

Regulatory Competition in European Corporate and Capital Market Law:

An Empirical Analysis

Inaugural-Dissertation

zur Erlangung des Grades

Doctor oeconomiae publicae (Dr. oec. publ.)

an der Ludwig-Maximilians-Universität München

Volkswirtschaftliche Fakultät

im Jahr 2010

vorgelegt von

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Promotionsabschlussberatung: 1. Juni 2011

To My Grandfather, Gerhard

Acknowledgments

First of all, I would like to thank my two supervisors Professor Dr. Horst Eidenmüller and Professor Dr. Andreas Haufler for their support and inspiring comments. Moreover, I am very much indebted to Professor Dr. Andreas Engert, with whom I shared hours of exciting discussions about financial economics.

I am also grateful for the comments I received from Dr. Reiner Braun, Professor Robert Cooter, Ph.D., Professor Douglas Cumming, Ph.D., Dr. Matthias Dischinger, Professor Dr. Florian Englmaier, Tilmann Frobenius, Erich Gluch, Professor Dr. Florian Heiss, Beatrice Scheubel, Johanna Stark, Professor Pravin Trivedi, Ph.D., Dr. Felix Reinshagen, Markus Reps, Tilman Turck, Professor Dr. Joachim Winter and Dr. Klaus Wohlrabe. I furthermore thank Julie-Andrea Bartmuß and Tabea Herrmann for their excellent research assistance.

The German Research Foundation (DFG) granted financial support for the research project through the *Exzellenzinitiative*, which is something I gratefully acknowledge.

Special thanks go to my family and friends. In particular, I would like to thank Dr. Heike Hancock who encouraged and supported me with her loving solicitousness when I needed it most.

Lars Hornuf, Munich, December 2010

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Chapter 1

Introduction

1. Introduction

The virtues and drawbacks of government regulation have been subject to long-standing academic dissent. The proponents of government regulation have pointed to the fact that markets exhibit various types of malfunctions including monopoly power, negative externalities and asymmetric information. Starting with Arthur Pigou (1938) economists have argued that there is a *prima facie* case for state intervention once markets fail to perform efficiently. Government regulation could then serve as a remedy to counter the various market imperfections.

The notion that public regulation will achieve more efficient social outcomes has been increasingly challenged since the second half of the last century. Regulation was claimed to exacerbate economic inefficiencies instead of correcting them. The classic public choice theorists Gordon Tullock and George Stigler developed this argument from two different angles. The work of Tullock (1967, 1971) focuses primarily on the resources, which are wasted in the process of competitive lobbying for specific regulation, i.e. rent seeking. In his model, entrepreneurs will invest funds in the attempt to form a regulation backed monopoly up to the point where the marginal cost of lobbying equals the discounted return from the increased market power. Social inefficiencies would therefore not only arise from the formation of a monopoly, but also come from the fact that many companies cannot obtain a monopoly and waste resources in hopes of attaining one. Stigler (1971), on the other hand, is more concerned with the fact that firms which have already acquired market power may have strong incentives to restrict entry to their market. In his view, regulation creates a rent for incumbents if they are able to effectively exclude competitors from the market. Because governmental authorities are captured by the industry, they will decrease social welfare by artificially sustaining monopolies or cartels, which will in turn lead to a welfare loss.

In the late 1980s scholars have built upon these models by arguing that government officials may not only draft regulations for the benefit of the industry, but that regulation primarily exists to give bureaucrats the power to deny it and to take bribes

in return for permits (De Soto 1989; Shleifer and Vishny 1993). This strand of literature has been even more pessimistic regarding the merits of public regulation to increase social welfare. While in the rent seeking model of Tullock firms benefit from manipulating legislation by increasing the producer surplus, in what Simeon Djankov et al. (2002) call the ‘tollbooth view’ of regulation, the law solely creates additional costs to firms without providing any substantial benefit to them. The only beneficiary of regulation will be public administration, i.e. government bureaucrats.

The debate about the drawbacks of government regulation has opened up another field of research, which explores the different mechanisms by which firms can overcome costly regulations (Romano 1985; Peterson 1988; Becht et al. 2008; Eidenmüller et al. 2009b, 2010b, 2010c). Historically, physical exit was the only possibility to escape national laws. While in some areas of the law – as for instance in tax law – this is still the case, the applicable legal regulations can be chosen freely in other fields without firms having to physically exit the country. The activity of choosing a more suitable regulation without altering the underlying economics of a business transaction is aptly referred to as ‘regulatory arbitrage’ (Fleischer 2010). A highly illustrative example of regulatory arbitrage is corporate law. Over the period from 2004 to 2006 roughly 40,000 German start-up firms adopted UK company law, mostly because of the higher minimum capital requirement of the German alternative (Becht et al. 2008). Some other areas in which firms are allowed to choose from a variety of different legal regimes include contract law, bankruptcy law and the rules governing the proceedings of an arbitration court.¹

As in every other market, the demand for regulation is matched with supply. Jurisdictions advertise their regulatory products and react sensitively to changes on the demand side (Eidenmüller 2011).² States do so for various reasons, ranging from tax revenues to be collected from a flourishing legal service industry to the prestige

¹ For an overview see O’Hara and Ribstein (2009).

