (-7.24)	-0.2975*** (-7.43)	-0.2466*** (-5.51)
Tangibility $t-1$	0.0811 (0.38)	0.0797 (0.38)	-0.207 (-0.94)
Profitability $t-1$	0.9942 (1.37)	1.0958 (1.51)	1.1144 (1.43)
Size $t-1$	0.2771*** (9.41)	0.2777*** (9.42)	0.2467*** (8.08)
_cons	-1.1491** (-2.47)	-1.1864** (-2.55)	-1.1611** (-2.42)
Observations	4279	4263	3982
Model F-statistic	138.02	138.99	122.18
p-value	0.00	0.00	0.00
R-squared stat	0.139	0.14	0.133
t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01			

Table 10: Levels of leverage and managerial entrenchment - endogeneity-robust estimation. First-stage least-squares analysis, where the G-Index is instrumented by the average of this index for all companies incorporated in the same state

The f-test is significant at the 1 %-level and provides evidence that in this model, there is at least one beta coefficient which is significantly different from zero. With a highly significant coefficient which takes a value close to 1, the chosen instrument has a powerful impact on G for all three measures of leverage. Therefore, I conclude that managerial entrenchment of state peers has positive effects on the managerial entrenchment of the company in question.

The second stage of the 2 SLS analysis (Table 11) investigates if the model is robust with respect to endogeneity.

Table 11 Levels of Leverage and Managerial Entrenchment: Second-Stage Least Squares Analysis Instrumental variable: average G-Index for all companies incorporated in the same state			
Independent variables	Book Leverage	Market Leverage	Interest Coverage
Instrumented			
Variable: G	0.0117*** (4.29)	0.00762*** (2.77)	-1.385*** (-4.66)
MB Ratio t-1	-0.0243*** (-7.87)	-0.0456*** (-15.02)	3.270*** (8.35)
Tangibility t-1	-0.0904*** (-6.60)	-0.000867 (-0.06)	-3.225** (-2.53)
Profitability t-1	-0.370*** (-6.86)	-0.831*** (-16.65)	45.57*** (7.72)
Size t-1	0.0498*** (23.77)	0.0275*** (13.49)	-2.230*** (-10.92)
_cons	0.156*** (6.08)	0.292*** (11.01)	27.83*** (9.62)
Observations	4279	4263	3982
Model F-statistic	272.3	400.3	120.5
p-value	0.00	0.00	0.00
R-squared stat	0.237	0.334	0.198
t statistics in parentheses			
* p<0.10, ** p<0.05, *** p<0.01			

Table 11: Levels of leverage and managerial entrenchment - endogeneity-robust estimation. Second-stage least-squares analysis, where the G-Index is instrumented by the average of this index for all companies incorporated in the same state

Interestingly, almost all t-statistics are significant at the 1 % level (excepting tangibility). A marginal increase in the G-Index, as instrumented by the average G, leads to significant, but low increases in book leverage (0.0117, at a 1 % significance level) and market leverage (0.00762, at a 1 % significance level). Similarly, a marginal increase in the instrumented G-Index lowers interest coverage by -1.385, at a 1 % significance level. Results confirm previous findings that entrenchment is consistently associated with higher levels of external debt financing and provide evidence that the model used in this study is robust with respect to endogeneity. However, the robustness of these results has to be interpreted carefully, as the instrument used in the analysis alone (average G-Index) is not able to entirely eliminate causality. Beside state-peer effects, there might exist other latent factors which influence leverage and/or entrenchment, and for which this analysis does not control.

6.2.4. OLS regressions: anti-takeover laws and leverage

As documented by literature, causality is one major concern when analysing Corporate Governance and its effects on leverage (John and Litov, 2010). Corporate Governance may be consistently related with higher levels of indebtedness, but leverage may, in turn, serve as an efficient device for Corporate Governance (Jensen, 1986). However, this causal link can be mitigated when thinking about the impact of the 1980's takeover pressure on both Corporate Governance and leverage.

