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FILE	ESE-SCR-BEFAC_54927568_358404_AUBEL_VAN_358404.PDF (1.18M)		
TIME SUBMITTED	24-JAN-2017 11:56AM	WORD COUNT	27665
SUBMISSION ID	762091753	CHARACTER COUNT	140775

The Effect of Legal Origin on Ownership Structures, Corporate Valuation and External Finance After the Millennium

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Finish date: 24-01-2017

Preface and Acknowledgements

The last couple of months I have been working on this Master's thesis in order to complete my MSc in Financial Economics. I also study Law and because I'm equally interested in both Law and Economics, I chose a subject that has aspects of both. Despite some ups and downs in the writing process, I am happy with the result. I would like to take this chance to thank my supervisor Dr. Lemmen for his guidance and for stepping in on short notice when my initial supervisor was unable to continue with the supervision. Moreover, I would like to thank my friends and family for the support.

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Abstract

This study aims to research the effects of legal origin on ownership structures, corporate valuation and external finance after the millennium. Earlier research, that uses data from before the millennium, indicates that legal origin influences these metrics. Because of an increased convergence between common law and civil law and because of certain real events that happened shortly after the millennium, this study questions whether the effects of legal origin persist after the millennium. In order to study the possible effects of legal origin on corporate valuation and external finance, a sample period between 2001 and 2012 is used. Moreover, the research on the effects of legal origin on ownership structures uses data from 2009 and 2010. The results of the various regression models that are conducted in this study are mixed. They indicate that legal origin still has an effect on corporate valuation with firms in common law countries having both higher Tobin's Q and Return on Assets values than firms in civil law countries. However, the majority of the effects of legal origin on ownership structures and external finance seem to have disappeared after the millennium. Instead, the results suggest that law enforcement is a more important determinant of external finance and ownership structures.

Keywords: Legal Origin, Investor Protection Ownership Structures, Corporate Valuation, External Finance

JEL Classification: G21, G28, G32

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1. Introduction

1.1 Introduction and Motivation

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"Just as the common law derives from ancient precedents - judges' decisions - rather than statutes, baseball's codes are the game's distilled mores. Their unchanged purpose is to show respect for opponents and the game. In baseball, as in the remainder of life, the most important rules are unwritten. But not unenforced" (George Will)

Research on the effects of differences in investor protection and legal origin has resulted in a vast amount of literature. It follows from this literature that differences in investor protection and legal origin have an effect on inter alia: country's ownership structures (La Porta et al., 1998; Claessens et al., 2000), firm value (La Porta et al., 2002) and external finance (La Porta et al., 1997).

In general, countries of common law legal origin are assumed to have stronger investor protection than countries of civil law legal origin, with French civil law countries providing the weakest investor protection from the three civil law legal traditions (French, German and Scandinavian) (La Porta et al., 1998, 2000; Reynolds & Flores, 1989). In their research La Porta et al. (1998) show that countries of common law legal origin have more dispersed ownership structures, whereas the ownership structures of countries of civil law legal origin are more concentrated. La Porta et al. argue that this may be the case, because in countries with stronger investor protection there is less chance of investor expropriation. Therefore, investors in these countries have less need for controlling interests in firms, to protect themselves from expropriation. Moreover, significant differences are found in the private benefits of control between different countries. This indicates that the quality of a country's corporate governance regulations can lower the risk for minority investors in being expropriated by controlling parties. Other research by La Porta et al. (2002) provides evidence that firms in common law countries have higher valuation than firms in civil law countries. A reason for this may be that when investor protection is stronger, investors are willing to pay more for securities, which enhances firm value. Moreover, La Porta et al. (1997) show that countries with weaker investor protection have smaller and narrower capital market. La Porta et al. argue that when investor protection is stronger, investors are more likely to provide debt finance or buy securities. This will lead to larger and broader debt and equity markets.

However, all the above-mentioned research is conducted using data from the 1990s. Since then, academics have observed a trend of convergence between the common law and civil law legal systems (Funken, 2003). More recent research by Lele and Siems (2006) questions whether common law countries still have significantly stronger investor protection than civil law countries. They observe a convergence in shareholder protection, that has been taking place since 1993 and increased considerably since 2001. Other research by Spamann (2010) questions the findings of La Porta et al. (1997, 1998) that investor protection and legal origin have significant effects on a country's ownership structures and external finance. Spamann also provides a revisited version of the anti-director rights

index that was created by La Porta et al. (1997). Anti-director rights are rights for shareholders that can be present in a country. These rights provide extra protection to shareholders, for example whether or not shareholders in a country have preemptive rights that can only be waived by a shareholders meeting. An interesting question that arises from the above mentioned literature is whether legal origin still has an effect on ownership structures, firm value and external finance in more recent years?

1.2 Problem Statement and Contribution to the Existing Literature

This study will investigate the possible effects that a country's legal origin has on external finance, firm value and ownership structures. The main research question of this study is:

Does legal origin affect ownership structures, corporate valuation and external finance after the millennium?

To my knowledge, this is the first study that assesses the effects of legal origin using panel data and also the first study that uses data from after the millennium (2001-2012 & 2009-2010) to research these effects. The study of Spamann (2010) is the most recent study on the effects of legal origin, but uses data from 1996 and earlier. Most of the other studies on the effects of legal origin are conducted before or shortly after the millennium and all of them use data from the 1990s. There is an added contribution in testing whether the increasing convergence of investor protection between common law and civil law countries, that has been observed by Lele & Siems (2006) and various other academics, has had implications for the effects of legal origin on ownership structures, corporate valuation and external finance. This convergence is among other things caused by an increased globalization of the legal world (Funken, 2003). Aspects that have had an important positive influence on investor protection in civil law countries are the rise of judicial lawmaking by civil law judges and the increased influence of practitioners of law, such as lawyers and arbitrators, on the development of laws (Hermida, 2004). At certain real events that happened after the millennium, have influenced investor protection in both civil and common law countries. These events include the introduction of: the Committee of European Securities Regulators (CESR) by the European Union in 2001, the financial services reform act in Australia in 2001 and the Sarbanes-Oxley (SOX) act in the United States in 2002.

As far as the author of this study knows, this study is also the first to combine ownership structures, external finance measures and firm value, which is measured with both market performance (Tobin's Q) and accounting performance (Return on Assets), with legal origin in a single study. Moreover, this study researches the effects of legal origin using new measures of firm valuation (Return on Assets) and external finance (the Risk Premium on Lending, the Total Value of Stocks Traded to GNP and three different Debt Market Capitalization measures). This study also adds various extra control variables to its regressions that are known to relate to ownership structures, corporate valuation and external finance. These variables have not been used in earlier research on legal origin.

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1.3 Data and Methodology

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The sample of this study consists of 49 countries from common law origin, French civil law origin, German civil law origin and Scandinavian civil law origin. The sample is similar to the sample used by La Porta et al. (1998) in order to test the significance of legal impact after the millennium. Moreover, to test the possible effect of legal origin on ownership structures and corporate valuation, from each of these countries the ten largest domestic, publicly traded, non-financial firms are selected. Data on country specific metrics such as GDP growth and GNP per capita are collected from the World Bank Database and the International Financial Statistics Database. Data on firm specific metrics such as Tobin's Q, Return on Assets and other firm specific ratios and metrics are collected from the Worldscope Database. Furthermore, a country's legal origin is obtained from the Law and Finance literature from the study by Reynolds & Flores (1989). Also, the revisited Anti-director Rights and the revisited Creditor Rights indices from respectively Spamann (2010) and Djankov et al. (2005) are used.

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Eight hypotheses are composed to answer the research question. The hypotheses are tested through the use of seven random effects Generalized Least Square (GLS) regression models and one Ordinary Least Squares regression model. The dependent variables of the GLS regressions are: Debt Market Capitalization/GDP, Equity Market Capitalization/GDP, the number of Listed Domestic Firms, Population (in millions), Return on Assets, Tobin's Q and the Total Value of Stocks Traded/GNP. The dependent variable of the OLS regression model is a country's Mean Ownership Concentration. The independent variables are a Civil Law Dummy variable and several other measures of investor protection. Also, various control variables that are known to relate to the dependent variables are added to the regressions.

1.4 Main Findings

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The results of this study differ and indicate that some of the effects of legal origin persist after the millennium while other effects of legal origin have disappeared. Regarding the effect of legal origin on corporate valuation, this study indicates that this effect still exists after the millennium. Similar to the study by La Porta et al. (2002), this study finds that firms in common law countries have significant higher Tobin's Q and Return on Assets values than the firms in civil law countries. The results of the ownership concentrations regressions are mixed and no clear conclusion can be drawn from them. The first regression model, that includes the Civil Law Dummy and several control variables, suggests that there is a significant effect of legal origin on ownership structures. However, when other measures of investor protection are added in the second ownership structures regression model, this effect is gone. Moreover, the effects of legal origin on external finance do not seem to persist after the millennium. From the five different external finance measures that are used in this study, legal origin only has a significant influence on one; common law countries have significantly more listed firms to their population than civil law countries. Another important conclusion that can be drawn from the external finance regression results is the importance of law enforcement for external finance. The results indicate

that a country's law enforcement is an important determinant of the size and breath of that country's debt and equity markets, the number of listed firms and the total value of stocks traded. Features of law enforcement that are economically important are the severity of the penalties on financial misconduct in a country, the effectiveness of these penalties in deterring financial misconduct and the way in which financial misconduct is assessed. For example, the publication of findings of misconduct could have an important deterring effect.

2. Literature Review

This chapter will provide an overview of the relevant literature for this study and will serve as a theoretical basis. First, the basics of investor protection will be explained. After that, the focus will be on the four legal families, the differences in investor protection among them and the convergence between common law and civil law. Finally, the possible implications of the differences in investor protection on firm valuation, ownership structures and external finance are discussed.

2.1 Investor Protection

Firms often seek for external finance. The most common reason firms need external finance is growth. The use of external funding may allow firms to finance growth projects, which the firm is unable to fund on its own. External funding can also be used for R&D expenditures or large capital equipment purchases to facilitate growth. Investors provide external finance most commonly in the form of debt or equity. When these forms of external finance are provided, the investor becomes a creditor or a shareholder of the firm.

The use of external finance gives rise to agency problems. The essence of the agency problem is the separation of ownership and control. The agency problem in this context refers to the difficulties that investors have in assuring that their funds are not expropriated or wasted on unattractive projects by a firm's management. Expropriation can occur in different forms. Managers can simply extract cash from the firm, but managerial expropriation can also take more elaborate forms. An example of this is transfer pricing, when managers set up independent companies that they own personally and sell the output of the main company they run to their independent companies at below market prices (Shleifer & Vishny, 1997). Another important form of expropriation is the expropriation of shareholders. Managers can expropriate shareholders by not sharing profits with them or by entrenching themselves and staying on the job, even if they are no longer competent or qualified to run the firm (Shleifer & Vishny, 1989). Johnson et al. (2000) introduce the term "financial tunneling" for methods that are used to expropriate the stock value of minority shareholders. Financial tunneling includes secondary equity offerings, to dilute minority share ownership and freeze out transactions, in which minority shareholders are pressured by the controlling shareholders to sell their stocks. Expropriation can also occur in the form

of nationalizations, when governments take possession of private property without the consent of its owners. Examples are the nationalization of banks during the 2008 international financial crisis

When investors decide to provide external finance to a firm, they want to minimize the risk of being expropriated, but also other risks such as credit risk. Therefore, investors obtain certain rights or powers, which are protected by the enforcement of regulations and laws. Shareholders obtain protected rights to participate in a company's profitability, cast votes at a firm's general or annual shareholder meeting, elect directors, etc. However, they will receive their part of the firm's profit after the bondholders are paid. Creditors typically obtain rights that protect them in case of bankruptcy or reorganization. These protected rights for creditors enable them to protect their seniority, repossess collateral and make it less easy for firms to seek court protection when pursuing a reorganization (La Porta et al., 2000). The rights that protect investors are derived from different sources. Investor rights typically come from laws such as company, security and takeover law. Other sources of investor rights include stock exchange regulations and accounting standards (La Porta et al., 2000). In general, these laws and regulations are enforced by a country's courts, market regulators and sometimes by market participants themselves.

In different countries, the levels of investor protection and law enforcement are also different. When a country provides weak investor protection, investors will have less rights or powers to protect them from expropriation and other risks. Moreover, the enforcement of the rights and regulations that protect investors may be weaker in these countries. Enforcement of laws and regulations is vital. A lack of enforcement takes away the incentive for insiders to repay creditors or distribute profits to shareholders (Boubakri, Cosset, & Guedhami, 2005). Weaker law enforcement makes it easier for insiders to expropriate investors. Therefore, investors are less likely to provide external finance in countries with weaker investor protection. In addition, they might pay less for securities or ask for higher returns on debt finance (La Porta et al., 1998). Nevertheless, in several countries enforcement of investor rights by courts is uncertain. Courts are often incapable or unwilling to get to the bottom of complicated financial contracts. Courts are also considered to be slow and are sometimes subject to political pressure and corruption. When courts are unable to enforce private contracts, other forms of investor protection, such as judicially-enforced laws and government-enforced regulations might be more efficient in protecting investors. The question arises which of the three (contracts, judicially-enforced laws and government-enforced regulations) is most efficient in protecting investors. This question is to be answered by empirical research. Important work by La Porta et al. (1998) addresses investor protection in 49 countries over the world. They also discuss the quality of enforcement of these rules by measuring the efficiency of the judicial system and the quality of accounting standards. Lastly, La Porta et al. use this information to measure whether quality of enforcement and the presence of legal rules vary across countries and the different legal families.

2.2 Legal Families

Although there are no nations that have exactly the same laws, academics agree that the legal systems of some countries have enough similarities to classify them into different legal families. Using this approach, academics identify two main legal traditions: civil law and common law.

The oldest is the civil Romano-Germanic tradition, which is most influential and widely spread around the world. The civil law tradition originates in Roman law and uses statutes and comprehensive codes as its primary means of ordering legal material. It relies heavily on legal academics to ascertain and formulate its rules (Merryman, 1969). Within the civil law tradition academics distinguish three families of law: French civil, German civil and Scandinavian civil. The French Commercial Code was written under Napoleon in 1807 and brought through Western Europe by his armies. In the colonial era, the legal influence of French Commercial Code extended to the Near East, Northern Africa and Latin America (Glendon, Gordon, & Osakwe, 1992). The German Commercial Code was written in 1897 after the unification of Germany in 1871. Nearly a century after the French code. This might be the reason that the German code is not as widely spread as its French equivalent. The German code has influenced the legal systems of various eastern and southern European countries. The code has also had an important influence in the Far East. The laws of the Scandinavian countries are shared among the civil law tradition, but have less similarities with Roman law as the French and German traditions. Legal academics often view the codes of the Scandinavian countries as similar to each other, but slightly different from other civil law countries (Zweigert & Kotz, 1987). An important feature that sets Scandinavian law apart from the civil law tradition is its attitude towards codification. In the Scandinavian countries there are a number of statutes on different aspects of private law. Legal problems that are not covered in these statutes are often solved by applying analogy principles from these statutes or by the use of case law. Another feature that is special to Scandinavian law is the importance that the tradition assigns to the preparatory legislative material of the statutes. The preparatory legislative material, primarily the government bills to the parliament that propose the legislation, often contain detailed explanations of the way the different provisions within the proposed statute are to be interpreted (Bernitz, 2010).

The common law legal tradition is materially different from the civil law tradition as common law is formed by judges who have resolved specific disputes. Precedents from judicial decisions shape the common law. This in contrast to the contributions by legal academics on which civil law relies (La Porta et al., 1998). The common law tradition has spread from England throughout the British colonies. Countries with a common law tradition include: America, Australia, Canada and India.