² To advertise their legal products, the English Law Society has published a brochure with the title “England and Wales – the jurisdiction of choice” available at: http://www.lawsociety.org.uk/documents/downloads/jurisdiction_of_choice_brochure.pdf. The German Ministry of Justice countered with a brochure entitled “Law made in Germany” available at: http://www.lawmadeingermany.de/Law-Made_in_Germany.pdf.

the legislative receives from the utilisation of national laws. Moreover, in the last decade transparency with regard to national regulation was achieved through various rankings of the law in different fields and for almost every country in the world. Two of the most frequently cited reports are the ‘Global Competitiveness Report’ of the World Economic Forum and the ‘Doing Business Report’ annually published by the World Bank / International Finance Corporation. By making national regulation easily comparable, jurisdictions face considerable pressure to engage in regulatory competition and to offer attractive legal products.

Whether regulatory competition leads to a socially superior outcome has not found a final answer yet. In the pure theory of fiscal federalism, Charles Tiebout (1956) has argued that legislation competes to attract consumers of the law by offering packages of services in return for different tax rates. In his view, the content of regulation would be matched effectively to the preferences of the consumers of the law. This notion has found support in the work of Ralph Winter (1977), Daniel Fischel (1982) and Roberta Romano (1987), who asserted – with respect to corporate charters – that competition between states would produce optimal legal rules rendering federal regulation dispensable and even harmful. In stark contrast, William Cary (1974) as well as Lucian Bebchuk and Assaf Hamdani (2002) have argued that corporate charter competition results in a ‘race to the bottom’, as a result of which the loosest standards will eventually prevail. Hans-Werner Sinn (1997, 2003) has recently come to a similar conclusion, stating that if government regulation is valuable in the first place (e.g. to overcome problems of collective action or asymmetric information) and then becomes subject to regulatory competition, an efficient equilibrium for such a competitive process does not exist. According to Sinn’s ‘selection principle’, regulatory competition will have adverse effects on social welfare, because unlike productive activities carried out by private agents, numerous (regulatory) products offered by the state are unsuitable for competition. In his view, this selection bias comes from the fact that the nation state intervened in the economy to correct for market failure. Regulatory competition will then revive the market’s malfunctions.

The conflicting arguments on regulatory competition that have been brought forward are the result of an analysis of various economic activities subject to multiple legal rules (e.g. corporate law, product standards, financial regulation). On the one hand, regulatory competition can provide an effective remedy to mitigate rent seeking and corruption by state officials. On the other hand, regulatory competition may reduce social welfare, if a strong state provides for government regulation which serves to correct market failures. The question whether regulatory competition leads to socially desirable outcomes or not depends thus on the economic domain subject to government regulation. Furthermore, to establish whether regulatory competition is socially desirable has to be decided on a case-by-case basis considering the empirical evidence available. This dissertation strengthens the factual basis by investigating the impact of regulatory competition in two highly relevant areas of business law: company law (chapter 2, 3 and 4) and the legal rules governing corporate debt securities (chapter 5 and 6). The following inquiry focuses on European jurisdictions. It applies advanced empirical models either to a new research context (re-incorporations in the legal form of the *Societas Europaea*) or to data that has not been used so far in the literature (cross-border corporate debt issues). Moreover, chapter 5 is the first study employing a panel gravity model to a law and finance context. Each of the following chapters can be read independently from the others as each was written as a stand-alone article with its own introduction and summary.

Chapter 2 is based on a joint research project with Reiner Braun, Horst Eidenmüller and Andreas Engert (Braun et al. 2010). The study focuses on how company law reforms, in particular the reduction or abolition of the minimum capital requirement, in various European jurisdictions affect the decision of entrepreneurs to incorporate in the legal form of a private limited liability company (LLC). Since the landmark rulings of the ECJ in the years 1999, 2002 and 2003, start-ups have been able to choose the country of incorporation independently of their real seat.³ As a result, the proliferation of the British private company limited by shares has posed a

³ See ECJ, Case C-212/97 *Centros Ltd. v. Erhvervs- og Selskabsstyrelsen* [1999] ECR I-1459; Case C-208/00 *Überseering BV v. Nordic Construction Company Baumanagement GmbH* [2002] ECR I-9919; Case C-167/01 *Kamer van Koophandel en Fabrieken voor Amsterdam v. Inspire Art Ltd.* [2003] ECR I-10155.

competitive threat to many European legislators. Using a difference-in-difference framework, we analyse whether the reforms adopted in Spain, France, Hungary, Germany and Poland have promoted the popularity of domestic legal forms and encouraged entrepreneurship more generally.

The analysis in chapter 3 was carried out in collaboration with Horst Eidenmüller and Andreas Engert (Eidenmüller et al. 2009a). It focuses on a new corporate legal form in the European Union, the *Societas Europaea* (SE). We find that after a slow start, the SE has become increasingly popular. Besides documenting the growth of this new company type, we examine whether firms choose to incorporate in the SE corporate form, because they engage in regulatory arbitrage by exploiting differences in legal rules between jurisdictions. We specify hypotheses on particular regulatory arbitrage motives. To validate the hypotheses, we use a broad telephone survey among SE users in Germany as well as a simple regression model based on a unique, hand-collected dataset on SE incorporations. We find strong evidence that firms use the SE to mitigate the effect of mandatory co-determination rules. Establishing a one-tier board structure (in jurisdictions that impose a two-tier structure on their national public companies) and taking advantage of the SE's mobility for tax purposes also seem to be driving SE formations. By contrast, the study fails to support the suggestion that firms use the SE to shop for the most favourable national company law to fill the gaps in the SE Regulation.

Chapter 4 is again joint work with Horst Eidenmüller and Andreas Engert (Eidenmüller et al. 2010a). The research project uses an event study methodology to analyse a unique dataset of publicly traded firms that have announced to re-incorporate under the SE Regulation. Even though the available data do not yet allow a reliable conclusion as to whether the new European Company appeals to diversified shareholders of public companies, the analysis reveals the general methodological difficulties and specific problems related to event studies in the European context. It further outlines an agenda for future research on the SE.