In addition to the instrumental analysis discussed in the previous chapter, I follow John and Litov (2010) and Garvey and Hanka (1999) and investigate if the presence of exogenous Corporate Governance shocks (i.e. the introduction of state anti-takeover legislation) lead to changes in managerial preferences towards external debt financing. By contrast to the experiments done by John and Litov (2010) and Garvey and Hanka (1999), who analyse the adoption of Second Generation anti-takeover laws and their impact on leverage during the 1983-1993 time period, the present paper focuses on firms in states that passed (regular) anti-takeover laws between 1990-2000. As stated in the introduction, I choose this approach in order to insure consistency among several estimations of the present study, which are available for a common timeframe of 10 years (i.e. between 1990-2000). Due to this restriction, I do not focus on SGAT (which refers to an earlier time period). Instead, I use the Anti-takeover Index developed by Bebchuk and Cohen (2003) as a measure for exogenous Corporate Governance shocks given by the adoption of anti-takeover laws. For robustness reasons and due to the low variation of the Anti-takeover Index over time, I split the Anti-takeover Index and construct the dummy variable named „Pro-takeover group“. This

dummy variable takes the value of one if the Anti-takeover Index is zero (i.e. if no anti-takeover legislation was adopted by the state of incorporation of the company in question). Similarly, the dummy variable is assumed a value of zero if the Anti-takeover Index is greater than zero (i.e. if at least one type of anti-takeover legislation was adopted by the state of incorporation of the company in question).

Table 12 presents summary statistics with respect to anti-takeover protection, leverage and firm characteristics.

Table 12 Summary Statistics Anti-takeover Protection, Leverage and Firm Characteristics				
Variables	Anti-takeover Protection		t-test	
	Pro-takeover dummy (AT Index = 0)	Anti-takeover dummy (AT Index $\neq$ 0)	t	df
Book Leverage	34.52%	48.48%	7.0296***	4346
Market Leverage	24.04%	33.46%	4.4443***	4322
Interest Coverage	19.53	10.81	-4.5491***	4044
Profitability	0.194	0.167	-3.6797***	4325
Market-to-book ratio	2.21	1.93	-2.0463**	4322
Firm Size (US \$ mil.)	1,610.35	3,323.46	5.5409***	4346
* p<0.10, ** p<0.05, *** p<0.01				

Table 12: Summary statistics - anti-takeover protection, leverage and firm characteristics

These findings support the assumptions of the second Hypothesis of this paper, showing that firms incorporated in states with anti-takeover legislation feature higher levels of book leverage and market leverage (in average 48.48 % and 33.46 %) than companies in states which favour the occurrence of takeovers (in average 34.52 % and 24.04 %). Similarly, interest coverage is lower for more entrenched firms (i.e. firms incorporated in states featuring takeover-defense laws). The t-statistics for all three measures of leverage are highly significant at a 1 %-level. Average profitability for firms in states without protection against takeovers is about 3 % higher (in average 19.4 %) than average profitability of companies incorporated in takeover-protective states (in average 16.7 %). Similarly, market-to-book ratio is higher for takeover-exposed firms (in average 2.21) than for companies which are protected against corporate control contests (in average 1.93). According to the t-test, the difference

between „Pro-takeover“ firms and „Anti-takeover“ firms with respect to both market-to-book ratio and profitability is significant at a 5 % and 1 % level. Data support the assumption that an exogenously induced level of managerial entrenchment leads to a decrease in firm value. Anti-takeover legislation is also assumed to be determined by differences in firm size: firms in the anti-takeover group (i.e. more entrenched firms) are larger, with average assets of U.S. \$3,323.46 mil., whereas firms in the pro-takeover group (i.e. more shareholder-protective firms) are smaller, with average assets of U.S. \$ 1,610.35 mil.. This relation is enforced by the t-test, which takes the value of 5.5409 and is strongly significant at a 1 % level. Findings therefore support the assumption that managerial entrenchment might be positively associated with firm size.

Summary statistics in Table 12 are consistent with John and Litov (2010), who assumed that the presence of exogenous shocks on Corporate Governance leads to an increased managerial preference towards external debt financing. Moreover, Table 12 provides support for the assumption that leverage is lower for profitable firms and for firms with a high market-to-book ratio. Also, Table 12 supports the assumption that leverage is higher for larger companies.