2.3 Investor Protection and Legal Origin

In research done by La Porta et al. (1998, 2000), the differences in investor protection between common law countries and civil law countries are discussed. According to both these studies, common law

countries provide outside investors with stronger shareholder and creditor protection than civil law countries. Also others such as Claessens et al. (2000) have provided evidence in favor of this proposition. But why is common law more protective of outside investors than civil law? Academics have come up with two different answers to this question, namely the judicial and the political explanation.

The judicial explanation why common law provides investors with better protection than civil law is documented by Johnson et al. (2000) and by Coffee (2000). The legal rules of a common law system are shaped by judicial decisions of judges and inspired by legal principles such as a fairness and fiduciary duty. Judges ought to apply these principles even when specific conduct is not yet described or prohibited by a firm's statutes. When it comes to the expropriation of investors, judges tend to perform what Coffee calls a "smell test". With the "smell test" judges try to sniff out whether the undescribed or prohibited conduct by insiders is unfair for investors. The ongoing development of new legal precedents to additional violations of the legal principles, and the fear thereof, reduces investor expropriation in common law countries. In contrast to this, the laws of civil law countries are formed by legislatures. The judges of civil law countries aren't allowed to go beyond the statutes of a firm and apply "smell tests" or examine whether specific conduct is in violation of legal principles. Therefore, insiders that find ways to expropriate investors, that aren't in violation of the statutes, can proceed without having to fear for an adverse verdict by a judge. Moreover, judges in civil law countries do not intervene in transactions that contain investor expropriation as long as these transactions have a plausible business purpose (La Porta et al., 2000).

Although the judicial explanation of the differences in investor protection between the legal systems is likely to be true, the explanation is also incomplete. Under the judicial explanation, the assumption has to be made that common law judges are likely to choose protection of investors over protection of insiders. This assumption may not always hold. In principle, the judges of common law countries could also use their judicial powers to serve political interests. This could well be the case if investors obstruct governmental goals. Moreover, common law judges could use their judicial powers to sanction investor expropriation instead of prohibiting it or use their powers to narrow the interpretation of fiduciary duty (Johnson, 2000). To explain the differences in investor protection between common law and civil law legal systems, a judicial explanation is not enough. An analysis of political history is also required.

A political explanation why common law countries provide investors with better protection is proposed by La Porta et al. (1999). In their article La Porta et al. discuss that governments of civil law countries tend to have relatively greater roles in regulating business than governments of common law countries. They see this as an important law-shaping factor. An explanation for this is suggested by Finer (1997), who points at the differences in relative power of kings and large landowners across European states. In England the king partially lost his control over the courts, which led to the courts being influenced by the parliament and the large landowners. Common law ended up protecting the large landowners from

the king. Over time, this protection shifted from the large landowners to investors. In Germany and France, the parliaments weren't as powerful as in England. The state had control over firms and was unwilling to surrender this power to financiers. Also the power over economic decisions, that the governments of civil law countries possess, wasn't surrendered to courts. Therefore, the governments maintained a statutory approach to commercial laws.

The above mentioned research by La Porta et al. (1999) supports the hypothesis that civil law countries have weaker protection of private property and encounter greater government intervention in economic activity than common law countries. Using proxies for corruption, bureaucratic delays and the amount and quality of regulation, their research shows that governments of civil law countries, especially French civil law countries, intervene more than common law countries. The weaker protection of investor's rights in these countries may be one explanation for this phenomenon.

2.4 Convergence of Laws and Real Events after the Millennium

Despite the above mentioned fundamental historical and judicial differences between the common law and civil law legal systems, comparative law has long been concerned with a trend of convergence between the different legal systems (Duca, 1991). By convergence academics mean the evolution of the legal institutions of different legal systems, where the legal institution of one system resembles the other and the legal norms, principles, and academic comments of both are used in equal measure and are regarded with equal authority (Da Cruz, 1993). Convergence between areas of common law and civil law is not a new phenomenon. (Glenn, 2000). However, according research by Lele & Siems (2006), the convergence between common law and civil law has increased considerably over the past decade. In their research they conclude: "the claims that there are deep differences between shareholder protection in the Civil Law and the Common Law legal origin countries seem to wither away. Finally, we found that convergence in shareholder protection has been taking place since 1993 and has increased considerably since 2001". These findings are interesting regarding the studies of inter alia La Porta et al. (1997, 1998, 1999, & 2002), that will be discussed in the next chapters. These studies show significant differences in firm valuations, ownership structures and external finance between countries of different legal origins.

An important factor behind the convergence of the two most powerful legal system is the ongoing internationalization and globalization in the legal world. Nearly all businesses have to deal with cross border aspects these days. The convergence of legal systems has helped to facilitate international transactions, increase the general welfare, promote the diffusion of culture, and has led to international understanding (Funken, 2003). An aspect of the convergence that has influenced the strength of investor protection in civil law countries, is the rise of judicial activism by civil law judges. Nowadays, the traditional concept that civil law judges are not as judicially active as their common law counterparts and rather simply mechanically apply legal rules cannot withstand closer scrutiny (Merryman, 2004).

Especially since the beginning of the 21st century, civil law judges have moved away from the old French revolutionary ideal of judicial disempowerment and have been actively making law (Funken, 2003). This increasing status of the civil law judge as an actual lawmaker is also likely to have a negative effect on the importance of legal academics in civil law countries. Their role in the development of civil law has diminished over the past decade. In some of the fastest growing areas of the law, such as international commercial law and intellectual property law, most developments take place through practitioners working in that field, such as lawyers or arbitrators and without academics. Their expertise and practical experience carries more weight than theoretical academic writings. The more practical approach to the development of civil law has also strengthened the protection of investors in civil law countries (Hermida, 2004).

Apart from the increased global trend of convergence between common law and civil law in the 21st century, also certain real events after the millennium have had an important impact on investor protection in both common law and civil law countries. On June 6, 2001 the European Commission introduced the Committee of European Securities Regulators (CESR). The CESR has a mandate to take an active role in building a common supervisory culture in all member states. The premier goal of the CESR is to achieve high and consistent standards of supervision throughout the EU. The CESR has been responsible for various regulations to enhance investor protection in the EU. The introduction of the CESR and its regulations have had a positive effect on the investor sentiment in the EU. Consequently, this may have enhanced the value of EU firms and led to broader capital markets. Also other EU regulations such as the 2003 financial collateral directive to harmonize the EU regime on the receipt and enforcement of financial collateral and the 2004 markets in financial instruments directive that governs the provisions of financial instruments, have had a positive influence on the financial markets of the EU. Also for Australia 2001 was an important year, as its financial services reform act to improve the regulations of the financial services industry, was introduced. The act also introduces profound disclosure responsibilities for firms. In 2002 the United States introduced the Sarbanes-Oxley (Sox) act in response to several accounting and corporate scandals, including Enron, Tyco and WorldCom. In the US Senate the act was also known as the "Public Company Accounting Reform and Investor Protection Act". Besides auditor and reporting related sections, the act also includes various regulations to restore confidence in securities analysts and enhance investor protection. The act has had an important positive effect on the state of the US's corporate governance framework. Most notably the Sox act requires listed companies to have a majority of independent directors in their board of directors and more advanced internal control systems.

2.5 Investor Protection and Ownership Structures

Regardless of the convergence between common law and civil law and the different events that are mentioned in the previous section, there are still important differences in investor protection between the legal origins. The differences in investor protection between common law and civil law countries

may have implications for the ownership structures of firms in these countries. The question arises whether in an environment with weak shareholder protection, control over a firm is concentrated in the hands of controlling shareholders or dispersed between various smaller investors. This question has been studied by several academics. In countries with inferior investor protection, it is easier for insiders to expropriate investors. La Porta et al. (1998) argue that because of that, large shareholders who monitor a firm's management, may need to own more capital to be able to exercise their control rights and avoid being expropriated by the firm's management. Moreover, when investor's rights are poorly protected, small investors may only be willing to buy shares at very low prices. In that case, it would become unattractive for firms to issue new shares, which would indirectly stimulate ownership concentration (La Porta et al., 1998). Their view is shared by Bennedsen and Wolfenzon (2000) who argue that when investor protection is weak, allocating control over several large investors can serve as a commitment to limit expropriation of smaller investors. Later research by La Porta et al. (2002) shows that higher ownership concentrations over different large investors, as a commitment to limit investor expropriation, is more common in civil law countries where investor protection is weaker. Research by Dyck and Zingales (2004) tries to estimate what factors influence the private benefits of control. They find that tax compliance, strong accounting standards, the rule of law and the investor protection by corporate governance systems have a negative influence on the private benefits of a controlling party.

Other empirical studies on corporate ownership also support the importance of investor protection. The effects of investor protection on corporate ownership have been studied on several occasions, both for individual countries such as Germany (Gorton & Schmid, 2000) and Italy (Barca, 1995) as for different countries together, such as the OECD countries (The European Corporate Governance Network, 1997). Nevertheless, the most notable research on corporate ownership and investor protection is done by La Porta et al. (1998, 1999). La Porta et al. (1998) studied corporate ownership in 49 different countries. Whereas La Porta et al. (1999) studied corporate ownership of the largest companies in 27 of the world's wealthiest countries. With the first article focusing on legal origin and corporate ownership. Results from both these studies show that in general firms in countries with weaker investor protection have more concentrated ownership than firms in countries with stronger investor protection. In countries with weak investor protection, firms tend to be controlled by the state or by families that either founded or acquired the firm. In countries with stronger investor protection, dispersed ownership and professional management control firms are more common. The difference in ownership structures is strongest between countries of French civil law origin and countries of common law origin (La Porta et al., 1998). Ownership patterns in East Asian countries have been studied by Claessens et al. (2000). In a sample with firms from 9 different East Asian countries, they find that in general East Asian firms are controlled by families. The top 10 families of 8 countries in the sample have control over between 18 and 58 percent of the total value of listed equity. Japan is an exception to this phenomenon. Claessens et al. argue that

this may have to do with the fact that Japan has stronger investor protection than the other countries in the sample.

Overall, various studies on corporate ownership in countries all over the world have come up with results in favor with the proposition that the legal environment influences a country's ownership structures. In general, countries with a common law legal origin are assumed to have better shareholder protection and show more dispersed ownership structures. Countries with a civil law legal origin have weaker shareholder protection and show more concentrated ownership structures. However, most of these studies are not very recent and conducted before or shortly after the millennium. As mentioned before, the more recent study by Lele & Siems (2006) observes an increased convergence between common and civil law after the millennium. Another study by Spamann (2010) uses data similar to the one used by La Porta et al. (1998) and questions the results of their study. Spamann finds less evidence that countries of common law legal origin have different ownership structures than civil law legal origin. The findings of Spamann (2010) and Lele & Siems (2006) make it interesting to research whether in more recent times civil law countries can still be associated with more concentrated ownership and common law countries with more dispersed ownership. Concluding from the literature in this section the following hypothesis can be formulated:

Hypothesis 1: Civil law origin countries have more concentrated ownership than common law origin countries.

2.6 Investor Protection and Corporate Valuation

In addition to the effects that investor protection has on ownership structures, academics have also found links between investor protection and corporate valuation. A legal environment with stronger investor protection is expected to boost the development of financial markets (La Porta et al., 2002). Strong investor protection will protect investors from expropriation and encourage investors to pay more for a firm's securities, which enhances firm value. Therefore, it will be more attractive for firms to issue securities in countries with stronger investor protection than in countries with weaker investor protection (La Porta et al., 1998).

Research by La Porta et al. (2002) has a sample of 27 of the world's wealthiest countries and uses Tobin's Q as a proxy for firm value to show that firms in countries with stronger investor protection have higher corporate valuations than firms in countries with weaker investor protection. They also show a relation between higher cash flow ownership by controlling shareholders and higher valuation of corporate assets. This relation is stronger in countries with weaker shareholder protection. Goetz & Schmid (2000) show a similar relation for a sample of German firms. They provide evidence that higher cash flow ownership by controlling shareholders is accompanied by higher valuations of corporate assets in Germany.

Until today, La Porta et al. (2002) are the only ones that have studied the direct relation between investor protection and corporate valuation and show that weaker investor protection is accompanied by lower firm valuations and vice versa. As mentioned before, common law countries are considered to have stronger investor protection than civil law countries. Therefore, one would expect firms in common law countries to have higher corporate valuations and firms in civil law countries to have lower corporate valuations. Again, the study by La Porta et al. that shows the connection between investor protection and corporate valuation is not very recent. Because more recent research by Lele & Siems (2006) argues that the deep differences between shareholder protection in the civil law and the common law legal origin countries seem to wither away, it is interesting to see if corporate valuations are still higher in common law countries. This study introduces Return on Assets (ROA) as another proxy for firm value to research whether legal origin also has an effect on the ROA of firms. Concluding from the literature in this section the following hypotheses can be formulated:

Hypothesis 2a: Firms in countries with legal regimes of common law origin have higher Tobin's Q values than firms in countries with legal regimes of civil law origin.

Hypothesis 2b: Firms in countries with legal regimes of common law origin have higher Returns on Assets than firms in countries with legal regimes of civil law origin.

2.7 Investor Protection and External Finance

As mentioned before, the level of investor protection that a country provides is an important determinant of the development of that country's financial market. Strong shareholder protection may boost a country's equity markets, both in terms of prices that are paid for securities and the number of firms that are listed. Moreover, strong creditor protection may enhance a country's debt market by encouraging market lending and bank lending. Research by La Porta et al. (1997) endorses these expectations. They show that in general the countries with the stronger investor protection also have more valuable debt and equity markets relative to a country's GNP, higher rates of initial public offerings (IPO's) and more listed domestic firms relative to a country's population than countries with weaker investor protection.

Differences in investor protection may be a reason why the debt and equity markets of the United States and the United Kingdom are enormous, while France and Germany have smaller debt and equity markets. Also between other countries in the world, there are huge differences in the size, breadth and valuation of capital markets (La Porta et al., 1997). A rather extreme example are Russian firms. They have nearly no access to external finance and their shares are worth hundred times less than Western companies that have comparable assets (Boycko, Shleifer, & Vishny, 1993).

La Porta et al. (1997) studied the ability of firms in different countries with different legal environments to raise external finance through both debt and equity. They argue that the willingness of a firm to issue equity or attract debt finance, depends largely on the terms at which the firm can obtain these forms of

external finance. When a firm issues equity, these terms are determined by the valuation of the equity relative to the firm's cash flows. When a firm attracts debt, these terms are reflected by the cost of funds. If the terms on which the firm can attract debt or issue equity are good, the firm is likely to attract or issue more. The capital markets of countries that offer firms better terms to raise external finance should have equity and debt markets that are accessed more by firms and have higher capitalizations. Stronger legal protection enables investors to offer firms their money on better terms, as they are less likely to be expropriated. Especially the higher fines and more extensive ways to seek damages in common law countries, when contracts are breached, give investors the feeling they are protected against investor expropriation (Holmes, 2009). This is why La Porta et al. (1997) believe that countries with strong investor protection have higher valued and broader debt and equity markets. They examined external finance across 49 countries as a function of the quality of investor protection, law enforcement and the origin of their laws. La Porta et al. show that a country's legal environment has an impact on the breadth and size of its debt and equity markets and the number of listed domestic firms. French civil law countries are considered to have the weakest investor protection and also the least developed equity markets, especially when they are compared with common law countries.

The study by La Porta et al. (1997) is conducted with data from 1994 and is far from recent. Therefore, it is interesting to see whether the relation between legal environments and the breadth and size of debt and equity markets still exists these days. Especially because more recent research indicates that the differences in shareholder protection between the different legal system seem to wither away (Lele & Siems, 2006). Also, the study by Spamann (2010) questions the relation between debt and equity market capitalization and legal origin.