In chapter 5 the analysis turns to the last research project with Horst Eidenmüller and Andreas Engert (Eidenmüller et al. 2010b), taking the research focus to the regulation of corporate debt securities. In particular, we study the choice of issuer location and regulatory competition in the European corporate debt market. We find that, in absolute terms, Germany has by far the highest outflow of debt issues, while the Netherlands, the UK, Luxembourg and Ireland see the most inflows (in that order). We use a panel gravity model to investigate country specific factors attracting foreign subsidiaries as issuer. The data clearly support the prediction that the locational choice is positively influenced by a low withholding tax rate. There is also some evidence that corporate tax rates are of relevance. We do not find support for creditor protection rules in bankruptcy as a driver of cross-border debt securities issues. Hence, countries aiming to attract issuers are well advised to reduce their withholding tax rates – creditor rights seem not to matter.

Finally, chapter 6 is once again concerned with regulatory arbitrage regarding corporate debt securities. It takes a critical stance as to whether regulatory arbitrage, which is a necessary precondition for regulatory competition, can actually be attributed to an active choice by the consumers of a regulation as compared to mere path dependence in corporate decision making. Using a dynamic panel data model, I find that in the short run (one year) regulatory arbitrage is indeed subject to strong path dependence. The effect largely disappears after this period. The evidence shows, that path dependence is more intense (and persistent) regarding the corporate entity issuing the debt security and less pronounced with respect to the applicable contract law.

Chapter 2

Does Charter Competition Foster Entrepreneurship?

A Difference-in-Difference

Approach to European Company

Law Reforms

2. Does Charter Competition Foster Entrepreneurship? A Difference-in-Difference Approach to European Company Law Reform*

2.1. Introduction

Entrepreneurial activity is a key driver of economic growth and development. Workable policies to encourage business ventures are, therefore, in strong demand. In this regard, the entrepreneurship literature has recently taken a vivid interest in regulation as a potential constraint on start-up activity. The new line of inquiry originates from the more general research on the impact of law and regulation on economic development. The law and finance literature holds that ‘law matters’ for the financing of economic activities and hence for the comparative success of economies (La Porta et al. 1997, 1998). To make their case, law and finance scholars try to identify a link between legal rules and institutions in the various jurisdictions and economic performance. While their research has covered many fields of law and regulation, one major strand has been the ‘regulation of entry’ (Djankov et al. 2002). The World Bank has been foremost in promoting a strategy of legal reform to foster economic development. Since 2002, it has been monitoring the legal and regulatory conditions for ‘doing business’ in various economies (World Bank / International Finance Corporation 2010). The general claim of this research is that stricter regulation tends to stifle start-up activity. Yet its empirical underpinning is rather weak as it rests mostly on cross-sectional data (see the survey in Djankov 2009).⁴ Accordingly, it is hard to tell if less onerous regulation leads to more

* This chapter appeared under the same title in the ECGI working paper series in finance. We gratefully acknowledge helpful information on the relevant Polish reform from Anna Rojewska of the Morawski & Wspólnicy law firm (Warsaw). We are furthermore indebted to Scott Baker, Douglas Cumming as well as the participants in the CFS/LEMF Summer School “Law and Economics of Contracts”, the 8th Annual Conference of the German Law and Economics Association as well as the 6th Annual Conference of the Italian Society of Law and Economics.

⁴ For instance, in a cross-section of 95 countries, Klapper and Love (2010) report a negative relationship between the cost of incorporation (i.e. number of procedures, time and expenses) in 2004 and the average number of LLC incorporations relative to the working population during 2005-2009. Similarly, in their survey on more than 3 million companies in 21 European countries, Klapper et al. (2006) find that high costs of incorporation reduce the number of new firms. By contrast, using data from 39 countries, van Stel et al. (2007) find only the minimum capital requirement to bear a statistically significant relation with entrepreneurial activity while the number of procedures, the time and expenses needed for incorporation appeared to be irrelevant.

entrepreneurship or if countries with more start-up firms, for whatever reasons, tend to be less restrictive. Recently, Levie and Autio (2010) employ a panel of 54 countries from 2004 to 2008 to show that a very general measure of ‘regulatory burden’ (including aspects of labour and bankruptcy law) exerts a negative influence on entrepreneurial activity.

Major changes in European company law during the last decade provide the opportunity for a fresh look at the interaction of legal restrictions and entrepreneurial activity. With a number of groundbreaking decisions starting in 1999, the European Court of Justice (ECJ) enabled firms to opt out of the national company law of their home country and instead to avail themselves of the company law of another European Union (EU) member state.⁵ Legal constraints on company formation have ceased to be binding insofar as other company laws offer less restrictive rules. Conversely, states may find it in their interest to market their company law to foreign firms or, at the very least, to avoid losing their own firms to foreign jurisdictions. As a consequence, states can now compete for the company law most attractive to entrepreneurs and firms generally. Whether such regulatory competition leads to desirable results overall is an important policy question for European company law and the EU legislator. Evidently, if one were able to show that regulatory competition increases entrepreneurial activity, this would count as a substantial benefit. At the same time, it would validate the claim that ‘law matters’: If the opportunity to opt out of a restrictive legal regime causes more new firms to be set up then, apparently, cutting regulation is a way to foster entrepreneurship.