Descriptive statistics in Table 13 depict the distribution of firms among states of incorporation and the degree of protection against takeovers depending on the state of incorporation. Over the time period 1990-2000, only three U.S. states (Arkansas, California and Texas) out of 38 restrained from adopting anti-takeover laws. The other 35 states enacted at least one type of anti-takeover legislation. Among these 35 states, Colorado and Delaware confer the lowest protection against takeovers (with an average anti-takeover index of 1), whereas Pennsylvania, Nevada, Idaho, Indiana, Ohio, Tennessee and Wisconsin feature the strongest legal defense mechanisms against takeovers (with an average anti-takeover index of 5). Overall, it is interesting to notice that most companies (about 97 %) are incorporated in states which provide protection against takeovers. Only about 3 % of all companies considered by the present sample are incorporated in states without any degree of anti-takeover legislation.

Table 13
Distribution of incorporations among states and the degree of Anti-takeover Protection

State of Incorporation	Anti-takeover Index	Number of Firms	Percentage
Arkansas	0	1	0.12%
California	0	14	1.74%
Texas	0	11	1.36%
Total Number of Firms in Pro-Takeover States		26	3.23%
State of Incorporation	Anti-takeover Index	Number of Firms	Percentage
Colorado	1	1	0.12%
Delaware	1	481	59.68%
Kansas	2	1	0.12%
Nebraska	2	1	0.12%
Oklahoma	2	2	0.25%
Utah	2	5	0.62%
Connecticut	2	3	0.37%
Washington	2	14	1.74%
Iowa	2	3	0.37%
Hawaii	3	1	0.12%
Louisiana	3	3	0.37%
Michigan	3	13	1.61%
North Carolina	3	9	1.12%
South Carolina	3	1	0.12%
Wyoming	3	1	0.12%
Maryland	3	13	1.61%
Virginia	4	11	1.36%
Oregon	4	3	0.37%
Minnesota	4	21	2.61%
Florida	4	14	1.74%
Georgia	4	9	1.12%
Illinois	4	6	0.74%
Kentucky	4	2	0.25%
Massachusetts	4	14	1.74%
Missouri	4	9	1.12%
New Jersey	4	14	1.74%
New York	4	27	3.35%
Rhode Island	4	1	0.12%
Pennsylvania	5	30	3.72%
Nevada	5	11	1.36%
Idaho	5	1	0.12%
Indiana	5	8	0.99%
Ohio	5	26	3.23%
Tennessee	5	8	0.99%
Wisconsin	5	13	1.61%
Total Number of Firms in Anti-takeover States		780	96.77%
Total Number of Firms		806	100.00%

Table 13: Distribution of incorporations among states and the degree of anti-takeover protection

Even if OLS is not the most appropriate method for estimating panel data coefficients, I implement this type of regression once again for testing the impact of state anti-takeover legislation on leverage in order to insure the continuity of the present analysis. Table 14 displays OLS estimates for the following model:

$$L_{i,t} = \beta_0'' + \beta_1'' Pro Takeover Dummy_t + \beta_2'' Control variables_{i,t-1} + \varepsilon_{i,t}'', (5)$$

where $L_{i,t}$ indexes all (mean) measures of leverage, i indexes firms, t indexes years and the *Pro Takeover Dummy_t* takes the value of one if the firm in question is incorporated in a state with no anti-takeover legislation (i.e. with an anti-takeover index of zero), and zero otherwise. I use the same *Control variables* as in the previous estimations and intend to express leverage as a function of entrenchment, given by the state of incorporation, and also as a function of the firm characteristics of the previous year. Due to the low timely variation of the pro-takeover dummy, I do not include the lagged version of this variable into the model. The estimates of this model are depicted by Table 14.