This study introduces two other external finance metrics than have not been reviewed before. The first is the risk premium on lending. As investors can offer their money on better terms when investor protection is stronger, one would expect lower risk premia on lending in common law countries. Moreover, the total value of stocks traded to a country's GNP, as another measure of the broadness of a country's equity market, is expected to be higher in common law countries. Concluding from the literature in this section the following hypotheses can be formulated:

Hypothesis 3a: Countries with legal regimes of common law origin have larger debt market capitalizations as a percentage of GNP than countries with legal regimes of civil law legal origin.

Hypothesis 3b: Countries with legal regimes of common law origin have larger equity market capitalizations as a percentage of GNP than countries with legal regimes of civil law origin.

Hypothesis 3c: Countries with legal regimes of common law origin have more listed domestic firms to its population (in millions) than countries with legal regimes of civil law origin.

Hypothesis 3d: Countries with legal regimes of common law origin have higher risk premia on lending than countries with legal regimes of civil law origin.

Hypothesis 3e: Countries with legal regimes of common law origin have higher total values of stocks traded as a percentage of GNP than countries with legal regimes of civil law origin.

3. Data

3.1 Sample and Approach

In this study, a sample of 49 countries from around the world is used. The sample consists of 18 countries with a legal system of common law origin, 21 countries with a legal system of French civil law origin, 5 countries with a legal system of German civil law origin and 4 countries with a legal system of Scandinavian civil law origin. The countries in the sample are similar to the countries used in the study by La Porta et al. (1998) in order to test the significance of legal impact after the millennium.

To research the effects of legal origin on corporate valuation and external finance, this study uses a sample period between 2001 and 2012. 2001 is chosen as the beginning of the sample period as this year marks the beginning of the increased convergence between common and civil law that is observed by Lele and Siems (2006). 2001 is also the year that the Committee of European Securities Regulators (CESR) is introduced. Moreover, various other important events that affect investor protection take place shortly after the millennium, such as the introduction of the Australian financial services reform act and the introduction of the Sox act in the United States. As data on several important variables that this study uses becomes less available after 2012, this year is chosen as the end of the sample period. In the research on the effects of legal origin on external finance, all 49 countries of the sample are used. To research the effects of legal origin on corporate valuation, from each country the ten largest publicly-traded domestic firms based on the 2001 total assets are selected. Any utilities or financial firms are excluded from the sample. Because data from the ten largest firms is unavailable for Ecuador, Uruguay and Zimbabwe, these countries are removed from the sample of the legal origin and corporate valuation research. This results in a sample of 460 firms from 46 countries.

Time series data on ownership structures is unavailable in the databases that could be accessed for the research of this study. The data on firm's ownership structures that is available is static and is either from 2009 or 2010. To research the effects of legal origin on ownership structures, the ten largest publicly-traded domestic firms based on the 2009 total assets are selected. Again, any utilities or financial firms are excluded from the sample. Data on ownership structures from the ten largest firms is unavailable for Colombia, Ecuador, Uruguay, Venezuela and Zimbabwe. Therefore, these countries are removed from the sample. The result is a sample of 440 firms from 44 countries.

The data on different external finance measures is extracted from the International Financial Statistics Database and data on a country's Gini Coefficient, GNP, GNP per capita, GDP growth and Rule of Law

are collected from the World Bank Database. Information on a country's Anti-director Rights, Creditor Rights and whether its legal system has the One Share One Vote principle is obtained from papers by Spamann (2010) and Djankov et al. (2005), as these papers provide more up-to-date information on these variables than the law and finance literature from La Porta et al. (1998). The data on a country's legal origin is obtained from the study by Reynolds & Flores (1989), as the legal origin of a country has obviously remained unchanged since 1989. Furthermore, the firm specific information on a firm's Tobin's Q and also various other ratios is all collected from the Worldscope Database.

3.2 Dependent Variables

The following dependent variables are used to measure the effects that legal origin has on ownership structures, corporate valuation and external finance:

3.2.1 Mean Ownership

The average percentage of the share capital owned by the two largest shareholders in the ten largest publicly-traded domestic firms in a given country. Financial firms and utilities firms are excluded.

Source: Worldscope Database.

3.2.2 Debt/GNP

Ratio of the sum domestic credit to the private sector to gross national product (GNP). Domestic credit to the private sector is used as a proxy for a country's debt market capitalization. Domestic credit to private sector refers to financial resources provided to the private sector by financial corporations, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. The financial corporations include monetary authorities and deposit money banks, as well as other financial corporations for which data is available. Other financial corporations include: finance and leasing companies, foreign exchange companies, insurance corporations, money lenders and pension funds. Source: International Financial Statistics Database.

3.2.3 Equity Market Cap/GNP

The ratio of a country's equity market capitalization of listed domestic companies to its gross national product (GNP). The equity market capitalization refers to the total market value of all outstanding shares of the listed domestic companies in a country. The equity market capitalization is calculated by taking the product of all the outstanding shares of a country's listed domestic companies and the market price of these shares. Source: International Financial Statistics Database.

3.2.4 Listed Domestic Firms/Pop

The ratio of the number of domestic firms that are listed in a given country to that country's population (in millions). This variable is an indicator of the broadness of a country's equity market. Source: International Financial Statistics Database.

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3.2.5 Return on Assets (ROA)

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The ratio of a firm's net income to its total assets. The return on assets ratio indicates how profitable a firm is relative to its total assets. Return on Assets is used as a measure for firm value. The return on assets is expected to vary across different industries. In general, capital intensive industries yield a lower ROA than shoestring operations such as software companies. To control for the possible differences between industries, industry dummies are used. Source: Worldscope Database.

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3.2.6 Risk Premium on Lending

The risk premium on lending is the interest rate charged by banks on loans to customers in the private sector minus the risk free interest rate, which is reflected by the treasury bill interest rate at which short-term government securities are issued or traded in the market. In some countries this spread may be negative, indicating that the market considers its best corporate clients to be lower risk than the government. Source: International Financial Statistics.

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3.2.7 Tobin's Q

The ratio of the market value of assets to their replacement value. The market value of assets is proxied by the market value of common stock. The replacement value of assets is proxied by the book value of assets. Tobin's Q is a commonly used measure for firm valuation (La Porta et al., 2002). Source: Worldscope.

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3.2.8 Total Value of Stocks Traded/GNP

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The ratio of total value of stocks traded to a country's gross national product in a country. The total value of stocks traded refers to the total value of shares that were traded on a country's equity market in a given year. This metric complements the equity market capitalization value by showing whether the size of a country's equity market is matched by trading volumes. Source: International Financial Statistics.

3.3 Independent Variables

The following variables are used as independent variables in this study measuring the effects of the Civil Law Dummy, Anti-director Rights, Rule of Law, the One Share One Vote principle and Creditor Rights on the dependent variables:

3.3.1 Anti-director Rights

A country's rank in the anti-director rights index. This index is formed by adding a 1 when: (1) the country allows shareholders to send their proxy vote per email; (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting; (3) cumulative voting or proportional representation of minorities on the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) when the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting is less than or equal to 10%; (6) when shareholders have preemptive rights that can only be waived by a shareholders meeting. The index ranges from 0 to 6. The presence

of more anti-director rights in a country (a higher score in the index), implicates stronger investor protection. The anti-director rights index is included in this study, because La Porta et al. (1997, 2002) also include this variable in their study as an alternative measure of investor protection. They show that more anti-director rights are positively related to external finance and that the presence of more anti-director rights results in lower ownership concentrations. Source: Spamann (2010).

3.3.2 Civil Law Dummy

A dummy variable that equals 1 if the origin of the country's company law or commercial code is civil law and 0 otherwise. As mentioned in the literature review of this study various academics have shown that a country's legal origin is related to firm value, external finance and ownership structures (La Porta et al., 1997, 1998 & 2002; Claessens et al., 2000, 2002). Source: Reynolds & Flores (1989).

3.3.3 Creditor Rights

The country's rank in the creditor rights index. This index is formed by adding a 1 when: (1) the country imposes restrictions, such as creditors' consent or minimum dividends, to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) the debtor does not retain the administration of its property pending the resolution of the reorganization; (4) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm. The index ranges from 0 to 4. The presence of more creditor rights in a country (a higher score in the index), implicates stronger investor protection. The creditor rights index is included in this study, because La Porta et al. (1997) also include this variable in their study as an alternative measure of investor protection. They show that the number of creditor rights present in a country is positively related to a country's debt capital market. Source: Djankov et al. (2005).

3.3.4 One Share One Vote

Equals one if the company law of commercial code of the country requires the ordinary shares to carry one vote per share, and zero otherwise. Equivalently, this variable equals one when the law prohibits the existence of both multiple-voting and non-voting ordinary shares and does not allow firms to set a maximum number of votes per shareholder irrespective of the number of shares the shareholder owns, and zero otherwise. When these regulations are present in a country, the country is assumed to have stronger investor protection. The one share one vote variable is included in this study, because La Porta et al. (1997, 2002) also include this variable in their study as an alternative measure of investor protection. They show that the one share one vote regulations are related to a country's ownership structures and its external finance. Source: Djankov et al. (2005).

3.3.5 Rule of Law

The rating of a country in the rule of law index from the World Bank. The World Bank's rule of law index captures perceptions of the extent to which a country's residents have confidence in and abide by

the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The index has a range from -2.5 to 2.5, with -2.5 being the lowest possible rule of law score in the index and 2.5 the highest. The rule of law index is included in this study to proxy the quality of a country's enforcement of law. Source: World Bank Governance Indicators.

3.4 Control Variables

In addition to the dependent and independent variables, the regressions of this study will include a number of control variables. Control variables are included in the regressions to test the effect of the concentration variables, above and beyond the effect of the control variables. They are variables that are associated or that are known to relate to ownership structures, firm valuation and external finance.

3.4.1 Crisis dummy

Dummy variable to control for the effects of the international financial crisis that started in 2008 with the bankruptcy of Lehman Brothers and had an aftermath until the beginning of 2012 (Adams, 2012). The dummy variable equals 1 in the years of the sample in which the crisis was present (2008-2012) and 0 in the other years.

3.4.2 Debt/Assets

The annual ratios of a firm's book value of long time liabilities to total assets. This variable is added to control for a firm's debt level. Other studies also include this variable as a control, because debt relates to firm value (Black et al., 2002). Berger & Ofek (1995) argue that when the debt level becomes too high, bankruptcy risks can arise. That would negatively influence firm value. Source: Worldscope Database.

3.4.3 EBIT/Sales Ratio

The ratio of a firm's annual earnings before interest and tax to the firm's net sales revenue. This variable represents profitability and is added to control for this. Profitability is a known determinant of firm value (Berger & Ofek, 1995). In general, a firm's profitability relates positively to that firm's valuation. Source: Worldscope Database.

3.4.4 Lagged GDP Growth

The one year lagged percentage growth of a country's gross domestic product. This control variable is likely to affect valuations and the market breadth of capital markets. As prior research has shown, countries with higher GDP growth rates have higher valuations and broader capital markets (Berger & Ofek, 1995; La Porta et al., 1997) Source: World Bank Database.

3.4.5 Gini Coefficient

The Gini coefficient of a country. The Gini coefficient is a measure of statistical dispersion and represents the income distribution of a country's residents. The Gini coefficient measures the inequality

among a country's levels of income. A Gini coefficient of zero expresses perfect equality, where all residents have the same income. A Gini coefficient with a value of 1 expresses maximal income inequality among a country's residents. The Gini coefficient is added to the ownership structure regressions because research by La Porta et al. (1998), shows that countries with more unequal income distributions have higher ownership concentrations. Source: World Bank Database.

3.4.6 Log GNP and Log GNP per Capita

The logarithm of a country's gross national product and gross national product per capita in constant dollars. A country's gross national product (GNP) is an estimate of total value of all the final products and services that are annually produced by the means of production owned by a country's residents. A country's gross national product per capita is that country's GNP divided by the country's population. GNP and GNP per capita are known to relate to ownership structures as La Porta et al. (1997; 1998) argue that richer countries (with higher GNPs per capita) may have different ownership patterns and countries with larger economies (with higher GNP's) have larger firms, and might therefore have lower ownership concentrations and larger capital markets. Source: World Bank Database.

3.4.7 Growth in Sales and R&D/Sales

Similar to the research by La Porta et al. (2002), this study uses the average annual percentage growth in lagged sales for up to three years depending on data availability. Moreover, a firm's annual research and development expenditures over sales ratio are used. Black et al. (2002) show that firm value is positively related to a firm's growth prospects and intangible assets. Therefore, growth in sales and R&D/Sales are added to the regressions to control for growth prospects. Source: Worldscope.

3.4.8 Industry Dummies

Dummy variables based on two digit Standard Industrial Classification Codes (SIC). The dummy variables equals 1 if a firm operates in a certain industry (construction, mining, services etc.) and 0 when this is not the case. The two digit SIC codes distinguish between 10 different main industries. As the sample does not contain any public firms, nine of these main industries remain. This study adds industry dummies in its regression models to control for industry fixed effects because prior studies have found that the industry in which a firm operates, influences firm value (Black et al., 2002). An overview of the different industries is provided in table XVIII in the Appendix. Source: Worldscope Database.

3.4.9 LN Total Assets

The natural logarithm of a firm's total assets. A firm's total assets are the final amount of all gross investments, cash and equivalents, receivables, and other assets as they are presented on the firm's balance sheet. LN total assets is a measure of firm size. Firm size is likely to affect both the firm's valuation and its ownership structure. In general, larger firms receive higher valuations and larger firms may have more dispersed ownership structures (Berger & Ofek, 1995; Fama & French, 2002). It is a

common practice to control for firm size using LN total assets (Stulz & Shin, 2000; Black et al., 2008)

Source: Worldscope Database.

3.5 Descriptive Characteristics

The following section will provide various descriptive characteristics of the variables used in this study.

For each of the three possible effects of legal origin that are studied, these descriptive characteristics include an overview of the data, an univariate analysis, summary statistics and a correlation matrix.