State competition in company law (‘charter competition’) has been around in the United States (US) for more than a century. Accordingly, there is a large amount of empirical work on state competition for large public companies’ charters in the US (for an extensive survey see Bhagat and Romano 2007). Surprisingly little effort has been devoted on incorporation choices of small firms. Notable exceptions in the

⁵ See ECJ, Case C-212/97 *Centros Ltd. v. Erhvervs- og Selskabsstyrelsen* [1999] ECR I-1459; Case C-208/00 *Überseering BV v. Nordic Construction Company Baumanagement GmbH* [2002] ECR I-9919; Case C-167/01 *Kamer van Koophandel en Fabrieken voor Amsterdam v. Inspire Art Ltd.* [2003] ECR I-10155.

recent US literature are Dammann and Schündeln (2008, 2009) and Kobayashi and Ribstein (2010). These studies do not, however, relate charter competition to the regulatory barriers faced by start-up firms. By contrast, Becht et al. (2008) provide a careful and highly influential analysis of the incorporation choices of entrepreneurial firms in the EU following the ECJ's landmark cases.⁶ Using a difference-in-difference method, they show that the United Kingdom (UK) attracted a large number of incorporations from other EU member states (but not from jurisdictions outside the EU unaffected by the ECJ's rulings). They also find that incorporations in the UK are driven mainly by the minimum capital required to establish a limited liability company (LLC) in other jurisdictions; the UK does not impose any such requirement. Evidently, start-up firms have taken advantage of the new opportunities created by the ECJ.

In this article, we revisit the matter and extend the analysis of Becht et al. (2008) in two important directions: After the ECJ unleashed charter competition, at least five European jurisdictions have enacted company law reforms to facilitate LLC incorporations. All reforms aim at reducing formalities or accelerating the process of establishing an LLC. Four out of five states decreased or abolished the statutory minimum capital, i.e. the requirement that shareholders must provide their LLC with a minimum amount of equity funding. The reforms seem to respond to the new competitive pressure exercised by less restrictive company law jurisdictions, notably the UK. Figure 2.1 depicts the average minimum capital over all national company laws in the EU, divided in two subsets: Jurisdictions adhering to the 'incorporation theory' permitted start-up firms – in principle at least – to incorporate abroad even before the ECJ's landmark decisions. Conversely, many European jurisdictions follow the 'real seat theory' and refuse domestic firms the right to incorporate out of state. The new ECJ case law effectively ruled out the 'real seat theory' in relation to other EU member states. It is suggestive that the 'real seat' jurisdictions maintained a markedly higher level of minimum capital before the ECJ exposed them to competitive pressure from other jurisdictions. After the rules of the game had changed, the average minimum capital declined in both groups of jurisdictions (the

⁶ In his survey, Djankov (2009) highlights Becht et al. (2008) as the 'most creative study linking business registration and entry regulation'.

ECJ struck down not only the ‘real seat theory’ but also impediments to out-of-state incorporations in certain countries following the ‘incorporation theory’). We evaluate whether, by enacting company law reforms, the five jurisdictions succeeded in defending their home market against competition from the main contender, the UK private LLC.⁷ Our study for the first time considers the supply-side of charter competition in the EU and its interaction with the demand side. We thus provide both more detail and support to the original findings of Becht et al. (2008).

Using a difference-in-difference approach, we show that EU member states can in fact promote their domestic LLC form by facilitating incorporations, particularly by cutting the statutory minimum capital. To this end, we collect time-series data on incorporations before and after the legal reforms in Spain, France, Hungary, Germany and Poland. Studying the effect of statutory amendments enables us to define a very clear-cut event, namely the specific day when the new law entered into force. Looking at five independent events in different countries during the decade from 2000 to 2010 should increase the external validity of our results.

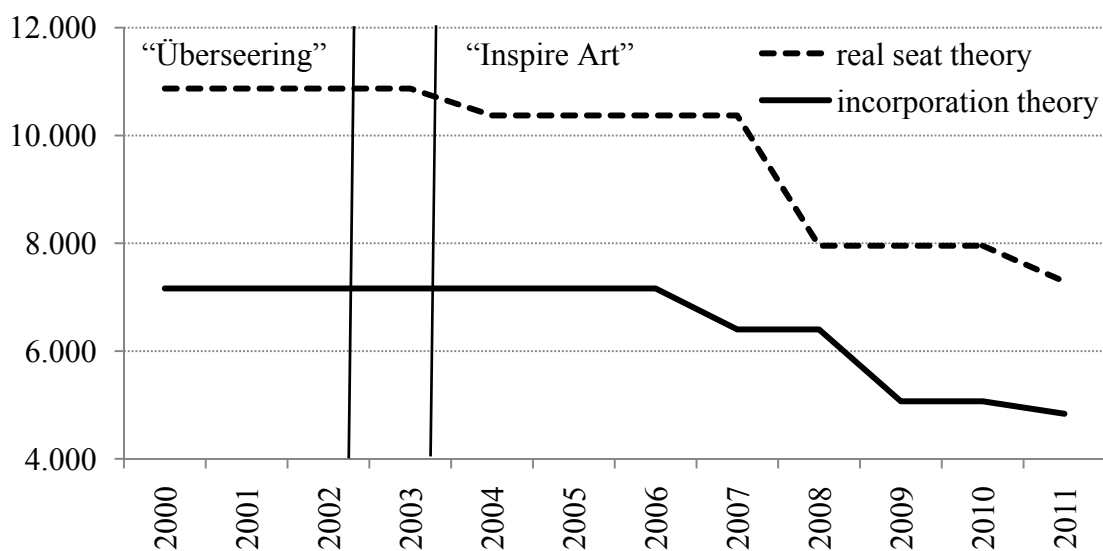


Figure 2.1 Average minimum capital requirement for private LLCs in the EU-27 by jurisdictions following the ‘real seat theory’ and the ‘incorporation theory’

⁷ Becht et al. (2008) show that one important reason for the UK’s leading position is the absence of a minimum capital requirement for private LLCs.