Table 14 OLS Regressions: Levels of Leverage depending on Anti-takeover Protection						
Independent variables	Book Leverage	Market Leverage	Interest Coverage	Book Leverage mean	Market Leverage mean	Interest Coverage mean
Pro-takeover Dummy	-0.0875*** (-6.46)	-0.0384*** (-2.59)	6.338** (2.57)	-0.0804*** (-7.05)	-0.0244** (-2.29)	0.736 (1.13)
MB Ratio t-1	-0.0282*** (-9.59)	-0.0482*** (-16.89)	3.675*** (9.68)	-0.0185*** (-9.79)	-0.0310*** (-16.50)	1.751*** (9.18)
Tangibility t-1	-0.0948*** (-6.85)	-0.00442 (-0.32)	-2.295* (-1.80)	-0.0370*** (-4.08)	0.0394*** (4.03)	-5.011*** (-6.93)
Profitability t-1	-0.345*** (-6.37)	-0.812*** (-16.08)	43.16*** (7.40)	-0.133*** (-3.85)	-0.390*** (-11.41)	15.86*** (5.39)
Size t-1	0.0530*** (28.83)	0.0297*** (16.13)	-2.619*** (-14.12)	0.0280*** (21.44)	0.0161*** (11.64)	-1.564*** (-13.96)
_cons	0.250*** (16.33)	0.352*** (22.74)	16.54*** (10.92)	0.354*** (33.46)	0.329*** (29.66)	18.57*** (19.79)
Observations	4283	4267	3986	4283	4282	4281
Model F-statistic	279.6	381.7	118.6	156	230.6	119.1
p-value	0.00	0.00	0.00	0.00	0.00	0.00
R-squared stat	0.231	0.329	0.205	0.161	0.23	0.153
t statistics in parentheses						
* p<0.10, ** p<0.05, *** p<0.01						

Table 14: OLS regressions - levels of leverage depending on anti-takeover protection

According to the F-statistics in Table 14, the beta coefficient of at least one independent variable differs significantly from zero, as all p-values are below 5%. T-statistics are significant, with only few exceptions (in the case of tangibility and mean interest coverage). The pro-takeover dummy determines a significant decrease in book leverage of -0.0875, which confirms the hypothesis that the absence of anti-takeover legislation, i.e. the absence of entrenchment, decreases the use of leverage. In other words, the adoption of state anti-takeover laws increases managerial preferences towards debt financing. The same relation applies for market leverage, which decreases by -0.0384 (at a 1 % level of significance) for firms in pro-takeover states. Similarly, firms incorporated in pro-takeover states have significantly higher (at a 5 % level) interest coverage ratios, as expressed by the coefficient of 6.338. Results hold for mean book leverage and mean market leverage, but not for mean interest coverage (which does not have a significantly positive coefficient). Estimates of the control variables profitability, market-to-book ratio and size are in line with theory and

significant at a 1 %-level: profitability decreases book leverage by -0.345, mean book leverage by -0.133, market leverage by -0.812, mean market leverage by -0.390 and increases interest coverage by 43.16, as well as mean interest coverage by 15.86. A marginal increase in the market-to-book ratio lowers book leverage by -0.0282, mean book leverage by -0.0185, market leverage by -0.0482 and mean market leverage by -0.0310 and raises interest coverage by 3.675, as well as mean interest coverage by 1.751. The impact of tangibility is significantly negative and consistent with theory with respect to interest coverage and mean interest coverage (significantly negative coefficients of -2.295 and -5.011), as well as in relation with mean market leverage (significantly positive coefficient of 0.0394). Findings are relatively robust with respect to the different measures of leverage and confirm the second Hypothesis of this paper, showing that exogenous Corporate Governance shocks represented by the presence of anti-takeover legislation increase managerial preferences toward debt financing. Results confirm the findings of John and Litov (2010), who assumed that state anti-takeover provisions reduce takeover risk, which leads to lower costs of external debt financing. Therefore, firms in anti-takeover states feature higher levels of leverage. Additionally, these results provide evidence that the relation between Corporate Governance and leverage is not solely determined by causality.

In an effort to address the causality concern in more detail, I additionally analyse the impact of anti-takeover legislation on *changes* in leverage. In this regard, I follow John and Litov (2010) and adjust the model (5) as follows:

$$\Delta L_{i,t} = \beta_0''' + \beta_1''' Pro\ Takeover\ Dummy_t + \beta_2''' Control\ variables_{i,t-1} + \varepsilon_{i,t}''', (6)$$

where $\Delta L_{i,t}$ indexes change in leverage and can be expressed as:

$$\Delta L_{i,t} = \frac{D_{i,t-1} + Debt\ Issuance_{i,t}}{A_{i,t-1} + Debt\ Issuance_{i,t} + Equity\ Issuance_{i,t}} - \frac{D_{i,t-1}}{A_{i,t-1}}, (7)$$

where $D_{i,t-1}$ defines lagged book debt and $A_{i,t-1}$ defines lagged total assets.