3.5.1 Descriptive Characteristics Ownership Structures

Table I

Data Overview and Univariate Analysis Ownership Structures

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Average values of all variables by country for the period 2009-2010 and an univariate analysis of the variables used in the ownership structures regression models. The definition for each of the variables in the table can be found in sections 3.2, 3.3 and 3.4. The levels of significance of each of the T-statistics coefficients are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Country	Mean Ownership	Anti-director Rights	One Share One Vote	Creditor Rights	Rule of Law	Log GNP	LN Total Assets	Gini
Australia	0,37	4	0	3	1.75	11.92	16.85	0.18
Canada	0,40	4	0	1	1.81	12.12	16.72	0.17
Hong Kong	0,59	4	0	4	1.51	11.51	16.60	0.20
India	0,43	4	1	2	-0.01	12.70	16.32	0.31
Ireland	0,22	4	0	1	1.76	11.21	16.15	0.33
Israel	0,58	4	1	3	0.86	11.32	15.71	0.21
Kenya	0,50	3	0	4	-1.02	10.98	12.51	0.28
Malaysia	0,47	4	0	3	0.51	11.74	15.75	0.23
New Zealand	0,40	5	0	4	1.90	11.11	14.17	0.20
Nigeria	0,53	4	1	4	-1.17	11.85	13.26	0.22
Pakistan	0,46	5	1	1	-0.79	11.86	13.90	0.15
Singapore	0,44	4	0	3	1.64	11.51	15.89	0.19
South Africa	0,26	5	0	3	0.10	11.76	15.71	0.37
Sri Lanka	0,40	4	0	2	-0.07	11.20	12.57	0.18
Thailand	0,56	4	0	2	-0.21	11.91	14.88	0.40
United Kingdom	0,15	5	0	4	1.74	12.36	18.24	0.35
United States	0,34	2	0	1	1.60	13.17	17.89	0.20
Common Law Avg	0.42	4.06	0.24	2.65	0.70	11.78	15.48	0.24
Argentina	0,64	3	0	1	-0.66	11.84	14.20	0.45
Austria	0,37	4	0	3	1.80	11.54	15.60	0.31
Belgium	0,44	2	0	2	1.36	11.63	16.33	0.29
Brazil	0,54	5	0	1	-0.11	12.42	16.58	0.27
Chile	0,53	5	1	2	1.30	11.44	15.98	0.26
Denmark	0,35	4	0	3	1.91	11.36	15.94	0.29
Egypt	0,42	4	0	2	-0.09	11.89	14.76	-
Finland	0,31	4	0	1	1.98	11.31	16.08	0.28
France	0,44	5	0	0	1.47	12.37	18.18	0.17
Germany	0,37	4	0	3	1.63	12.51	18.44	0.31
Greece	0,41	3	1	1	0.61	11.51	15.03	0.34
Indonesia	0,55	4	1	2	-0.62	12.27	14.93	-
Italy	0,54	4	1	2	0.36	12.31	17.65	0.34
Japan	0,14	5	1	2	1.31	12.64	18.43	0.18
Jordan	0,40	3	1	1	0.26	10.82	12.87	0.34
Korea Rep.	0,35	6	1	3	0.98	12.16	17.46	0.27
Mexico	0,46	3	0	0	-0.59	12.23	16.00	0.24
Netherlands	0,33	4	0	3	1.81	11.87	17.13	0.29
Norway	0,39	4	0	2	1.90	11.45	15.88	0.26
Poland	0,67	5	1	0	-0.63	11.41	13.87	0.47
Philippines	0,64	5	0	1	-0.59	11.82	15.18	0.22
Portugal	0,48	4	0	1	1.04	11.43	15.81	0.35
Spain	0,37	6	0	2	1.15	12.17	17.57	0.36
Sweden	0,31	4	0	1	1.96	11.59	16.41	0.27
Switzerland	0,42	3	0	1	1.76	11.61	17.05	0.33
Taiwan	0,24	5	0	2	-	-	16.40	-
Turkey	0,63	4	0	2	0.11	12.04	15.63	0.39
Civil Law Avg	0.44	4.15	0.30	1.63	0.82	11.83	16.12	0.32
Sample Avg	0.43	4.11	0.27	2.02	0.77	11.81	15.87	0.28
Test of Means (T-Statistics)								
Common vs Civil	-0.02	-0.09	-0.06	1.02**	-0.12	-0.05	-0.65***	0.07***

179 Table I provides an overview of all the values of the variables used in the ownership structures regressions. The table organizes all 44 countries by their legal origin and shows the average values by

country as well as the common, civil and sample averages. At the bottom of the table a univariate analysis is conducted in which the common and civil law means are tested.

As can be seen in the table, on average there is a small difference in Mean Ownership between common and civil law countries. In the common law countries, the average stake of the two largest shareholders is 42% against 44% in the civil law countries. The civil law countries score slightly better with regard to the One Share One Vote Dummy, Anti-director Rights, Rule of Law, Log GNP and LN Total Assets variables. However, only the difference in LN Total Assets is significant at the 10% level. Common law countries score better with regard to the Mean Ownership, Creditor Rights and Gini Coefficient variables. The differences in Creditor Rights and Gini Coefficient are significant at least at the 10% level. The difference in Mean Ownership is insignificant. Therefore, the univariate analysis of the ownership structure variables does not confirm the hypothesis that civil law countries have more concentrated ownership structures than common law countries. Nevertheless, a simple comparison of the means of all variables is likely to omit important effects. The regression models of this study make various additional assumptions and predictions.

Table II

Summary Statistics Ownership Structures

Summary statistics for the variables used in the ownership structures regressions. Descriptions of the variables can be found in sections 3.2, 3.3 and 3.4.

Variable	Mean	Median	Standard Deviation	25 th Percentile	75 th Percentile	Skewness	Kurtosis	Number of Obs.
Mean Ownership	0.43	0.42	0.13	0.36	0.53	0.60	2.46	44
Civil Law Dummy	0.61	-	-	-	-	-	-	-
Anti-director Rights	4.11	4.00	0.87	4.00	5.00	-0.22	3.40	44
Creditor Rights	2.02	2.00	1.13	1.00	3.00	0.15	2.18	44
One Share One Vote Dummy	0.27	-	-	-	-	-	-	-
Rule of Law	0.78	1.05	1.01	0.09	1.75	-0.40	1.70	43
Log GNP	11.81	11.82	0.50	11.44	12.17	0.40	2.92	43
LN Total Assets	15.87	15.96	1.52	14.98	16.79	-0.40	2.75	44
Gini	0.28	0.28	0.08	0.21	0.34	0.34	2.57	41

Table II presents the summary statistics of the ownership structure variables. Interesting values to look at regarding the distribution of the variables are the skewness and kurtosis. The skewness of a variable is a measure of symmetry. The skewness of a variable that has a normal distribution of values around the mean is zero. Very high or low skewness values mean a lack of symmetry. The kurtosis of a variable measures the peakedness of that variable. The kurtosis of a variable that has a normal distribution should be around three. High or Low kurtosis values indicate the presence of extreme values around the mean (outliers).

When looking at the summary statistics of the ownership structures variables, the mean value of the mean ownership value is interesting. The mean of 0.43 indicates that on average the two largest

shareholders of all the country's ten largest firms have an ownership stake of 43%, which is quite high. Moreover, the distribution of the Log GNP and LN Total Assets variables seem to be close to the normal distribution. The reason for this is that these variables are the logarithm and natural logarithm of GNP and Total Assets. This is done intentionally as the GNP of the countries in the sample varies a lot. Countries such as Uruguay and Zimbabwe have a GNP that is more than 100 times smaller than the GNP of the United States. Not taking the logarithm of GNP would have resulted in a very abnormal distribution of the variable. Also the value of firm's Total Assets tends to vary a lot between firms and between countries.

Table III

Correlation Matrix Ownership Structures

Correlation matrix with all the correlation coefficients between the variables used in the ownership structures regressions.

Variable	Mean Ownership	Civil Law Dummy	Anti-director Rights	Creditor Rights	One Share One Vote	Rule of Law	Log GNP	LN Total Assets	Gini
Law Dummy	0.08	1.00	-	-	-	-	-	-	-
Anti-director Rights	0.02	0.03	1.00	-	-	-	-	-	-
Creditor Rights	-0.27	-0.33	-0.08	1.00	-	-	-	-	-
One Share One Vote	0.43	0.09	0.16	0.04	1.00	-	-	-	-
Rule of Law	-0.39	0.11	-0.12	0.18	0.41	1.00	-	-	-
Log GNP	-0.06	-0.08	-0.06	-0.02	-0.18	-0.05	1.00	-	-
LN Total Assets	0.57	0.20	0.01	0.07	-0.36	0.27	0.57	1.00	-
Gini	0.20	0.42	-0.01	0.06	0.01	-0.11	-0.13	-0.04	1.00

Table III shows the correlation matrix of all the variables that are used in the ownership structures regressions. When the Log GNP per Capita variable is added to the correlation matrix, the correlation coefficients of this variables indicate a strong linear relationship between the Log GNP per Capita and the Rule of Law and LN Total Assets variables. Therefore, the Log GNP per Capita Variable is removed from the dataset and not added to the ownership structures regression models. In the correlation matrix three values stand out. The first is the correlation coefficient of 0.57 between LN Total Assets and Log GNP. This coefficient indicates a moderate uphill linear relation between these two variables. Moreover, the correlation coefficient between the Civil Law Dummy and Creditor Rights (0.33) and between LN Total Assets and the One Share One Vote Dummy (0.36) indicate the presence of weak uphill linear relations. However, all these values are statistically no reason for concern and the variables in question do not have to be removed from the dataset.

3.5.2 Descriptive Characteristics Corporate Valuation

Table IV

Univariate Analysis and Data Overview Corporate Valuation

Average values of all variables by country for the period 2001-2012 before any winsorizing is applied and an univariate analysis of the variables used in the corporate valuation regression models. The definition for each of the variables in the table can be found in sections 3.2, 3.3 and 3.4. The levels of significance of each of the T-statistics coefficients are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Country	Tobin's Q	Return on Assets	LN Total Assets	EBIT/Sales	R&D/Sales	Debt/Assets	Growth in Sales	Anti-director Rights
Australia	2.99	0.07	15.86	0.32	0.003	0.23	0.20	4
Canada	2.48	0.05	15.76	0.12	0.038	0.16	0.29	4
Hong Kong	1.15	0.06	16.15	0.44	0.045	0.19	0.05	4
India	2.57	0.07	14.53	0.16	0.008	0.21	0.22	4
Ireland	3.36	0.06	15.94	0.14	0.034	0.24	0.15	4
Israel	2.44	0.05	14.70	0.19	0.047	0.28	0.20	4
Kenya	2.62	0.12	12.27	0.25	-	0.31	-	3
Malaysia	1.40	0.04	15.02	0.24	0.002	0.25	0.24	4
New Zealand	3.04	0.06	13.24	0.30	0.001	0.32	0.30	5
Nigeria	3.38	0.07	12.75	0.15	-	0.14	-	4
Pakistan	1.82	0.05	13.28	0.18	0.004	0.22	0.11	5
Singapore	1.39	0.04	15.23	0.20	0.100	0.17	0.14	4
South Africa	2.70	0.11	15.03	0.20	0.003	0.14	0.35	5
Sri Lanka	1.56	0.06	12.12	0.18	0.001	0.15	0.11	4
Thailand	1.75	0.07	14.56	0.22	0.008	0.37	0.18	4
United Kingdom	3.28	0.08	17.84	0.13	0.037	0.18	0.27	5
United States	4.14	0.07	17.74	0.14	0.120	0.19	0.18	2
Common Law Avg	2.43	0.07	15.04	0.21	0.03	0.22	0.20	4.05
Argentina	1.64	0.03	14.10	0.19	0.011	0.19	0.02	3
Austria	1.55	0.04	14.67	0.27	0.009	0.23	0.24	4
Belgium	1.91	0.06	15.52	0.29	0.053	0.14	0.09	2
Brazil	2.10	0.08	15.52	0.26	0.013	0.26	0.25	5
Chile	1.75	0.05	15.32	0.29	0.001	0.23	0.17	5
Colombia	1.07	0.05	11.99	0.26	-	0.09	0.09	4
Denmark	2.72	0.05	14.81	0.10	0.059	0.16	0.21	4
Egypt	3.39	0.10	13.72	0.28	-	0.22	0.23	4
Finland	1.68	0.06	15.96	0.08	0.021	0.18	0.09	4
France	2.50	0.03	17.83	0.06	0.032	0.20	0.17	4
Germany	1.68	0.02	18.46	0.07	0.034	0.19	0.09	5
Greece	2.40	0.06	13.98	0.19	0.001	0.18	0.25	4
Indonesia	1.49	0.05	14.38	0.20	0.003	0.31	0.14	4
Italy	2.18	0.04	16.76	0.22	0.025	0.25	0.18	4
Japan	1.60	0.02	18.26	0.08	0.034	0.27	0.05	5
Jordan	2.35	0.04	12.83	0.06	0.002	0.16	0.10	3
Korea. Rep.	1.13	0.03	17.06	0.10	0.010	0.16	0.20	6
Mexico	1.75	0.06	15.54	0.15	0.009	0.21	0.13	3
Netherlands	3.10	0.05	16.51	0.09	0.065	0.23	0.09	4
Norway	1.89	0.00	14.11	0.08	0.035	0.18	0.14	4
Peru	1.68	0.08	13.21	0.24	-	0.14	0.14	5
Philippines	1.48	0.04	14.50	0.24	0.014	0.25	0.20	5
Portugal	2.15	0.02	15.20	0.11	0.002	0.31	0.24	4
Spain	2.45	0.05	16.81	0.20	0.006	0.28	0.27	6
Sweden	1.94	0.06	16.20	0.19	0.036	0.13	0.08	4
Switzerland	3.01	0.05	16.68	0.13	0.069	0.15	0.00	3
Taiwan	2.32	0.09	15.92	0.17	0.020	0.22	0.39	5
Turkey	2.15	0.06	14.70	0.15	0.008	0.15	0.31	4
Venezuela	0.46	0.03	11.99	0.21	-	0.11	-0.02	2
Civil Law Avg	1.98	0.05	15.36	0.17	0.03	0.20	0.16	4.10
Sample Avg	2.14	0.05	15.25	0.19	0.03	0.21	0.17	4.09
Test of Means (T-statistics)								
Common vs Civil	0.44*	0.02*	-0.32*	0.04*	-0.00	0.02*	0.04*	-0.04***

Table IV organizes countries by their legal origins and presents preliminary evidence on the relation between a country's legal origin and corporate valuation in 46 countries. For every country, the table presents the average value of all variables by country for the period 2001-2012 before any winsorizing has been applied. The table also presents the common law, civil law and sample averages. At the bottom of the table, the means are tested.

The table shows that on average common law countries have higher Tobin's Q and Return on Assets values than civil law countries. Moreover, common law countries have higher EBIT/Sales and Debt/Assets ratios on average, as well as a higher 3 year average growth in sales rate. Civil law countries are slightly higher in the R&D/Sales ratio and also outperform common law countries in the average natural logarithm of total assets and the average number of anti-director rights present in a country. All the differences between common and civil law countries are significant at least at the 10% level except for the difference in the R&D/Sales ratio, which is insignificant. The preliminary evidence that the data overview table provides confirms the hypotheses of this study that common law countries have higher Tobin's Q and Return on Assets values than civil law countries. However, the regression models of this study make various additional assumptions and predictions. It is likely that simply comparing the means of the two different legal origins omits important effects.

Table V

Summary Statistics Corporate Valuation

Summary statistics for the variables used in the corporate valuation regressions. If any percentage of winsorizing has been applied to a variable, this percentage is shown in the parentheses. Descriptions of the variables can be found in sections 3.2, 3.3 and 3.4.

Variable	Mean	Median	Standard Deviation	25 th Percentile	75 th Percentile	Skewness	Kurtosis	Number of Obs.
Tobin's Q (1%)	2.01	1.71	1.12	1.11	2.67	0.74	2.37	4988
Return on Assets (1%)	0.05	0.05	0.06	0.02	0.08	0.15	5.19	5210
Civil Law Dummy	0.63	-	-	-	-	-	-	5520
Anti-director Rights	4.09	4.00	0.88	4.00	5.00	-0.36	3.56	5520
LN Total Assets	15.25	15.31	1.83	14.05	16.45	-0.19	2.81	5208
EBIT/Sales (2%)	0.19	0.14	0.22	0.07	0.25	1.46	5.69	5098
R&D/Sales (2%)	0.03	0.01	0.04	0.00	0.03	1.86	5.48	1906
Debt/Assets	0.21	0.20	0.14	0.10	0.29	0.90	4.30	4952
Growth in Sales (2%)	0.17	0.13	0.26	0.04	0.24	1.43	5.72	4632
Crisis Dummy	0.40	-	-	-	-	-	-	5520

Table V presents the summary statistics of the variables that are used to study a possible relation between legal origin and corporate valuation. When looking at the skewness, kurtosis and means of these variables a few values stand out. The distribution of the LN Total Assets variable seems to be nearly perfect normally distributed with a skewness of -0.19 and a kurtosis of 2.81. This is the case because this variable is calculated by taking the natural logarithm of a firm's total assets. The natural logarithm is deliberately taken, because the total assets of firms tend to vary a lot, which would have resulted in a very abnormal distribution due to the large differences in total assets between firms. Tobin's Q shows a

mean value of 2.01, which suggests that on average the firms in the sample have market values of assets that are twice the replacement value of assets. This indicates that on average the firms in the sample are overvalued. However, overvaluation of firms is not uncommon especially for firms in technology industries. Furthermore, high opportunity costs of capital and growth opportunities can justify these high valuations of the firms in the sample. The Tobin's Q, Return on Assets, EBIT/Sales, R&D/Sales and Growth in Sales variables showed very high kurtosis values, indicating the presence of extreme values around the mean value. Although very high and low values of these variables are not uncommon, this study does use winsorizing to eliminate the influence of outliers on the results. On the Tobin's Q and Return on Assets variables, 1% winsorizing is applied and on the Return on Assets, EBIT/Sales, R&D/Sales and Growth in Sales variables 2% winsorizing. The percentages of winsorizing are chosen based on the skewness and kurtosis value before and after winsorizing. Different percentages of winsorizing are used in order to winsorize as little values as possible and still eliminate the influence of outliers. Winsorizing is preferred over trimming as it does not drop any observations, it replaces the outliers with values closer to the middle of the distribution.