In addition, we confront the critical issue whether facilitating LLC incorporations actually increases the number of start-up firms. Becht et al. (2008) have shown that entrepreneurs from other EU member states have chosen to incorporate in the UK once the opportunity presented itself. Yet the rise in UK incorporations may have come at the expense of the domestic LLC forms in the entrepreneurs' home states. Also, entrepreneurs do not have to incorporate to start a business. They can establish a firm in the form of a partnership or in their own name, i.e. as a sole proprietor. To demonstrate that lower incorporation costs spur new firm creation, we consider the possible substitution effects. We do so for the five reform countries by looking at the effect not only on domestic LLC incorporations but also on partnerships and UK private LLCs. When we include these substitutes, the impact of the reforms tends to slightly weaken but generally does not vanish. Apparently, the reforms succeeded in stimulating start-up activity rather than just luring firms away from other legal forms. It follows that facilitating LLC incorporations may be a policy tool to foster entrepreneurship.

2.2. Entrepreneurship and the costs of registration

Our analysis starts from the fundamental choice whether to work as an employee or to start a new venture. This decision has often been modeled in the literature (see Lucas 1978 as well as Kihlstrom and Laffont 1979 for two early contributions), mostly to inform policy makers how to promote economic growth by encouraging entrepreneurship. The underlying assumption is that individuals choose the action that subjectively promises them the greatest utility (Eisenhauer 1995; Douglas and Shepherd 2000). Although individuals may derive their utility from multiple monetary and non-monetary factors, such as economic, personal, social, cultural and institutional determinants (Dreher and Gassebner 2007), we restrict ourselves to a very parsimonious setup. The main components of the individual utility functions are the existing assets of an individual denoted by A_0 , the expected net present value of future income resulting from the new firm $E(Y)$ or from her salary Y_0 in an employment, and a set of additional determinants C (e.g. the personal working conditions under each option). A simple decision rule is to choose self-employment if the utility exceeds the utility of employment in the wage sector:

$$U(A_0 + E(Y), C) > U(A_0 + Y_0, C) \quad (2.1)$$

The expected net present value from setting up a new business is derived from the stream of profits V_t in periods $t = 1, \dots, T$, discounted at some rate R :

$$E(Y) = \sum [(E(V_t) / (1 + R_t)^t] - K_0 \quad (2.2)$$

The expected value of starting a business declines with regulatory costs K_0 imposed by the government. Typically, there are direct regulatory costs of registering a new firm and operating it; examples include the notarisation of certain documents, the time needed for registration, financial reporting requirements etc. In addition, entrepreneurs may have to incur indirect costs such as a minimum capital requirement, i.e. an amount of equity funding that owners must pay or promise to pay when they establish the firm. While the firm can use the money to build its business,

the requirement nonetheless causes opportunity costs or costs of increased financial constraints of the owners (Becht et al. 2008).

Of course, on a more optimistic account regulatory costs may be justified by countervailing benefits. The registration process can serve as a screening process for start-up firms to ensure minimum standards of quality, including integrity and financial soundness. Restricting start-up activity can protect uninformed creditors and reduce information asymmetries (Cassar 2004; Storey 1994). More specifically, minimum capital requirements may sort out ‘necessity nascent entrepreneurs’ who start a business only to escape unemployment. Such entrepreneurs are less wealthy (Block and Wagner 2010) and therefore more strongly affected by registration costs (van Stel et al. 2007). At the same time, they have been shown to have no beneficial effect on technological development (Acs and Varga 2005). Stricter requirements can thus serve to prevent market failures and lead to socially superior outcomes, as the ‘public interest theory of regulation’ contends (Pigou 1938; Sinn 1997). The opposite view is that entry regulation serves mainly competitors and bureaucrats to extract rents (Djankov 2002). Accordingly, its effect is to stifle entrepreneurial activity without an offsetting gain. This perspective finds some support in the empirical literature referred to in the introduction.

In this paper, we cannot resolve the matter conclusively. What we can do is to provide new and strong evidence that registration costs do indeed have a significant impact on entrepreneurial activity. To this end, we consider entrepreneurial activity as the result of supply and demand for entrepreneurship in the economy (Casson 1995). The demand for entrepreneurship is the number of ‘entrepreneurial positions’ that can be filled in an economy (Choi and Phan 2006; Thornton 1999). Demand results from a variety of factors, e.g. the availability of entrepreneurial opportunities or the availability of appropriate financing such as venture capital (for a more comprehensive overview see Thornton 1999). The supply of entrepreneurship is determined by the pool of individuals which is ready to engage in self-employment (Choi and Phan 2006). The supply curve results from the individual decision rule as outlined in equations 2.1 and 2.2. Each point on the supply curve indicates the

number of individuals that perceive a higher utility from entrepreneurship than from dependent employment. As a consequence, the shape of the supply curve reflects regulatory costs K_0 as part of equation 2.2 (Figure 2.2). This motivates our first hypothesis that reducing the costs of registering (incorporating) LLCs should, *ceteris paribus*, increase the number of LLC incorporations by ΔQ_1 .