Table 15 presents OLS estimates for this regression. The f-test provides a p-value of 0.17, which means that no beta coefficient of this model differs significantly from zero.

Table 15 OLS Regression: Changes in Leverage depending on Anti-takeover Protection	
Independent variables	Changes in Leverage
Pro-takeover Dummy	0.0000266 (0.91)
MB Ratio $t-1$	-0.0000849 (-1.24)
Tangibility $t-1$	-0.000223 (-1.06)
Profitability $t-1$	0.00131 (1.32)
Size $t-1$	0.0000259 (1.29)
_cons	-0.000179 (-1.54)
Observations	2996
Model F-statistic	1.558
p-value	0.17
R-squared stat	0.024
t statistics in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$	

Table 15: OLS regression - changes in leverage depending on anti-takeover protection

According to the coefficients for the model (6) depicted in Table 15, changes in the amount of external debt financing are not significantly determined by any of the coefficients. Findings match the results of John and Litov (2010), who also document modest estimates in this regard. Therefore, the second Hypothesis of this paper cannot be explained by this dynamic model. John and Litov (2010) assume that these findings are affected by the unbalanced sample selection. This could also be the case of the present dataset, which includes a majority of firms (almost 97%) incorporated in anti-takeover states. As only 3% of the firms analyzed by the present study belong to the Pro-takeover group, the explanatory power of anti-takeover laws as a proxy for managerial entrenchment is rather limited.

6.2.5. Fixed-effects panel regressions: anti-takeover laws and leverage

As explained in Chapter 6.2.1., OLS regressions might represent a source of bias when analysing panel data. Therefore, the present chapter focuses on fixed-effects panel regressions for testing the effects of anti-takeover legislation on leverage. Table 16 presents the results of panel regressions for the model (5).

Table 16 Panel Regressions: Levels of Leverage depending on Anti-takeover Protection			
Independent variables	Book Leverage	Market Leverage	Interest Coverage
Pro-takeover Dummy	0.0970*** (3.15)	0.102*** (2.99)	0.6700 (0.18)
MB Ratio t-1	0.00247 (1.30)	-0.00924*** (-4.25)	2.068*** (8.22)
Tangibility t-1	-0.0040 (-0.30)	0.0008 (0.05)	-3.178* (-1.90)
Profitability t-1	-0.272*** (-8.03)	-0.337*** (-8.84)	25.33*** (5.73)
Size t-1	0.0127*** (7.05)	0.0123*** (6.05)	-0.474** (-2.07)
_cons	0.431*** (30.75)	0.315*** (20.05)	7.470*** (4.20)
Observations	4283	4267	3986
Model F-statistic	27	44	43
p-value	0.00	0.00	0.00
R-squared stat	0.0375	0.0596	0.0617
t statistics in parentheses			
* p<0.10, ** p<0.05, *** p<0.01			

Table 16: Panel regressions - levels of leverage depending on anti-takeover protection

I follow a similar approach like in Chapter 6.2.1. and run a Hausman test in order to find out which one of the random-effects or fixed-effects models is more appropriate. In all cases, the null hypothesis is rejected, which means that the fixed-effects panel regressions return the most accurate estimates.

Surprisingly, the Pro-takeover dummy turns out to have a significantly positive impact on book leverage (0.097, significant at a 1 % level), as well as on market leverage (0.102, significant at a 1 % level). Its effect on interest coverage is also positive, but not significant. Among the control variables, only the effects of size and profitability are

consistent with the previous findings and with theory, showing that larger firms incur higher debt ratios. According to the coefficients of the model in Table 16, firms incorporated in states without anti-takeover protection are more likely to issue debt than firms in states which have adopted anti-takeover laws.

These results are in line with Harris and Raviv (1988), Berger et al. (1995) and Garvey and Hanka (1999), supporting the theory that debt acts as a protection device for firms which are exposed to takeover threats. However, results in Table 16 are not in line with the assumptions of the present study. Panel regressions estimates do not provide statistically significant evidence that anti-takeover legislation increases levels of leverage and therefore lead to a rejection of the second Hypothesis of this paper.

In an attempt of investigating the consistency of these results, I run panel regressions on model (6), which is aimed at estimating the changes in leverage determined by the adoption of state anti-takeover provisions.