Table VI

Correlation Matrix Corporate Valuation

Correlation matrix with all the correlation coefficients between the variables used in the corporate valuation regressions.

Variable	Civil Law Dummy	LN Total Assets	EBIT/Sales	R&D/Sales	Debt/Assets	Growth in Sales	Anti-director Rights	Crisis Dummy
Civil Law Dummy	1.00	-	-	-	-	-	-	-
LN Total Assets	0.22	1.00	-	-	-	-	-	-
EBIT/Sales	-0.18	-0.05	1.00	-	-	-	-	-
R&D/Sales	0.08	0.06	0.08	1.00	-	-	-	-
Debt/Assets	-0.05	0.17	-0.05	-0.26	1.00	-	-	-
Growth in Sales	-0.13	-0.07	-0.03	-0.10	-0.04	1.00	-	-
Anti-director Rights	-0.01	0.21	-0.00	-0.23	0.10	0.11	1.00	-
Crisis Dummy	0.03	0.10	-0.06	0.01	0.12	-0.02	0.09	1.00

The Correlation matrix of the corporate valuation regression variables is shown in table VI. As can be seen in the table the largest correlation coefficient exists between the Debt/Assets and R&D/sales variables with a value of -0.26. However, this value is no reason for any concern as it does not indicate the presence of a too strong linear relationship between the variables. Also for all other variables there is no suspicion of any strong linear relationship.

3.5.3 Descriptive Characteristics External Finance

Table VII

Data Overview and Univariate Analysis External Finance

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Average values of all variables by country for the period 2001-2012 and an univariate analysis of the variables used in the external finance regression models. The definition for each of the variables in the table can be found in sections 3.2, 3.3 and 3.4. The levels of significance of each of the T-statistics coefficients are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Country	Equity Market Cap/GNP	Total Stocks Traded/ GNP	4.4 Firms/Pop	Debt/ GNP	Risk Premium Lending	GDP Growth (-1)	Log GNP	Anti director Rights	One-Share One-Vote	Creditor Rights	Rule 12 Law
Australia	1.09	0.81	75.85	0.93	3.86	3.35	11.77	4	0	3	1.76
Canada	0.92	0.67	84.51	1.61	1.80	3.01	12.01	4	0	1	1.70
Hong Kong	3.78	1.61	154.15	1.13	4.38	4.84	11.35	4	0	4	1.38
India	0.12	0.11	4.70	0.08	-	6.26	12.45	4	1	2	0.12
Ireland	0.76	0.08	14.37	1.35	3.62	6.10	11.11	4	0	1	1.57
Israel	0.42	0.18	89.13	0.64	3.29	3.30	11.21	4	1	3	0.91
Kenya	0.07	0.01	1.48	0.07	9.36	3.14	10.81	3	0	4	-0.89
Malaysia	0.45	0.12	37.18	0.39	3.71	5.45	11.55	4	0	3	0.51
New Zealand	0.35	0.06	37.81	1.07	1.62	3.82	10.97	5	0	4	1.82
Nigeria	0.02	0.00	1.51	0.03	6.45	10.17	11.57	4	1	4	-1.34
Pakistan	0.06	0.19	4.52	0.05	-	4.89	11.69	5	1	1	-0.83
Singapore	0.80	0.52	106.91	0.55	4.24	5.61	11.29	4	0	3	1.57
South Africa	0.87	0.19	8.60	0.61	4.12	3.90	11.62	5	0	3	0.10
Sri Lanka	0.03	0.01	12.49	0.07	-0.09	4.34	10.99	4	0	2	0.21
Thailand	0.16	0.14	6.98	0.27	3.57	5.29	11.76	4	0	2	0.21
United Kingdom	1.24	0.86	43.33	1.49	0.14	2.98	12.29	5	0	4	1.65
United States	1.25	1.75	18.65	1.78	3.13	2.80	13.08	2	0	1	1.52
Zimbabwe	-	-	6.06	0.13	-	-6.50	10.30	4	0	4	-1.64
Common Law Avg	0.81	0.44	39.35	0.68	3.52	4.04	10.55	4.06	0.22	2.72	0.57
Argentina	0.07	0.01	2.74	0.05	-	1.78	11.71	3	0	1	-0.64
Austria	0.19	0.10	12.11	0.90	2.87	2.00	11.43	4	0	3	1.86
Belgium	0.69	0.21	22.92	0.62	4.59	2.12	11.53	2	0	2	1.28
Brazil	0.13	0.06	2.01	0.12	-	3.15	12.25	5	0	1	-0.38
Chile	0.56	0.07	15.46	0.42	-	4.26	11.25	5	1	2	1.27
Colombia	-	0.01	2.48	0.10	-	3.76	11.49	4	1	0	-0.74
Denmark	0.64	0.31	35.45	1.90	2.14	1.75	11.25	4	0	3	1.91
Ecuador	-	0.00	2.36	0.08	-	4.24	10.95	2	0	0	-0.81
Egypt	0.15	0.08	12.25	0.10	5.95	3.84	11.70	4	0	2	0.00
Finland	1.13	1.08	26.90	0.69	-	3.10	11.20	4	0	1	1.95
France	0.82	0.68	12.97	0.79	3.85	2.03	12.27	5	0	0	1.37
Germany	0.42	0.50	8.29	1.07	3.32	0.97	12.40	4	0	3	1.64
Greece	0.45	0.16	28.29	0.49	4.33	3.90	11.42	3	1	1	0.81
Indonesia	0.04	0.02	1.50	0.05	-	4.76	12.06	4	1	2	-0.82
Italy	0.42	0.50	4.91	0.64	3.39	1.40	12.22	4	1	2	0.59
Japan	0.75	0.82	17.54	2.18	1.81	1.38	12.57	5	1	2	1.24
Jordan	-	0.19	35.79	0.22	-	6.03	10.60	3	1	1	0.34
Korea. Rep.	0.31	0.67	32.63	0.80	-	5.42	12.03	6	1	3	0.87
Mexico	0.15	0.04	1.43	0.11	0.89	2.26	12.07	3	0	0	-0.41
Netherlands	0.87	1.03	16.33	1.13	2.02	1.82	11.77	4	0	3	1.73
Norway	0.66	0.50	40.19	0.96	-	2.37	11.30	4	0	2	1.90
Peru	0.09	0.01	7.21	0.08	-	4.03	11.20	5	1	0	-0.64
Philippines	0.08	0.01	2.80	0.07	3.39	4.57	11.60	5	0	1	-0.46
Portugal	0.27	0.16	5.89	0.97	-	1.36	11.32	4	0	1	1.19
Spain	0.71	0.89	74.67	1.02	1.11	3.71	12.04	6	0	2	1.20
Sweden	0.84	0.87	30.62	1.06	1.69	2.98	11.48	4	0	1	1.84
Switzerland	2.67	1.02	37.00	1.77	2.68	1.91	11.47	3	0	1	1.90
Taiwan	-	-	-	-	-	-	11.54	5	0	2	-
Turkey	0.13	0.19	4.06	0.10	-	5.05	11.82	4	0	2	0.06
Uruguay	-	-	3.46	0.19	-	-0.04	10.53	2	1	3	0.51
Venezuela	0.02	0.00	2.12	0.05	-	3.18	11.49	2	0	3	-1.20
Civil Law Avg	0.54	0.36	16.75	0.62	3.25	2.97	11.61	3.97	0.32	1.61	0.65
Sample Avg	0.65	0.39	25.22	0.64	3.40	3.37	11.59	4.00	0.29	2.02	0.62
Test of Means (T-Statistics)											
Common vs Civil	0.27*	0.08***	22.60*	0.06	0.27	1.07**	-0.07	0.09	-10**	1.11*	-0.08

Table VII classifies the sample's countries by their legal origins and provides an overview of all variables used in the external finance regression models. For each of the 49 countries in the sample the table presents the average values of each variable for the period 2001-2012. Moreover, the average values of all common law and civil law countries together are presented as well as the averages of the entire sample. On the bottom of the table the means of all common and civil law countries together are tested.

As can be seen in the table the common law countries outperform the civil law countries with regard to the average values of the Equity Market Cap/GNP, Total Stocks Traded/GNP, Listed Domestic Firms/Population, Debt/GNP, Risk Premium on Lending, Lagged GDP Growth and numbers of Anti-director Rights and Creditor Right present variables. The common law countries especially score high on the number of domestic firms per million citizens, with common law countries having nearly 23 more listed domestic firms per million citizens than their civil law counterparts. The civil law countries score better on the Log GNP, Rule of Law and the presence of the One Share One Vote variables with only the difference in the latter being significant (at the 5 percent level). The differences between the two legal origins in favor of the common law countries are all significant at least at the 10 percent level except for the differences in the Debt/GNP, Anti-director Rights and the Risk Premium on Lending, which differences are insignificant. Again, table VII only present a univariate analysis of the external finance variables and the chance that important effects are omitted is substantial.

Table VIII

Summary Statistics External Capital Markets

Summary statistics for the variables used in the external finance regressions. Descriptions of the variables can be found in sections 3.2, 3.3 and 3.4.

Variable	Mean	Median	Standard Deviation	25 th Percentile	75 th Percentile	Skewness	Kurtosis	Number of Obs.
Equity Market Capitalization/GNP	0.65	0.52	0.60	0.09	1.03	0.89	2.92	476
Total Stocks Traded/GNP	0.39	0.18	0.49	0.04	0.65	1.75	6.17	501
Listed Domestic Firms/Population	25.22	12.91	32.28	4.19	34.90	1.97	7.28	510
Debt/GNP	0.65	0.52	0.60	0.09	1.03	0.89	2.92	501
Risk Premium on Lending	3.40	3.47	2.30	1.78	4.48	1.25	6.49	287
Anti-director Rights	4.00	4.00	0.95	4.00	5.00	-0.43	3.24	588
Creditor Rights	2.02	2.00	1.18	1.00	3.00	0.03	2.06	588
Civil Law Dummy	0.63	-	-	-	-	-	-	588
One Share One Vote Dummy	0.29	-	-	-	-	-	-	588
Rule of Law	0.62	0.83	1.05	-0.37	1.61	-0.43	1.92	576
GDP Growth(-1)	3.37	3.49	3.87	1.73	4.96	0.80	6.39	544
Log GNP	11.59	11.53	0.55	11.24	11.97	0.17	3.24	576
Crisis Dummy	0.42	-	-	-	-	-	-	588

In table VIII the summary statistics of all the external finance variables are shown. When looking at the skewness and kurtosis (0.17&3.24) of the Log GNP variable, the distribution of this variable seems to be very close to the normal distribution with a skewness of 0 and a kurtosis of 3). This is the case because this variable is the logarithm of a country's GNP. As explained earlier, this logarithm is deliberately

taken. Not taking the logarithm of GNP would have resulted in a very abnormal distribution of the variable. Other values that stand out are the relatively high kurtosis values of lagged GDP growth and Listed Domestic Firms/Population. The kurtosis value of these variables is 6.39 and 7.28 respectively, indicating extreme values around the mean. The high kurtosis of the lagged GDP growth could be explained by the presence of various developing countries in the sample. Very high and low GDP growth in these countries is not uncommon. An explanation for the high kurtosis of the Listed Domestic Firms/Population may be that countries such as Singapore and Hong Kong are quite small and have smaller numbers of citizens, but very well developed capital markets. On the other hand, the capital markets of other countries such as the Philippines and Venezuela are small, but these countries do have large numbers of inhabitants. Moreover, also the kurtosis of the risk premium on lending is quite high. This could be caused by the larger risk premia of the developing countries, but also by the negative risk premium of Sri Lanka.

Table IX

81 Correlation Matrix External Finance

Correlation matrix with all the correlation coefficients between the variables used in the external finance regressions.

Variable	Anti-director Rights	Creditor Rights	Civil Law Dummy	One Share One Vote Dummy	Rule of Law	GDP Growth (-1)	Log GNP	Crisis Dummy
Anti-director Rights	1.00	-	-	-	-	-	-	-
Creditor Rights	-0.05	1.00	-	-	-	-	-	-
Civil Law Dummy	0.09	0.15	1.00	-	-	-	-	-
44 Share One Vote Dummy	0.15	-0.27	0.16	1.00	-	-	-	-
Rule of Law	0.13	0.03	-0.06	0.12	1.00	-	-	-
GDP Growth(-1)	0.10	0.17	0.23	0.00	0.06	1.00	-	-
Log GNP	-0.04	0.09	0.15	-0.09	-0.45	-0.18	1.00	-
Crisis Dummy	0.02	0.02	-0.05	-0.00	-0.01	-0.02	0.12	1.00

14 The correlation matrix of the variables used in the external finance regression models is shown in table IX. The largest correlation coefficient value exists between the Log GNP and Rule of Law variable. The value of that coefficient is -0.45, indicating a weak negative linear relation between these variables. However, 119 negative correlation coefficient of -0.45 is statistically seen no reason for concern. Therefore, both Log GNP and Rule of Law variables remain in the dataset. When the Log GNP per capita variable is added to the correlation matrix the value of the correlation coefficients between Log GNP per Capita and the Rule of Law and Log GNP variables indicate a strong linear relation. Therefore, the Log GNP per Capita variable is removed from the dataset and not added in the external finance regression models nor in the univariate analyses. The correlation coefficients between all other variables do not indicate the presence of linear relationships.

4. Methodology

4.1 Ownership Structures

In order to verify the first hypothesis that firms in civil law origin countries have more concentrated ownership structures than firms in common law countries, a significant causal relation between legal origin and ownership structure needs to be proven. The methodology to test for a possible relation between the variables is derived from La Porta et al. (1998). This study uses ordinary least squares (OLS) regressions with a cross section of 44 countries. Because the data on the mean ownership of a given country is either from 2009 or 2010, for the time variant variables of the mean ownership regressions the average value of the years 2009 and 2010 is used. In the OLS regressions, the average percentage of share capital owned by the two largest shareholders in the ten largest non-financial publicly-traded domestic firms for each country is regressed on the Civil Law Dummy and three other measures of investor protection. In addition to the control variables Log GNP and the Gini Coefficient that are used by La Porta et al. (1998), this study also adds the natural logarithm of Total Assets to its regression. The first regression to test hypothesis 1 is formulated as follows:

$$\text{Mean Ownership}_i = \alpha + \beta_1(\text{Civil Law Dummy})_i + \beta_2(\text{Log GNP})_i + \beta_3(\text{Gini})_i + \beta_4(\text{LN Total Assets})_i + \beta_5(\text{Rule of Law})_i + \beta_6(\text{Anti - director})_i + \beta_7(\text{One Share One Vote})_i + \varepsilon_i$$

4.2 Corporate Valuation

Hypotheses 2a and 2b, which state that firms in countries with legal regimes of common law origin have higher Tobin's Q and Return on Assets values than firms in countries with legal regimes of civil law are tested by conducting various random effects GLS regressions. In these regressions panel data of 460 firms from 46 countries over the period 2001-2012 is used. Tobin's Q and Return on Assets are used as proxies for firm value. Random effects models are used in this study because they allow for the inclusion of time invariant variables. In fixed effects models time invariant variables are absorbed by the intercept. As the corporate valuation regression models contain time invariant variables, such as the civil law dummy, the use of random effects is inevitable. Random effects assume that the firm's error terms are uncorrelated with the predictors of the model, allowing time invariant variables to play a role in the model as explanatory variables (Wooldridge, 2009). Random effects are also preferred over fixed effects because there is no within firm or within country variation in several variables. Moreover, in all corporate valuation regressions this study uses robust standard errors. Robust standard errors are used to avoid heteroskedasticity and serial correlation problems.