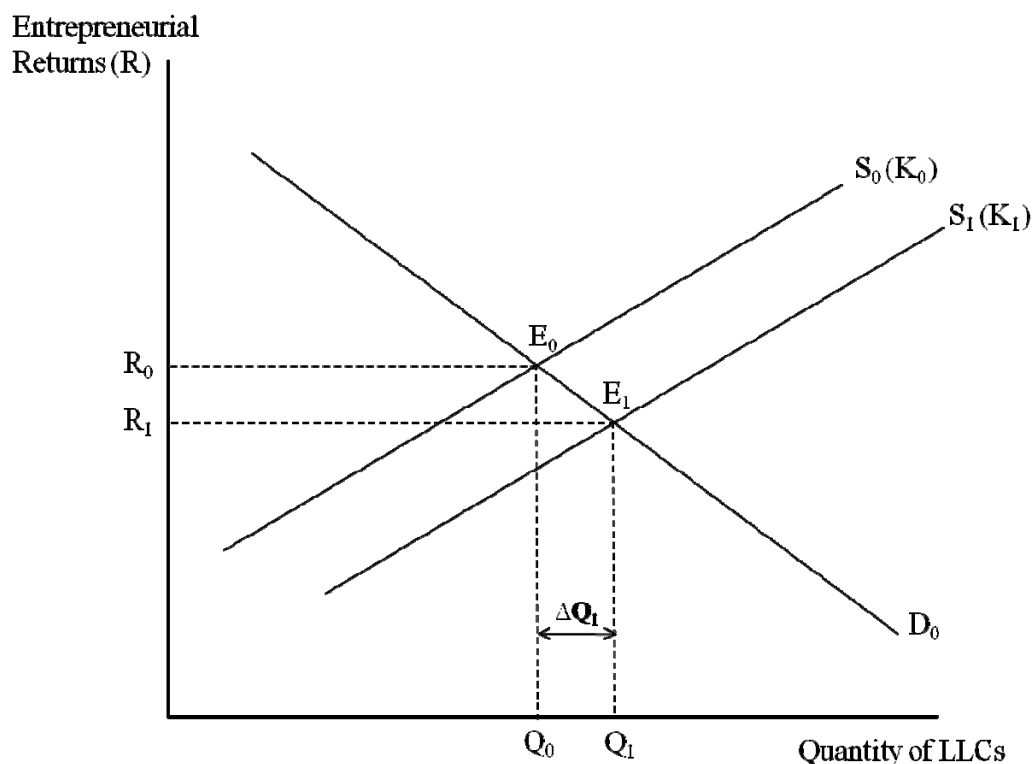


Figure 2.2 The reduction of incorporation costs (K) increases the quantity of domestic LLC start-up firms to Q_1

However, the number of LLC incorporations does not equal the number of start-up firms in the economy. Potential entrepreneurs face different options regarding the legal form to start a business. A new firm can take the form of a private LLC, a public LLC, a partnership or a sole proprietorship, to name the most important ones. While legal forms differ in important respects (e.g. personal liability, transferability of ownership, taxation), it is far from obvious that entrepreneurs are deterred merely because their most preferred legal form turns out to be too costly for them. It follows that slashing the regulatory costs of incorporating a private LLC, instead of creating new start-up activity, could simply redirect entrepreneurs from partnerships and sole proprietorships to the private LLC. Therefore, we need to take regulatory costs for

alternative legal forms into account. Registration costs K_0 can be thought of as a cost vector containing all relevant legal forms, including those offered by foreign jurisdictions such as the UK private LLC:

$$K_0 \{K_{\text{private LLC}}; K_{\text{public LLC}}; K_{\text{UK private LLC}}; K_{\text{partnership}}; K_{\text{sole proprietor}}; \dots\} \quad (1.3)$$

Hence, cutting LLC incorporation costs may shift the supply curve for entrepreneurial activity far less than suggested by Figure 2.2. As some entrepreneurs simply substitute the LLC for the legal form that they would have used before the reform, the effect on new firm creation can be much lower or nonexistent. Figure 2.3 suggests that the variable of interest to policymakers should be the rise in total entrepreneurial activity rather than just LLC incorporations. Our second and more critical hypothesis therefore is that a reduction in LLC incorporation costs increases the number of all start-up firms, irrespective of legal form, by ΔQ_2 .