Results of panel regressions measuring the changes in leverage determined by the presence of anti-takeover legislation are displayed in Table 17.

Table 17 Panel Regression: Changes in Leverage depending on Anti-takeover Protection	
Independent variables	Changes in Leverage
Pro-takeover Dummy	-0.0000579 (-0.44)
MB Ratio $t-1$	-0.00000225** (-2.39)
Tangibility $t-1$	-0.0000751 (-1.19)
Profitability $t-1$	0.000380** (2.32)
Size $t-1$	0.00000935 (1.07)
_cons	-0.0000731 (-1.06)
Observations	2996
Model F-statistic	1.735
p-value	0.00
R-squared stat	0.00348
t statistics in parentheses	
* p<0.10, ** p<0.05, *** p<0.01	

Table 17: Panel regression - changes in leverage depending on anti-takeover protection

The explanatory power of these estimates is very limited. Results document that changes in leverage are negative when anti-takeover protection is implemented. However, the coefficient is extremely low (-0.0000579) and not significant. In line with theory, the estimates of Table 17 show that changes in leverage are negative when market-to-book ratio increases. This coefficient is again very low and very close to zero. A marginal increase in profitability leads to a positive change in leverage of 0.000380, at a 5 % significance level. This result is consistent with Jensen and Meckling (1986), who stated that firms have to lever up in order to increase efficiency. However, the present thesis supports the idea that leverage acts as an entrenchment device, assuming that leverage is associated with lower profitability. Therefore, the coefficient of profitability provided by Table 17 does not confirm the Hypotheses of the present paper. Increases in leverage which are determined by size are positive and in line with theory, but not significant and very close to zero.

To sum up, the effects of anti-takeover legislation on leverage documented by this dataset are rather ambiguous. The assumed impact of anti-takeover legislation on leverage is only significant on an aggregate level (i.e. as estimated by OLS regressions). However, as OLS regressions might distort the results when they are run on panel data, this impact has to be interpreted carefully. Results of the fixed-effects panel regressions analysing the impact of anti-takeover laws on debt financing are not very robust and do not possess a high explanatory power. Also *changes* in leverage are not significantly determined by the adoption of state anti-takeover legislation. Results of all four models which relate leverage to anti-takeover legislation are mixed. Hence, the second Hypothesis is only partly accepted (due to consistent OLS results), which means that, according to this dataset, the adoption of state anti-takeover legislation does not manifest a strong impact on a firm's amount of external debt financing. According to these findings, a potential causality between managerial entrenchment and leverage cannot be completely excluded. However, the dataset, as well as the variables used in this thesis might be subject to certain limitations, which will be presented in the following chapter.

6.3. Limitations

The findings of the present empirical study provide evidence for a positive relation between managerial entrenchment, computed by the G and E-Index, and the degree of external debt financing of companies, proxied by book leverage, market leverage and interest coverage, as well as their mean measures by SIC industry codes. Results confirm the first Hypothesis and partly reject the second one. The estimates are relatively robust when implementing different measures of leverage. A certain degree of robustness is also ensured by the usage of different proxies for managerial entrenchment. By using a 2 SLS endogeneity test, I show that the model is not subject to endogeneity issues. However, the instrumental analysis uses a single measure (i.e. average G-Index) for investigating if managerial entrenchment and leverage are jointly determined. As there might exist also other latent factors, which are not being controlled for in the regressions and which influence both entrenchment and leverage, the endogeneity of the present results cannot be entirely excluded. The present analysis is subject to certain limitations, determined mainly by the nature of the variables used, as well as by the sample selection.

As explained in the previous chapter, the proxies for managerial entrenchment (G-Index, E-Index and the Pro-takeover dummy), as well as a firm's state of incorporation, do not manifest a high degree of variation over time. Therefore, the explanatory power of (dynamic) panel models is rather modest. Especially in the case of anti-takeover legislation, dynamic models involving changes in leverage, as well as fixed-effects panel models feature low levels of significance.