The methodology to test hypotheses 2 and 3 is obtained from the study by La Porta et al. (2002), but this study uses panel data instead of a cross section. In the regressions, Tobin's Q and Return on Assets as dependent variables are regressed on the Civil Law Dummy and the number of Anti-director Rights that are present in a country. On top of the lagged Growth in Sales control variable that is used by La Porta et al. (2002), this study adds several other control variables to its regression. These control

variables include: the R&D/Sales ratio, LN Total Assets, the EBIT/Sales ratio and the Debt/Assets ratio. Moreover, a Crisis Dummy to control for the effects of the international financial crisis (2008-2012) is added as well as eight Industry Dummies. Industry Dummies are added to control for industry fixed effects. The dummy for the ninth and last industry is omitted from all regressions to avoid a dummy trap. The regressions to test hypotheses 2a and 2b are formulated as follows:

$$\text{Tobin's } Q_{i,t} = \alpha + \beta_1(\text{Civil Law Dummy})_{i,t} + \beta_2(\text{R\&D/Sales})_{i,t} + \beta_3(\text{LN Total Assets})_{i,t} + \beta_4(\text{EBIT/Sales})_{i,t} + \beta_5(\text{Anti - director})_{i,t} + \beta_6(\text{Growth in Sales})_{i,t-3} + \beta_7(\text{Debt/Assets})_{i,t} + \beta_8(\text{Crisis Dummy})_{i,t} + \text{Industry Dummies}_{i,t} + \varepsilon_{i,t}$$

$$\text{Return on Assets}_{i,t} = \alpha + \beta_1(\text{Civil Law Dummy})_{i,t} + \beta_2(\text{R\&D/Sales})_{i,t} + \beta_3(\text{LN Total Assets})_{i,t} + \beta_4(\text{EBIT/Sales})_{i,t} + \beta_5(\text{Anti - director})_{i,t} + \beta_6(\text{Growth in Sales})_{i,t-3} + \beta_7(\text{Debt/Assets})_{i,t} + \beta_8(\text{Crisis Dummy})_{i,t} + \text{Industry Dummies}_{i,t} + \varepsilon_{i,t}$$

4.3 External Finance

Hypotheses 4a, 4b and 4e that countries with legal regimes of common law origin have larger Debt and Equity Market Capitalizations as a percentage of GNP and higher Total Values of Stocks Traded as a percentage of GNP than countries with legal regimes of civil law origin as well as hypotheses 4c and 4d that countries with legal regimes of common law origin have more Listed Domestic Firms as a percentage of their Population (in millions) and lower Risk Premia on Lending than countries with legal regimes of civil law origin are tested by the use of various random effects GLS regressions with panel data from 49 countries over the period 2001-2012. Random effects are used because the regression models include time invariant variables. Furthermore, this study uses robust standard errors in all external finance regressions. Robust standard errors are used to avoid heteroskedasticity and serial correlation problems.

The methodology to test these hypotheses is derived from La Porta et al. (1997). Again, this study uses panel data instead of a cross section. In the different regressions, Debt and Equity Market Capitalization and Total Value of Stocks Traded to a country's GNP, the number of Listed Domestic Companies to the country's Population (in millions) and the Risk Premia on Lending are regressed on the Civil Law Dummy. In the Equity Market Capitalization to GNP, the Total Value of Stocks Traded and the number of Listed Domestic Firms to the Population regressions, the One Share One Vote Dummy and Anti-director Rights index are added as alternative measures of investor protection. Rule of Law is added as a proxy for law enforcement quality. In the Debt Market Capitalization to GNP and Risk Premia on Lending regressions, the Creditor Rights index is added as alternative measure of investor protection and Rule of Law as the measure of law enforcement quality. Moreover, in all three regressions two control variables are added. These control variables include: the country's one year lagged GDP Growth and the logarithm of GNP. A Crisis Dummy is also added to control for the effects of the 2008-2012 international financial crisis. The regressions are formulated as follows:

$$\frac{\text{Debt Market Capitalization}}{\text{GNP}}_{i,t} = \alpha + \beta 1(\text{GDP growth})_{i,t-1} + \beta 2(\text{Log GNP})_{i,t} + \beta 3(\text{Civil Law Dummy})_{i,t} + \beta 4(\text{Rule of law})_{i,t} + \beta 5(\text{Creditor rights})_{i,t} + \beta 6(\text{Crisis Dummy})_{i,t} + \varepsilon_{i,t}$$

$$\frac{\text{Equity Market Capitalization}}{\text{GNP}}_{i,t} = \alpha + \beta 1(\text{GDP growth})_{i,t-1} + \beta 2(\text{Log GNP})_{i,t} + \beta 3(\text{Civil Law Dummy})_{i,t} + \beta 4(\text{Rule of law})_{i,t} + \beta 5(\text{Anti - director})_{i,t} + \beta 6(\text{ne Share One Vote})_{i,t} + \beta 7(\text{Crisis Dummy})_{i,t} + \varepsilon_{i,t}$$

$$\frac{\text{Listed Domestic Companies}}{\text{GNP}}_{i,t} = \alpha + \beta 1(\text{GDP growth})_{i,t-1} + \beta 2(\text{Log GNP})_{i,t} + \beta 3(\text{Civil Law Dummy})_{i,t} + \beta 4(\text{Rule of law})_{i,t} + \beta 5(\text{Anti - director})_{i,t} + \beta 6(\text{One Share One Vote})_{i,t} + \beta 7(\text{Crisis Dummy})_{i,t} + \varepsilon_{i,t}$$

$$\text{Risk Premium on Lending}_{i,t} = \alpha + \beta 1(\text{GDP growth})_{i,t-1} + \beta 2(\text{Log GNP})_{i,t} + \beta 3(\text{Civil Law Dummy})_{i,t} + \beta 4(\text{Rule of law})_{i,t} + \beta 5(\text{Creditor rights})_{i,t} + \beta 6(\text{Crisis Dummy})_{i,t} + \varepsilon_{i,t}$$

$$\frac{\text{Total Value of Stocks Traded}}{\text{GNP}}_{i,t} = \alpha + \beta 1(\text{GDP growth})_{i,t-1} + \beta 2(\text{Log GNP})_{i,t} + \beta 3(\text{Civil Law Dummy})_{i,t} + \beta 4(\text{Rule of law})_{i,t} + \beta 5(\text{Anti - director})_{i,t} + \beta 6(\text{One Share One Vote})_{i,t} + \beta 6(\text{Crisis Dummy})_{i,t} + \varepsilon_{i,t}$$

5. Results

The following section will present the main findings of this study. The results of the different regression models, that measure the effects of legal origin on ownership structures, corporate valuation and external finance, will be discussed.

5.1 Ownership Structures Results

Table X
Mean Ownership Regressions

Table X shows the regression coefficients of the Ordinary Least Squares regressions with Mean Ownership as dependent variable. The standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)
Intercept	0.001 (0.238)	0.386 (0.267)
Civil Law	0.032*** (0.019)	0.015 (0.019)
43 Anti-director Rights	-	-0.006 (0.009)
Creditor Rights	-	-0.005 (0.007)
One Share One Vote	-	0.021 (0.020)
Rule of Law	-	-0.047** (0.017)
Log GNP	0.068* (0.034)	0.010* (0.033)
LN Total Assets	-0.039 (0.007)	0.001 (0.014)
Gini	0.001 (0.001)	0.000 (0.001)
Observations	43	41
Adjusted R ²	0.444	0.581

Table X shows the results of two OLS regression models that have been conducted in order to find the determinants of country's Mean Ownership. The OLS regressions have a cross section of 44 countries. In the first regression model, Mean Ownership as dependent variable is regressed on the Civil Law Dummy as independent variable. Moreover, three different control variables are added to the regression. First, the logarithm of a country's GNP. This control variable is expected to have a negative influence on the Mean Ownership variable as large country's may have larger firms and larger firms might have lower ownership concentrations. Second, the natural logarithm of the average Total Assets of a country's

largest firms, which is also expected to have a negative influence on Mean Ownership as larger firms might have lower ownership concentrations. The last control variable is the Gini Coefficient, which is expected to have a positive relation with ownership concentration. This because countries with more unequal income distributions may have higher ownership concentrations. In the second regression, three other measures of investor protection are added to the first regression. These measures include the number of Anti-director Rights and Creditor Rights that are present in a country and the One Share One Vote Dummy. Also, the Rule of Law variable is added to the regression as a proxy for the enforcement quality of law in a country.

The coefficients of the first regression model show that countries of civil law origin have higher mean ownership than countries of common law origin. The coefficient value of 0.032 is significant at the 10% level and indicates that civil law countries have a mean ownership concentration that is 3.2% higher than in common law countries. Moreover, the regression shows that countries with a higher GNP have lower mean ownership. Contrary to the expectations, the coefficient of the LN Total Assets variable is negative, suggesting a negative influence of LN Total Assets on Mean Ownership. However, this coefficient is insignificant and no conclusions can be drawn from it. The regression coefficient of the Gini Coefficient variable is positive and very small, but also insignificant. The adjusted R-Squared of the first regression is 44%, indicating that 44% of the variance is explained by the model.

With the addition of the investor protection measures, the adjusted R-Squared of the second regression rises to 58%. The number of observations drops slightly, because the Gini Coefficient is unavailable for three countries. The coefficient of the Log GNP control variable remains positive and significant at the 1% level. The coefficient of the Civil Law Dummy becomes insignificant, indicating that one or more of the added investor protection measures may cover the limitation of civil law legal system. The coefficient of the Rule of Law variable, that proxies law enforcement, is significant at the 5% level. The negative value of the coefficient suggests that better law enforcement results in lower Mean Ownership concentrations. A one point increase on the Rule of Law index reduces a country's Mean Ownership concentration by nearly 5%. As expected, the coefficient of the Anti-director Rights and Creditor Rights variables are negative, indicating that the presence of more of these rights results in lower Mean Ownership concentrations. The coefficient of the One Share One Vote Dummy is positive, which is unexpected. Nevertheless, the coefficients of these three additional investor protection measures are all insignificant and no conclusion can be drawn from them.

Based on the existing literature on ownership structures and legal origin the first hypothesis was formulated:

Civil law origin countries have more concentrated ownership than common law origin countries.

The first regression of table X confirms this hypothesis with a negative regression coefficient of the Civil Law Dummy that is significant at the 10% level. However, when other investor protection

measures added in the second regression, the Civil Law Dummy becomes insignificant. In the second regression a country's Rule of Law seems to be an important determinant of the Mean Ownership concentration. Because the Civil Law Dummy does not remain significant in the second regression, a clear conclusion cannot be drawn. Therefore, hypothesis 1 is not confirmed and the results of this study are not completely in line with the results of La Porta et al. (1998). They find significantly higher ownership concentration in civil law countries.

5.2 Corporate Valuation Results

Table XI
Tobin's Q Regressions

Table XI shows the regression coefficients of the Generalized Least Squares regressions with Tobin's Q as dependent variable. The robust standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)	(3)
Intercept	0.640 (0.714)	0.017 (0.760)	1.054 (0.721)
Civil Law	-0.648* (0.140)	-	-0.210* (0.076)
Anti-director Rights	-0.222* (0.066)	-0.631* (0.140)	-
LN Total Assets	0.116*** (0.052)	0.098*** (0.051)	0.083 (0.051)
EBIT/Sales	3.028* (0.432)	3.051* (0.435)	3.195* (0.433)
R&D/Sales	2.980 (2.096)	3.730 (2.014)	2.749 (2.186)
Debt/Assets	-0.154 (0.643)	-0.144 (0.647)	-0.149 (0.645)
Growth in Sales	0.186 (0.265)	0.169 (0.264)	0.237 (0.268)
Crisis Dummy	-0.211** (0.169)	-0.198** (0.174)	-0.201** (0.184)
Industry Dummies	Yes	Yes	Yes
Observations	1734	1734	1734
N of Groups	380	380	380
Overall Adj. R ²	0.274	0.251	0.218

Table XI shows the regression coefficients of the three GLS random effects regressions that have been conducted in order to find the determinants of the Tobin's Q values from the ten largest firms of the countries in the sample. In the first regression model Tobin's Q as the dependent variable is regressed on the Civil Law Dummy. The number of Anti-director Rights is added to this regression as an additional

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measure of investor protection. Furthermore, several control variables are added to the regression in order to control for firm size (LN Total Assets), growth prospects (R&D/Sales and Growth in Sales), 118 level (Debt/Assets) and profitability (EBIT/Sales). A Crisis Dummy is added to the regression to control for the effect of the international financial crisis in 2008-2012. 85 Industry Dummies are added to control for industry fixed effects. In the second regression model, only the Anti-director Rights variable is added as measure of investor protection and in the third regression only the Civil Law Dummy.

57
The first regression model has an overall adjusted R-Squared of 27%, which is significantly higher than the R-Squared of previous research by La Porte et al. (2002). They report an overall adjusted R-squared of around 7%. The regression has 1734 observations and the standard errors of the regression are adjusted for 380 clusters of firms. 173 The regression coefficients of the first regression model show that the Civil Law Dummy is significant at the 1% level. The negative coefficient of the Civil Law Dummy indicates that a move from common to civil law results in a Tobin's Q value that is a staggering 0.648 lower. 20 The coefficient of the Anti-director Rights variable is also significant at the 1% level and suggests that the gain of one Anti-director Right actually results in a drop in Tobin's Q of 0.22. 229 This is unexpected. 10 Previous research by La Porta et al. (2002) shows that the presence of more Anti-director Rights increases the value of Tobin's Q. 228 Three control variables are also significant. LN Total Assets at the 10% level, indicating that larger firms have higher Tobin's Q values; the Crisis Dummy at the 5% level, implying that Tobin's Q was lower during the crisis years and EBIT/Sales at the 1% level, suggesting that more profitable firms have higher Tobin's Q values. 65

When the Civil Law Dummy is dropped in the second regression model, its overall adjusted R-Squared falls slightly to 25%. 26 The Anti-director Rights variable remains significant at the 1% level and its regression coefficient becomes even more negative. Moreover, the EBIT/Sales, the Crisis Dummy and LN Total Assets remain significant.

The third regression model with only the Civil Law Dummy as measure of investor protection has an overall adjusted R-Squared of 22%. 27 The regression coefficient of this Civil Law Dummy is significant at the 1% level and has a value of -0.210, which still indicates that firms in common law countries have significantly higher values of Tobin's Q than firms in civil law countries. 1 The coefficient of the LN Total Assets control variable becomes insignificant, but the EBIT/Sales and Crisis Dummy variables remain significant at the 1% and 10% level respectively. 199

Hypothesis 2a of this study about the effects of legal origin on Tobin's Q was formulated as follows:

21
Firms in countries with legal regimes of common law origin have higher Tobin's Q values than firms in countries with legal regimes of civil law origin. 2

1
Based on the results of table XI, the conclusion can be drawn that firms in common law countries indeed have higher values of Tobin's Q than firms in civil law countries. Therefore, hypothesis 2a can be

confirmed. These results of ¹ this study are in line with the research by La Porta et al. (2002), who also find higher Tobin's Q values in common law countries.