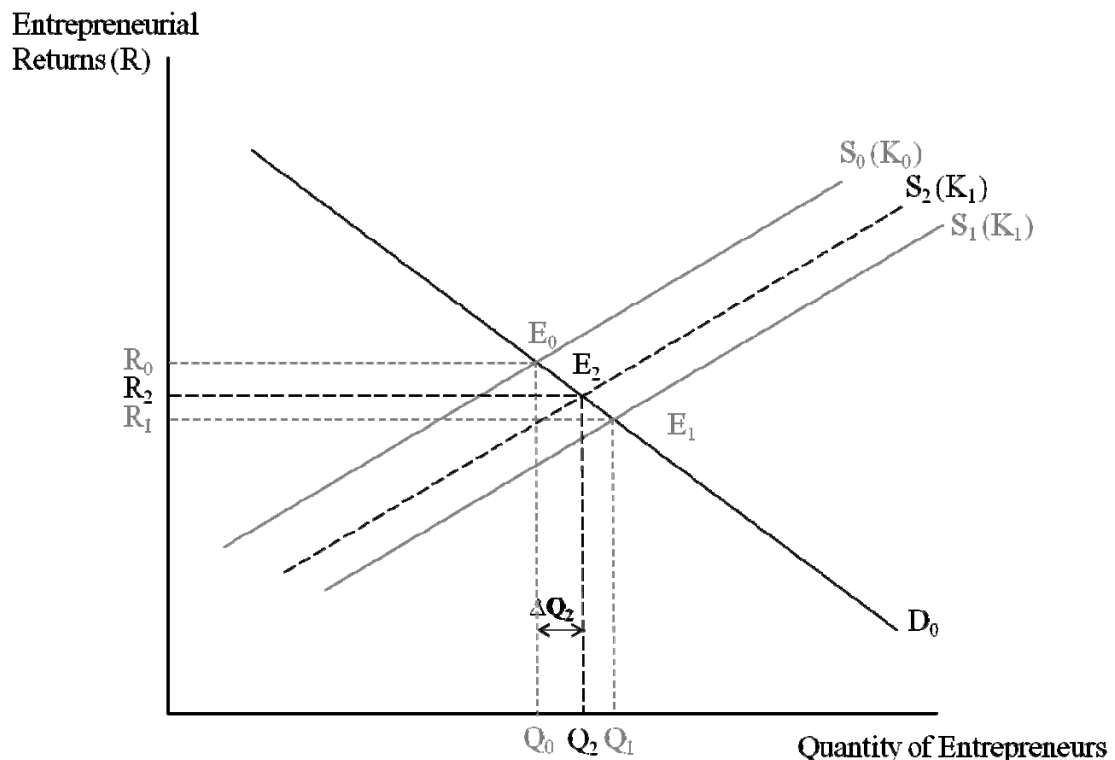


Figure 2.3 The reduction of incorporation costs (K) increases the quantity of all start-up firms to Q_2

2.3. Charter competition and company law reform in Europe

In the US, firms have always been free to choose in which of the states to incorporate because corporations were generally recognised by all other states (see Tung 2006; Yablon 2007). Some states soon discovered that they could generate tax revenues by adapting their corporation law to firms' preferences. 'Granting charters' for corporations became a service offered by state governments in a competitive market. By contrast, in much of continental Europe 'charter competition' arrived only at the turn of the millennium after a series of groundbreaking judgments by the ECJ (subsection 2.3.1.). Start-up firms were the first to take advantage of the newly available free choice of company law. Legislators in various EU member states have reacted by facilitating incorporation. The reforms of European company laws outlined in subsection 2.3.2. constitute the quasi-experiments that we study.

2.3.1. Recognising foreign companies: Real seat vs. incorporation theory

Suppose an entrepreneur intends to operate a coffee shop in Innsbruck, Austria. She would like to establish her firm as a LLC. Her default option would be to incorporate in Austria as a Gesellschaft mit beschränkter Haftung (GmbH, Austrian private LLC). However, Austrian company law requires her to invest a minimum capital of € 35,000 in the company as a precondition for incorporating and enjoying limited liability.⁸ The entrepreneur also learns that no such restriction exists under UK company law. Quite naturally, she would prefer to avail herself of this low-cost alternative. Yet Austrian law precluded this opportunity of evading the stricter requirement. Under the long-standing Austrian conflicts-of-law rule, a company is governed by the law of the state in which the 'real seat of its main administration' is located.⁹ Since the coffee shop is to be operated and managed in Innsbruck, the firm would be subject to Austrian company law. Incorporating in the UK would not have helped because Austrian courts refused to apply English law and hence to recognize

⁸ See § 6(1) Austrian Limited Liability Companies Act (*Gesetz über Gesellschaften mit beschränkter Haftung*).

⁹ See § 10 Austrian International Private Law Act (*Gesetz über das internationale Privatrecht*).

the firm as an English company. Instead, the entrepreneur herself would have been considered the sole proprietor of the firm, exposing her to full liability for all debts incurred on behalf of the firm.

The traditional Austrian conflicts-of-law rule exemplifies the ‘real seat’ (siège réel) theory which used to predominate in most jurisdictions throughout continental Europe. Obviously, the real seat theory is designed to prevent incorporators from choosing a company law of their liking. It protects national company laws against legal arbitrage and competitive pressure from other states. By contrast, other jurisdictions follow the ‘incorporation’ theory. Under this alternative conflicts-of-law rule, a company is governed by the law of the state in which it was incorporated. As firms can choose where to seek incorporation, the incorporation theory effectively implies free choice of the applicable company law. Under the incorporation theory, the entrepreneur mentioned above could establish a UK private company limited by shares (‘Ltd.’) even if she operated and managed her business only in Austria.

Yet the ‘real seat’ theory prevented most European firms, including Austrian firms, from incorporating in another state than that in which they were managed. This situation changed profoundly when the ECJ ruled that the ‘real seat’ theory violated the fundamental freedom of establishment laid down in the Treaty on the Functioning of the European Union (TFEU).¹⁰ As a consequence, jurisdictions following the ‘real seat’ theory must recognise companies established in another EU member state. The ECJ thus removed the main legal barrier against company law choice within the EU. Becht et al. (2008) show that a substantial number of firms from Germany and other continental European jurisdictions did use the new opportunities and opted to incorporate in the UK after the ECJ’s judgments. An additional study by Becht et al. (2009) provides evidence of remaining impediments to incorporating abroad in some member states. As the cost burden on legal arbitrage diminishes over time, the competitive pressure on national company laws is likely to increase.

¹⁰ For a recent overview and analysis see Bratton et al. (2009) and Ringe (2010). As of December 2009, Art. 49, 54 Treaty on the Functioning of the European Union contain the relevant provisions.