As already mentioned in the previous chapters, the firm sample is not evenly distributed among the two main anti-takeover groups. According to descriptive statistics in Chapter 6.2.4., about 97% of firms in the present sample are incorporated in anti-takeover states. This sample selection issue has been also addressed by John and Litov (2010) in a related study. Since the ratio of anti-takeover firms in the present dataset might not depict the proportions of reality, results in this regard have a limited explanatory power. Therefore, in the case of exogenous shocks represented by the introduction of anti-takeover legislation, results should be interpreted with precaution (John and Litov, 2010).

Meanwhile, the models implemented by the present analysis rely on a relatively small, unbalanced panel comprising 806 firms. Since the study focuses exclusively on public U.S. companies, the present results cannot be applied on the entire universe of firms. The firms in the present sample belong to the Anglo-Saxon Corporate Governance system, which is characterized by dispersed ownership, as well as an active takeover market

(Franks and Mayer, 2000). As already discussed in Chapters 4.2 and 4.3, Continental Europe and Japan have systems of corporate governance characterized by concentrated ownership and a complex system of cross-share holdings, which prevent the occurrence of hostile takeovers (La Porta et al., 1999). Due to these institutional differences, Anglo-Saxon countries, including the U.S., feature higher levels of leverage than countries in Continental-Europe and Japan (Rajan and Zingales, 1995, Franks and Mayer, 2000). Therefore, the effect of Corporate Governance on capital structure documented by this empirical study applies only for certain economies and should not be generalized.

7. Conclusions

The present thesis provides evidence on the implications of Corporate Governance on capital structure. The theoretical part of this paper analyses the source of Corporate Governance conflicts and defines the concept of Shareholder Value. As mechanisms for mitigating agency conflicts, Corporate Governance can take various forms and may differ among firms and countries. Therefore, companies should focus on finding the right balance between managerial discretion and small shareholder protection (Becht et al., 2005). Finding the optimal balance, i.e. the optimal Corporate Governance structure is, with certainty, a core determinant of firm value. In this thesis, I include a comparison of some of the most important studies documenting this relationship.

In the empirical part of this study, I take a step further and investigate the direction, as well as the extent to which Corporate Governance determines financing policy. As described in a separate chapter of this paper, research done by Jensen and Meckling (1976), Jensen (1986), Grossman and Hart (1982), Berger et al. (1995), and Garvey and Hanka (1999) provides evidence that debt acts as a disciplining device on management. These scholars envision Corporate Governance and debt as substitutes and therefore conclude that entrenched companies choose mainly equity for financing their operations. By contrast to these studies, this master thesis supports recent research done by John and Litov (2010), Chava et al. (2008), Klock et al. (2004) and Cremers et al. (2004) and reveals that firms with entrenched managements experience an increased preference towards external debt financing. The first Hypothesis of the present paper relies on recent research and states that a high managerial entrenchment leads to higher levels of leverage. This relationship is also supported by John and Litov (2010), who justify these effects by stating that entrenched firms enjoy a better access to the debt markets, which allows for larger amounts of debt financing (John and Litov, 2010).

Corporate Governance research has also addressed the problem of causality arising between managerial entrenchment and a company's level of indebtedness. As discussed in the theoretical part of this paper, the market for corporate control and the takeover wave of the 1980s are external factors which eliminate causality, as they may also have determined positive and significant changes on managerial preferences with respect to debt financing. Similarly, the adoption of state anti-takeover legislation is assumed to increase a company's levels of leverage. In order to investigate the causality issue, I use a similar method as it was implemented by John and Litov (2010) and construct the second Hypothesis of this paper,

which tests the effects of exogenous Corporate Governance shocks (as represented by the adoption of state anti-takeover laws) on leverage.

For the empirical analysis I implement OLS regressions, as well as fixed-effects panel regressions. OLS estimates are significant, but might be determined by a potential bias, mainly because the data used in this analysis are panel data. Fixed-effects panel regressions are more appropriate for panel datasets, which comprise repeated measures of the same individuals over time (Kohler and Kreuter, 2009).

Because of the low timely variation in the G-Index, E-Index and the Pro-takeover dummy, findings of panel regressions do not possess a high explanatory power. Results confirm the first Hypothesis and document a relatively low, positive impact of managerial entrenchment, as measured by the G and E-Index on leverage. The low explanatory power of the estimates leads to a partial rejection of the second Hypothesis. The adoption of state anti-takeover legislation leads to increases in leverage only on an aggregate level, i.e. by using OLS regressions.