Table XII
Return on Assets Regressions

Table XII shows the regression coefficients of the Generalized Least Squares regressions with Return on Assets as dependent variable. The robust standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)	(3)
Intercept	0.005 (0.039)	0.012 (0.038)	-0.001 (0.039)
Civil Law	-0.011*** (0.005)	-	-0.010*** (0.005)
Anti-director Rights	0.001 (0.002)	0.001 (0.002)	-
LN Total Assets	0.005* (0.001)	0.004* (0.001)	0.004* (0.001)
EBIT/Sales	0.432* (0.030)	0.435* (0.030)	0.432* (0.030)
R&D/Sales	-0.207* (0.073)	-0.208* (0.074)	-0.202* (0.071)
Debt/Assets	-0.168* (0.025)	-0.166* (0.025)	-0.168* (0.025)
Growth in Sales	0.025* (0.008)	0.026* (0.008)	0.025* (0.008)
Crisis Dummy	-0.039** (0.006)	-0.036** (0.008)	-0.030** (0.007)
Industry Dummies	Yes	Yes	Yes
Observations	1776	1776	1776
N of Groups	382	382	382
Overall Adj. R ²	0.667	0.663	0.668

Table XII provides the regression coefficients of the three GLS random effects regressions that have been conducted in order to find the determinants of the Return on Assets values from the ten largest firms of the countries in the sample. These three regression models are similar to the regression models in table XII, except for the dependent variable which is Return on Assets instead of Tobin's Q.

The first regression model has an overall adjusted R-Squared of 66.7%, 1776 observations and the standard errors of the regression are adjusted for 382 clusters in firms. The Civil Law Dummy is significant at the 10% level and its regression coefficient has a value of -0.011. This value indicates that a move from common law to civil law results in a ROA value that is 0.011 lower, which is a small difference from economic perspective. The coefficient of the Anti-director Rights variable is positive,

87 suggesting a positive relation between the number of Anti-director Rights and ROA. This in contrast to 22 the negative value of the coefficient in the Tobin's Q regression. However, the coefficient is insignificant so no conclusion can be drawn from its value. Moreover, all five control variables are significant at least at the 5% level. The coefficients of these control variables indicate that both larger and more profitable firms have higher ROA values. Also past Growth in Sales has a positive influence on a firm's ROA. On the other hand, higher Debt/Assets and R&D/Sales ratios have a negative influence on ROA. The negative value of the Crisis dummy coefficient suggests that during the crisis the ROA values were lower.

In the second regression, the Civil Law Dummy is excluded from the model. This exclusion results in an overall adjusted R-Squared of 66.3%, which is only slightly lower than the adjusted R-squared of the first regression. The coefficient of the Anti-director Right variable is still positive, but remains insignificant. Similar to the first regression model, all control variables are significant at least at the 5% level. The coefficients of the control variables suggest similar influences on ROA as in the first regression.

70 The third regression model only has the Civil Law Dummy as measure of investor protection. The dummy variable is significant at the 10% level and has a value of 0.010, which implies that firms in common law countries have higher ROA than firms in civil law countries. Also in this regression all control variables are significant at least at the 5% level with the coefficients indicating the same influences on ROA as in the previous two regression model. The overall adjusted R-Squared of the model rises to 66.8%.

Based on the literature on legal origin and corporate valuation, hypothesis 2b was formulated. This hypothesis states the following:

21 Hypothesis 2b: Firms in countries with legal regimes of common law origin have higher Returns on Assets than firms in countries with legal regimes of civil law origin.

The results presented in table XII confirm hypothesis 2b. In all regression models in which the Civil Law Dummy is added, its regression coefficient is negative and significant. This indicates that indeed firms in countries with common law legal regimes have higher ROA values than countries with civil law legal regimes. Because this study is the first to research the effect of legal origin on ROA, there is no literature to compare the results with.

5.3 External Finance Results

198 The tables XIII-XVII present the results of the random effects GLS regressions that have been conducted in order to find the determinants of various external finance measures. Next to the Civil Law Dummy that is added to all regressions, three control variables are added. The first control variable is the 1 year lagged Growth in GDP, because GDP Growth may affect the breath and value of a country's capital

market in a positive way. The second control variable is the logarithm of a country's GNP. This control is added because the development of capital markets may be an activity that is subject to increasing returns to scale. Therefore, countries with larger GNP's might have larger capital markets. The last control variable is the Crisis Dummy, which is added as control for the effect of the international financial crisis between 2008 and 2012. Moreover, in all regressions the Rule of Law variable is added as a proxy for the quality of law enforcement. In the regressions with Equity Market Cap/GNP, Listed Firms/Pop and Total Value of Stock Traded/GNP as dependent variables, two alternative measures of investor protection that relate to the equity market are added; the number of Anti-director Rights present in a country and the One Share One Vote Dummy. In the regressions with the Risk Premium on Lending and Debt/GNP as dependent variable, the number of Creditor Rights present in a country is added as alternative measure of investor protection.

Table XIII
Debt/GNP Regressions

Table XIII shows the regression coefficients of the Generalized Least Squares regressions with Debt/GNP as dependent variable. The robust standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)	(3)
Intercept	-5.672* (1.191)	-5.768* (1.213)	-5.225* (1.285)
Civil Law	-0.044 (0.142)	-	-0.116 (0.112)
Creditor Rights	0.065 (0.050)	0.073 (0.039)	-
Rule of Law	0.290* (0.059)	0.287* (0.059)	0.300* (0.058)
GDP Growth(-1)	0.005* (0.002)	0.005* (0.002)	0.005* (0.002)
Log GNP	0.522* (0.106)	0.526* (0.106)	0.498* (0.112)
Crisis Dummy	0.107** (0.050)	0.108** (0.051)	0.110** (0.050)
Observations	537	537	537
N of Groups	48	48	48
Overall Adj. R ²	0.557	0.545	0.560

Table XIII presents the regression coefficients of three random effects GLS regressions with Debt/GNP as dependent variable. Debt is a measure of a country's debt market capitalization with the debt market capitalization proxied by the amount of domestic credit provided to the private sector. In the first

regression models all variables are included. The second regression model drops the Civil Law Dummy variable and in the third model the Creditor Rights variable is dropped.

The first regression model has an overall adjusted R-Squared of 55.7% with 537 observations and standard errors that are adjusted for 48 clusters in country. The negative Civil Law Dummy regression coefficient of -0.044 indicates that civil law origin countries have lower debt market capitalizations. Unfortunately, the coefficient is insignificant. This also applies to the Creditor Rights variable coefficient, which has a positive value of 0.065. The coefficient of the Rule of Law variable is significant at the 1% level with a positive value of 0.290. This indicates that a move up of 1 point in the Rule of Law index results in a 29% increase in the Debt to GNP ratio. Also both the lagged GDP Growth and Log GNP control variables are significant at the 1% level, suggesting that higher lagged GDP Growth and GNP values have a positive influence on the Debt/GNP ratio of a country. The Crisis Dummy is positive and significant at the 5% level, which implies that the Debt/GNP ratio was higher in the crisis years. This was caused by debt levels that remained constant and GNPs that were decreasing.

The second and third regression model show results that are similar to those of the first regression model. The Rule of Law variable maintains a strong positive influence on the Debt/GNP ratio and is significant at the 1% level. Also the positive coefficients of the control variables remain significant at the 1% level.

Hypothesis 3a that was formulated with regard to the Debt/GNP ratio of countries states the following:

Countries with legal regimes of common law origin have larger debt market capitalizations as a percentage of GNP than countries with legal regimes of civil law legal origin.

Based on the results presented in table XIII, this hypothesis cannot be confirmed. Although all three regression models in the table show negative values of the Civil Law Dummy, these values are all insignificant and no conclusion can be drawn. The results do indicate that the enforcement of law, proxied by the Rule of Law Index, is an important determinant of the Debt/GNP ratios of the countries in the sample. These results are not in line with research by La Porta et al. (1997), who find higher Debt/GNP ratios in common law countries.

Table XIV
Equity Market Capitalization/GNP Regressions

Table XIV shows the regression coefficients of the Generalized Least Squares regressions with Equity Market Capitalization/GNP as dependent variable. The robust standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)	(3)	(4)
Intercept	-7.837* (1.295)	-7.737* (1.977)	-8.271* (2.128)	-7.613* (2.100)
Civil Law	-0.297 (0.233)	-	-0.299 (0.230)	-0.299 (0.230)
43 Anti-director Rights	-0.120 (0.119)	-0.122 (0.111)	-	-0.130 (0.114)
One Share One Vote	-0.066 (0.151)	-0.088 (0.145)	-0.146 (0.148)	-
Rule of Law	0.452* (0.159)	0.449* (0.065)	0.436* (0.155)	0.460* (0.059)
GDP Growth(-1)	0.009 (0.008)	0.010 (0.008)	0.009 (0.008)	0.009 (0.008)
Log GNP	0.752* (0.205)	0.729* (0.970)	0.750* (0.187)	0.734* (0.205)
Crisis Dummy	-0.092** (0.045)	-0.090** (0.045)	-0.088** (0.044)	-0.090** (0.046)
Observations	451	451	451	451
N of Groups	45	45	45	45
Overall Adj. R ²	0.236	0.209	0.224	0.238

Table XIV provides the output of the four GLS regression models with the equity market capitalization to GNP ratio as dependent variable. In the first regression model all variables are included. In each of the other regression models one of the three measures of investor protection is left out.

The first regression has 451 observations and the standard errors of the regression are clustered for 45 clusters in country. The overall adjusted R-Squared of the regression is 23.6%. The regression coefficients of all three investor protection measures are negative. The negative coefficient of the Civil Law Dummy is expected as earlier research by La Porta et al. (1997), has shown that the civil law legal origin negatively influences the Equity Market Capitalization to GNP ratio. However, the negative coefficient of the Anti-director-Rights variable and the One Share One Vote are unexpected. Both these variables were expected to have a positive influence on the Equity Market Capitalization to GNP ratio. Nevertheless, because all three coefficients are insignificant, no clear conclusion can be drawn. The two coefficients that are significant, are those of the Rule of Law and Log GNP variables. With a positive coefficient value of 0.452 that is significant at the 1% level, the Rule of Law variable has yet again an important influence on the dependent variable. An increase in the rule of law variable of 1 point, raises

the Equity Market Capitalization to GNP ratio by an ⁷⁸ressive 45%. Moreover, the significant positive coefficient of the Log GNP control variable indicates that the size of a country's economy matters for the size of its Equity Market Capitalization to GNP ratio. The Crisis Dummy coefficient is negative and suggests that during the crisis years the Equity Market Capitalization to GNP ratio was lower. This was caused by stock prices that decreased faster in value than country's GNPs.

The results of the other three regression models do not show a lot of difference with the first regression model. The overall adjusted R-Squared values of the other models do not differ greatly of the overall adjusted R-Squared of the first regression model, even though a variable is dropped in each of these models. This also applies for the regression coefficients of these models. The Rule of Law, Crisis Dummy and Log GNP variables remain significant and the values of their regression coefficients do not change much.

Based on earlier written literature on the effects of legal origin on equity market capitalization hypothesis 3b was formulated. This hypothesis states the following:

Countries with legal regimes of common law origin have larger equity market capitalizations as a percentage of GNP than countries with legal regimes of civil law origin.

With the results of table XIV this hypothesis cannot be confirmed. The results from this table indicate that a country's enforcement of law is an important determinant of its Equity Market Capitalization to GNP ratio. The effect that legal origin has on this ratio is insignificant and therefore legal origin cannot be flagged as a determinant of the Equity Market Capitalization to GNP ratio of countries. These results are not in line with the results of La Porta et al. (1997), who find higher Equity Market Capitalization to GNP ratios in common law countries.

Table XV
Listed Domestic Firms/Population Regressions

Table XV shows the regression coefficients of the Generalized Least Squares regressions with Listed Domestic Firms/Population as dependent variable. The robust standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)	(3)	(4)
Intercept	-0.287 (69.518)	-17.240 (72.005)	2.093 (70.709)	1.111 (68.802)
Civil Law	-24.065** (9.908)	-	-24.302** (9.502)	-23.696** (9.545)
Anti-director Rights	0.770 (4.150)	1.906 (2.954)	-	1.049 (3.819)
One Share One Vote	2.763 (7.199)	-0.924 (7.237)	3.078 (6.588)	-
Rule of Law	16.519* (5.380)	16.099* (5.671)	16.585* (5.214)	16.303* (5.201)
GDP Growth(-1)	0.875 (0.089)	0.094 (0.092)	0.087 (0.089)	0.089 (0.090)
Log GNP	2.257 (6.526)	2.145 (6.479)	2.312 (6.285)	2.101 (6.455)
Crisis Dummy	-0.886 (0.902)	-0.863 (0.912)	-0.926 (0.917)	-0.916 (0.911)
Observations	483	483	483	483
N of Groups	45	45	45	45
Overall Adj. R ²	0.370	0.246	0.369	0.370

The results of the Listed Domestic Firms/Population regressions are shown in table XV. Similar to the previous table, the first regression model includes all variables. In the other regression models one of the investor protection measures is left out.

The first regression model has an overall adjusted R-Squared of 37%, indicating that 37% of the variance is explained by the model. The model has 483 observations and its standard errors are adjusted for 45 clusters in country. In the first regression model the Civil Law Dummy variable is significant at the 5% level. The regression coefficient of the dummy has a value of -24.065, which implies that civil law countries have an impressive 24 Listed Domestic Firms to their Population less than the common law countries. The coefficients of the Anti-director Rights variable and One Share One Vote Dummy variable are positive as expected, but they are also insignificant. Again, the Rule of Law variable is significant at the 1% level and the coefficient's value of 16.519 suggests that a move up in the Rule of Law index by 1 point results in 16 more Listed Domestic Firms to a country's population. Moreover, all control variables are insignificant in the first regression model.

When the Civil Law Dummy is omitted in the second regression, the overall adjusted R-Squared drops to 24.6%. The Rule of Law variable remains highly positive and significant at the 1% level. The coefficient of the One Share One Vote Dummy variable becomes negative, but remains insignificant. The coefficients of the remaining variables in the model are also insignificant.

In the third and fourth model the Anti-director Rights variable and the One Share One Vote Dummy are left out respectively. In both models the overall adjusted R-Squared is 37% and Civil Law Dummy is positive and significant at the 5% level. Furthermore, the Rule of Law variable is significant at the 1% level in both models. All other variables are insignificant in the third and fourth regression model.

Hypothesis 3c was formulated on the effect of legal origin on the number of Listed Domestic Firms/Population:

Countries with legal regimes of common law origin have more listed domestic firms to its population (in millions) than countries with legal regimes of civil law origin.

From the results of table XV can be confirmed that common law countries indeed have more listed domestic firms to its population (in millions). This because the Civil Law Dummy is negative and significant at the 5% level in all three regressions in which it is included. Another important determinant of the number of Listed Domestic Firms/Population is law enforcement, as the Rule of Law variable is positive and significant at the 1% level in all four regression models. These results are in line with the results of La Porta et al. (1997), who also find more Listed Domestic Firms/Population in common law countries.