By implementing 2 SLS analysis, the present study provides evidence that the models used in this study are robust with respect to endogeneity. However, the validity of these results has to be interpreted carefully, because the usage of a single instrumental variable (average G-Index) is not able to entirely eliminate causality. Besides state-peer effects, as proxied by the average G-Index, there might exist other latent factors which influence leverage and/or entrenchment, and for which this instrumental analysis does not control.

Due to limitations which are explained in more detail in Chapter 6.3, the present dataset provides only restricted evidence against a potential joint determination of managerial entrenchment and leverage. However, results of this paper are, to a certain extent, consistent and hold for many of the implemented robustness checks.

While literature supporting the positive impact of managerial entrenchment on leverage is scarce, the analysis done by the present thesis is aimed at confirming previous results, as well as providing new evidence on a completely new sample. Meanwhile, there is an open path for future research in this field of study.

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Appendix

Curriculum Vitae

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Geboren: 19. September 1988 in
Pitesti, Rumänien



Familienstand: ledig

Ausbildung

Magisterstudium – Betriebswirtschaftslehre

03.2010 - 06.2012

Bildungseinrichtung: Universität Wien

Spezialisierung in den Bereichen Externe Unternehmensrechnung und Corporate Finance

Voraussichtliche Abschlussnote: 1.83

Bakkalauratsstudium – Betriebswirtschaftslehre

10.2007 – 02.2010

Bildungseinrichtung: Universität Wien

Abgeschlossen in einer Mindeststudienzeit von 5 Semestern mit der Abschlussnote 1.83

Spezialisierung: Management, mit den Schwerpunkten Externe Unternehmensrechnung, Finanzwirtschaft, Organisation und Personal, Marketing und Supply Chain Management

Bakkalaureatsarbeit: “Humankapital – Bemessung und Auswirkungen auf das wirtschaftliche Wachstum”

Gymnasium

09.2003 – 07.2007

Bildungseinrichtung: Nationalgymnasium “I.C. Bratianu” in Pitesti, Rumänien

Schwerpunkte: Mathematik-Informatik und Fremdsprachen (Deutsch)

Qualifikation: Abitur, Abschlussnote 9.85¹

Arbeitserfahrung

Steuerberater-Berufsanwärtlerin

07-2010 - Gegenwart

Arbeitgeber: Contax Wirtschaftstreuhandgesellschaft mbH, Wien

Tätigkeitsbereiche: Steuerberatung, Erstellung von Jahresabschlüssen, Betreuung von Projekten im Bereich EU-Finanzierungen

Extrakurrikuläre Aktivitäten

Mathematik-Tutorin

10.2009 – 06.2010

Arbeitgeber: Universität Wien, Institut für Statistik und Decision Support Systems, Fakultät für Wirtschaftswissenschaften

Auszeichnungen

2007: Dritter Preis bei der Deutscholympiade, Nationalphase, Ploiesti, Rumänien

¹ Benotungsskala Rumänien: 1-10; 5 bis 10: positive Beurteilung; 10 = sehr gut

2006: Erwähnung bei der Deutscholympiade, Nationalphase, Timisoara (Temesvar), Rumänien

2005: Erster Preis bei der Deutscholympiade, Nationalphase, Brasov (Kronstadt), Rumänien

2004: Erster Preis bei der Deutscholympiade, Nationalphase, Tg.Mures (Neumarkt am Mires), Rumänien

Sprachkenntnisse

Englisch: fließend

Deutsch: fließend (ZMP²)

Rumänisch: Muttersprache

IT Kenntnisse

Betriebssysteme: Mac OS, Windows XP, Vista, Windows 7

Microsoft Office: sehr gut

BMD: sehr gut

Weitere Aktivitäten

Freiwillige Mitarbeiterin in der Österreichischen HochschülerInnenschaft an der Fakultät für Wirtschaftswissenschaften der Universität Wien, 2009, 2010

Aufenthalt zur Verbesserung der deutschen Sprachkenntnisse: Kassel, 2006

Interessen

Musik (Keyboard), Skifahren, Aerobic, Reisen

² ZMP = Zentrale Mittelstufenprüfung, Goethe Institut Bukarest