Table XVI
Risk Premium on Lending Regressions

Table XVI shows the regression coefficients of the Generalized Least Squares regressions with Risk Premium on Lending as dependent variable. The robust standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)	(3)
Intercept	9.171 (8.598)	9.081 (9.240)	6.500 (8.150)
Civil Law	0.097 (0.658)	-	0.066 (0.684)
Creditor Rights	-0.574 (0.367)	-0.573 (0.366)	-
Rule of Law	-0.595 (0.491)	-0.600 (0.481)	-0.636 (0.510)
GDP Growth(-1)	0.068 (0.055)	0.068 (0.055)	0.067 (0.056)
Log GNP	-0.278 (0.665)	-0.267 (0.732)	-0.241 (0.675)
Crisis Dummy	0.347 (0.738)	0.378 (0.745)	0.364 (0.743)
Observations	277	277	277
N of Groups	29	29	29
Overall Adj. R ²	0.275	0.273	0.208

Table XVI presents the results of the Risk Premium on Lending regressions. Each of these regression models has 277 observations and the standard errors are adjusted for 29 clusters in country. The overall adjusted R-Squared of the models is around 27%, except for the third model which has an overall adjusted R-Squared of 21%. The regression coefficients of each of the four regression models do not show any significant values, indicating that none of the variables in the models are determinants of the Risk Premium on Lending variable. The positive values of the Civil Law Dummy and negative values of the Creditor Rights and Rule of Law coefficients do suggest the expected effects of these variables. Namely, that civil law countries have higher Risk Premia on Lending and that a higher number of Creditor Rights or higher Rule of Law scores results in a lower Risk Premium on Lending. However, as none of these coefficients is significant, no conclusions can be drawn.

Hypothesis 3d was formulated on the expected effect of legal origin on the Risk Premium on Lending. This hypothesis states:

11
Countries with legal regimes of common law origin have higher risk premia on lending than countries with legal regimes of civil law origin.

As none of the Risk Premium on Lending regressions show significant regression coefficients, hypothesis 3b cannot be confirmed. Because this study is the first to research the effect of legal origin on the Risk Premium on Lending, there is no literature to compare the results with.

Table XVII
Total Value of Stocks Traded/GNP Regressions

Table XVII shows the regression coefficients of the Generalized Least Squares regressions with Total Value of Stocks Traded/GNP as dependent variable. The robust standard errors of each regression coefficient can be found in the parentheses. The levels of significance of each coefficient are reported by the *, ** and *** marks, which represent a significance level of respectively 1%, 5% and 10%.

Independent variables	(1)	(2)	(3)	(4)
Intercept	-4.171* (1.018)	-4.177* (1.034)	-4.282* (1.203)	-4.159* (1.021)
Civil Law	-0.060 (0.100)	-	-0.053 (0.102)	-0.059 (0.098)
43 Anti-director Rights	-0.083 (0.052)	-0.081 (0.052)	-	-0.081 (0.049)
One Share One Vote	0.010 (0.082)	0.002 (0.078)	-0.041 (0.076)	-
Rule of Law	0.289* (0.048)	0.288* (0.048)	0.273* (0.049)	0.287* (0.049)
GDP Growth(-1)	-0.008*** (0.005)	-0.009*** (0.005)	-0.008*** (0.005)	-0.008*** (0.005)
Log GNP	0.403* (0.091)	0.399* (0.092)	0.385* (0.105)	0.401* (0.091)
Crisis Dummy	0.035 (0.056)	0.037 (0.057)	0.038 (0.057)	0.036 (0.056)
Observations	475	475	475	475
N of Groups	46	46	46	46
Overall Adj. R ²	0.452	0.448	0.437	0.452

Table XVII provides the results of the four regression models with Total Value of Stocks Traded/GNP as dependent variable. In the first regression model all variables are included. In the next three regression models the Civil Law Dummy, Anti-director Rights variable and One Share One Vote Dummy are successively left out.

The first model has an overall adjusted R-Squared of 45.2%, 475 observations and adjusted standard errors for 46 clusters in country. The negative coefficient of the Civil Law Dummy in the first regression model implies that civil law countries have lower Total Values of Stocks Traded/GNP than common law countries. Unfortunately, the coefficient is insignificant and no conclusions can be drawn from it. The coefficient of the Anti-director Rights variable suggests an unexpected negative influence of the variable on the Total Value of Stocks Traded/GNP and the One Share One Dummy coefficient implies

a positive influence. However, the regression coefficients of these variables are also insignificant. The other coefficients in the model are significant at least at the 10% level. The value of 0.289 of the Rule of Law variable is significant at the 1% level and indicates that a 1 point increase in the Rule of Law Index results in an increase of the Total Value of Stocks Traded to GNP by nearly 29%. The coefficient of the lagged GDP Growth variable is actually negative with a value of -0.008, which is significant at the 10% level. This coefficient implies that past GDP Growth has a small negative influence on the Total Value of Stocks Traded/GNP variable. The Log GNP control is significant at the 1% level and indicates the size of a country's economy is positively related to the Total Value of Stocks Traded/GNP. Moreover, the Crisis Dummy variable is insignificant.

Omitting one of the investor protection measures in the other regression models does not change much. The overall adjusted R-Squared of the other models remains around the 45%, dropping to 43% when the Anti-director Rights variable is left out in model 3. In the third model the coefficient of the One Share One Vote Dummy becomes negative, but remains insignificant. The Rule of Law and the control variables all stay significant in model 2,3 and 4, except for the Crisis Dummy which remains insignificant.

Hypothesis 3e was formulated on the possible effect of a country's legal origin on the Total Value of Stocks Traded/GNP:

Countries with legal regimes of common law origin have higher total values of stocks traded as a percentage of GNP than countries with legal regimes of civil law origin.

Based on the results from table XVI, this hypothesis cannot be confirmed. The Civil Law Dummy is negative as expected, but it remains insignificant over all three regression models in which it is included. The significant value of the Rule of Law in all four regression models, indicates that this variable is a determinant of the Total Value of Stocks Traded/GNP. Also both control variables are significant in all four regression models. Because this study is the first to research the effect of legal origin on the Total Value of Stocks Traded/GNP, there is no literature to compare the results with.

4 6. Robustness

In this section two issues of robustness of the results are addressed. The first issue concerns the use of domestic credit to the private sector as a proxy of a country's debt market capitalization. Where the total market value of all outstanding shares of listed domestic companies is a universal manner to measure a country's equity market capitalization, a country's debt market capitalization has numerous ways in which it can be measured. The choice of domestic credit to the private sector as a proxy for debt market capitalization is highly debatable and it may be argued that the results of the Debt to GNP regressions are biased by this choice. Therefore, this study has tried two other measures of debt market capitalization; domestic credit provided by the financial sector and domestic credit to the private sector

by banks. Domestic credit provided by the financial sector includes all credit that is provided by the financial sector to various sectors on a gross basis, with the exception of credit to the central government. The financial sector includes monetary authorities and deposit money banks, as well as other financial corporations for which data is available. Domestic credit to the private sector by banks refers to the financial resources which are provided to the private sector by any depository corporations except central banks. These resources include loans, purchases (non-equity) securities, trade credits and also other accounts receivable, that establish a claim for repayment. The Debt/GNP regressions are rerun with the two other measures as a proxy for debt market capitalization. The conclusions that this study draws from the results of the initial Debt/GNP regressions are robust to these changes in the specification of the regressions.

The second robustness issue that is addressed is the possibility of a selection bias. One could argue that the selection of countries, that this study uses, gives rise to a selection bias and that the results of this study are biased. Therefore, also another selection of countries is used and all regressions are rerun with this new sample of countries. The new country sample is similar to the one used by La Porta et al. (2002) in their study on the effects of legal origin corporate valuation. This new sample includes 27 countries and does not include the less developed countries such as among others Kenya and Zimbabwe. These countries were included in the initial country sample. The conclusions that this study draws are robust with the results of the regressions with the new country sample.

7. Conclusion

This study started off with a literature review in which investor protection, legal origin and the effect of both on ownership structures, external finance and corporate valuation were discussed. Moreover, the literature review touched upon the convergence of common and civil law and certain real events that happened around the millennium. The convergence of laws and these real events may have caused the effects of legal origin to wither away after the millennium. This study has tried to investigate whether the effects of legal origin on ownership structures, corporate valuation and external finance still exist after the millennium, introducing several new measures of external finance and corporate valuation to research these effects. Now the results have been presented, the research question of this study can be answered:

Does legal origin affect firm valuation, ownership structures and external finance after the millennium?

First, the effect of legal origin on ownership structures is researched. This is done by looking at the mean ownership of the two largest shareholders in the ten largest publicly-traded domestic firms of a country. Financial firms and utilities firms are excluded from the sample. Earlier research indicates higher mean ownership in civil law countries than in common law countries. The results of this study on the effects of legal origin on ownership structures are inconclusive. The first regression without any additional

investor protection indeed shows a higher mean ownership concentration in civil law countries. However, when additional measures of investor protection are added to the regression, civil law countries no longer have significant higher Mean Ownership concentrations. In that regression, the level of law enforcement seems to be an important determinant of Mean Ownership structure. Therefore, there is no undisputed effect of legal origin on ownership structures found in this study.

The second part of this study focuses on the effect of legal origin on corporate valuation, proxying corporate value with Tobin's Q and Return on Assets. Earlier studies have found Tobin's Q to be higher in common law countries. This study endorses these findings. Not only does this study find that common law countries have significant higher Tobin's Q values, the results of this study also indicate that firms in common law countries have significant higher Return on Assets values than firms in civil law countries. Next to legal origin, law enforcement, firm size and the number of Anti-director Rights that is present in a country seem to be important determinants of Tobin's Q and Return on Assets.

The third and final part of this study addresses the effects of legal origin on five external finance measures. From these five measures, legal origin only has a significant influence on the number of listed of Listed Domestic Firms to a country's Population. Common law countries seem to have more Listed Domestic Firms than civil law countries. This study does not find a significant effect of legal origin on Debt and Equity Market Capitalization to GNP and also not on the Total Value of Stocks traded to GNP. An important effect that the results of these external finance regressions do suggest, is that the level of law enforcement has an important influence on these three external finance measures. Moreover, no determinants of a country's Risk Premium on Lending are found in this study.

The results of this study make it difficult to formulate an unambiguous answer to the research question. It is clear that the effect of legal origin on corporate valuation persists after the millennium and so legal origin does affect firm value after the millennium. However, legal origin seems to have lost its effect on ownership structures and external finance. Instead, the results suggests that a country's law enforcement quality is a more important determinant of ownership structures and external finance. Therefore, legal origin does not seem to affect ownership structures and external finance after the millennium.

As set out in the literature review, an explanation for the disappearing of some of the effects of legal origin after the millennium can be found in the convergence between common law and civil law or in certain real events that happened after the millennium. This study contributes to the existing body of literature on the convergence of laws in a way that apart from the legal impact of the convergence of laws, which has been studied extensively, this study shows that there also is an possible economic impact of convergence of laws. Moreover, this study contributes to the existing literature on legal origin and investor protection, because it questions long established effects of legal origin and provides results that support its critical view.

Some of the results of this study could have implications for public policy. Especially the important effects of law enforcement on different external finance measures, that this study shows, are interesting in this context. Features of law enforcement that are economically important are the severity of the penalties for financial misconduct in a country, the effectiveness of these penalties in deterring financial misconduct and the way in which financial misconduct is assessed. For example, the publication of findings of misconduct could have an important deterring effect. Also, whether or not the penalties for financial misconduct can be imposed on the responsible managers or only on the firm as a whole. When governments are keen to increase the development of their capital markets, this study shows that increasing the quality of law enforcement could be an important manner of reaching this goal. Governments could increase the fines for financial misconduct or create a “naming and blaming” culture by publicly assessing financial misconduct of both individuals and firms. Moreover, governments could expand the liability of the managers responsible for the misconduct and deter misconduct even more by imposing prison sentences or permanent limitation of functions.

8. Limitations

This study has some limitations which will be explained in the following section. First, the use of the Anti-director Rights and Creditor Rights indices as time invariant variables. These variables indicate the number of Anti-director and Creditor Rights that is present in a country. As this study uses panel data with a time period between 2001 and 2012, the number of rights that is present in a country could increase or decrease over time. This study has chosen to use these variables as time invariant variables, because there is no time series data available on these rights. This would implicate that if one wants the number of Anti-director or Creditor Rights to vary over time, one has to manually check the commercial law codes from every country for every year in the sample to see whether a country has gained or lost an Anti-director or Creditor Right. As this would be incredibly time consuming, this study uses the number of Anti-director and Creditor Rights from the indices of Spamann (2010) and Djankov et al. (2005) for every year in the sample, these indices are the most recent and use commercial law codes from 2006 and 2004 respectively. When the indices of Spamann and Djankov are compared to the initial Anti-director and Creditor rights indices by La Porta et al. (1998), that use the commercial law codes from 1994, only two countries have gained or lost Anti-director Rights and only three countries Creditor Rights in a time span of approximately ten years. Therefore, not much variation in the number of Anti-director and Creditor Rights present in a country is expected during the sample period of this study.

The second limitation of this study is the fact that no time series data is used when the effects of legal origin on ownership structures is researched. As mentioned before time series data was unavailable in databases that are accessible for this study. The Worldscope Database from which the ownership structures data is collected, only provides static information on ownership structures from either 2009 or 2010. As no other database that is accessible for this study supplies data on ownership structures,

there was no other option than to use the data from the Worldscope Database and perform the analysis with the 2009-2010 data.

A third limitation is the relatively limited amount of firms that is used to research the effects of legal origin on ownership structures and corporate valuation. Using only the ten largest publicly-traded domestic companies is possibly not a good reflection of all listed firms in a country and could result in a selection bias. The largest firms of a country are commonly value firms and because of that, there could be a lack of growth firms in the sample. The choice of the ten largest publicly-traded domestic firms is motivated by a lack of data especially in the South-American and African countries. The largest companies are often the companies of which most data is available. Moreover, the studies by La Porta et al. (1998, 2002) also use the ten largest publicly-traded domestic firms of the countries in the sample.

9. Future Research

The results of this study provide some interesting leads for future research. Of course the effects of legal origin on ownership structures after the millennium can be studied using panel data, when someone has access to databases that provide time series data on ownership structures. Also, this study researches ownership structures by cumulating the combined ownership stake of the two largest shareholders of firms, regardless of what kind of shareholder they are. There are differences in ownership, for example there is family ownership and insider ownership. In future research, the differences in ownership could be explained in more detail and the effect of legal origin on different forms of ownership can be studied. What is the effect of legal origin on family ownership or insider ownership?

Moreover, the important influence that law enforcement has on external finance, that results from this study, can be studied in more detail. One could study which aspects of law enforcement influence external finance the most. Research on the effects of the different aspects of law enforcement can also be extended to corporate valuation and ownership structures.

More qualitative research could zoom in on the exact explanations why economic differences between common law and civil law countries seem to differ away. Possibly there are other explanations for this phenomenon than the convergence between common and civil law and the real events that are mentioned in this study.

Furthermore, one could think of constructing a completely different sample of countries than the one used in this study to research the effects of legal origin. For example the effects of legal origin could be studied using a sample of only Asian countries or only South-American countries. Future research can also expand the sample of countries that is used in this study, nearly every countries in the world has a legal system that somehow originates from one of the two main legal origins. Also, the sample of firms that is used in this study could be expanded. One could think of studying the effects of legal origin on corporate valuation and ownership structures after the millennium by using the twenty or thirty largest

listed domestic companies of a country. One could also focus on the effects of legal origin on ownership structures and corporate valuation of non-listed firms. However, data on non-listed firms might be difficult to collect.

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Appendix

Table XVIII

Overview of the Standard Industrial Classification Codes

27

Table XVIII provides an overview of the different industries with the corresponding two-digit Standard Industrial Codes (SIC).

Industry	Code
103 Agriculture, Forestry & Fishing	01-09
Mining	10-14
Construction	15-17
Manufacturing	20-39
Transportation & Public Utilities	40-49
Wholesale Trade	50-51
Retail Trade	52-59
Finance, Insurance & Real Estate	60-67
Services	70-89

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