2.3.2. Company law reforms

We are interested in whether regulatory competition fosters entrepreneurial activity by lowering barriers for start-up firms. Given that firms quickly began using their newly gained freedom of choice, one would expect that jurisdictions engage in charter competition and at least try to keep domestic firms from using foreign law.¹¹ In fact, we observe that a couple of EU member states have reformed incorporation procedures and requirements after 1999. For some of them, the emerging market for company law has been a driver of change (Bratton et al. 2009; Schmidt 2008). Other legislators seemed less concerned with charter competition. For instance, the French and Spanish reform bills of 2003 did not mention the recent ECJ cases (Wachter 2003; Cohnen 2005). As Djankov (2009) documents, many countries all over the world have amended their company laws to facilitate incorporation. The legislative changes often alleviate requirements for incorporation documents and formalities (like the use of notaries) to speed up the process and save on expenses. They also tend to reduce or abolish minimum capital requirements. Reforms in EU member states thus not only respond to charter competition but also reflect a general trend towards deregulation (see European Commission 1997). In our analysis, we focus on the most radical changes since 1999: either a reduction of minimum capital requirements or the creation of a new type of private LLC specifically for start-up firms, or both. As of mid-2010, such far-reaching reforms have become effective in five EU member states: Spain, France, Hungary, Germany and Poland (Table 2.1). We choose these jurisdictions to study the impact of reforms on firm entry.

¹¹ According to Becht et al. (2008) at least 41,499 German start-ups adopted the British Ltd. in the period from 1997 to 2006, most of them from the year 2003 onwards.

Table 2.1 Company law reforms to facilitate LLC incorporations

Country	Enactment date	Effective date	Reduction of minimum capital?	New start-up company type?	Description of reform
Spain	1 April 2003	2 June 2003	No	Yes	New company type <i>Sociedad Limitada Nueva Empresa</i> (SLNE): electronic filing of incorporation documents; registration within 24 hours after filing; but notary still required; only natural persons can be shareholders of the SLNE
France	1 August 2003	5 August 2003	Yes	No	Minimum capital reduced from € 7,500 to € 1; electronic filing of incorporation documents; incorporators receive a provisional certificate of filing (no notary requirement under French law even before reform)
Hungary	15 June 2007	1 September 2007	Yes	No	Minimum capital reduced from HUF 3,000,000 to HUF 500,000 ^(I) ; electronic filing of incorporation documents; no notary required (but lawyer); registration within 15 days or 2 days if standard articles of incorporations are used
Germany	23 October 2008	1 November 2008	Yes	Yes	New company type <i>Unternehmergeellschaft (haftungsbeschränkt)</i> : minimum capital reduced from € 25,000 to € 1; but notary still required
Poland	23 October 2008	8 January 2009	Yes	No	Minimum capital reduced from PLN 50,000 to PLN 5,000 ^(II)

^(I) At an exchange rate of € 1 = HUF 287 (as of 23 July 2010), this corresponds to a reduction from around € 10,450 to around € 1,750.

^(II) At an exchange rate of € 1 = PLN 4.07 (as of 23 July 2010), this corresponds to a reduction from around € 12,300 to around € 1,250.

2.4. Methodology

2.4.1. Company law reforms as quasi-experiments

To identify the effect of the company law reforms on the formation of start-up firms, we conceive of the reforms as quasi-experiments. At first, we are interested in whether the legal changes make the domestic LLC more attractive to entrepreneurs. Therefore, our default treatment group consists of the domestic LLC form, for which we observe the number of incorporations at daily or monthly frequencies. The treatment consists of the reform. As entrepreneurs and their advisers knew of the changes in advance,¹² we consider the entry into force of the reform as the start of the treatment. Our default observation period is one year before and after this date. For this period, we have incorporation data in all of our five reform jurisdictions. This research design offers two technical advantages over the older study by Becht et al. (2008): First, the implementation of a national company law reform can be determined precisely. By contrast, the treatment in Becht et al. (2008) consisted of the ECJ judgments in *Centros* (1999), *Überseering* (2002) and *Inspire Art* (2003). It is hard to predict when the case law had been sufficiently established to encourage firms to use their new freedom of choice. Second, the ECJ rulings are only a single incident whereas we have the opportunity to consider five different events, which underscores the external validity of our findings.

Reforming the domestic private LLC may or may not increase its appeal but leaves another very similar legal form unaffected: the public LLC. We thus consider as the general population all *companies* (corporations), namely the private LLC and the public LLC. We use the public LLC as a control group because its key features closely resemble those of the private LLC: Both the private LLC and the public LLC are legal entities separate of their shareholders. They are managed by directors who need not be shareholders. Either company type shields its shareholders against personal liability for the firm's debt ('limited liability'). Perhaps most importantly, both are subject to corporate income tax. While one can find some of these features

¹² The amendments entered into force at least two months after their enactment in Spain, Hungary and Poland (see Table 2.1). As it takes several months or even years to pass a reform bill, entrepreneurs and their advisers have plenty of time to prepare for the new rules.

in certain partnerships as well, their combination is characteristic of companies (private and public LLC) and distinguishes them from other legal forms. As Meyer (1995) suggests, we confirm that the similarity of our treatment group (private LLCs) and our control group (public LLCs) is also borne out in the data: The daily incorporations of private and public LLCs correlate substantially before the respective reforms took place (Table 2.2).¹³ For all control groups, except for Hungary, we find very strong and positive correlations of 0.5 – 0.8 which are also highly statistically significant.

Table 2.2 Correlation between treatment and control group before the implementation of the company law reforms

Country	Basic treatment group	Control group	Correlation coefficient
France	SARL	SA	0.69***
Germany	GmbH	AG	0.58***
Hungary	Kft.	Rt.	0.02
Poland ⁽¹⁾	Sp. z o.o.	Sp. Akcyjna	0.81***
Spain	SRL	SA	0.51***

⁽¹⁾ Due to the data restrictions, we use the monthly frequencies.

Their similarity notwithstanding, private and public LLCs differ in certain respects. The public LLC is tailored to firms with a larger number of shareholders; its shares can be traded in securities markets (stock exchanges). As a consequence, the assignment into treatment and control group is not random, as a true experiment would require. However, for a quasi-experiment it is sufficient that legal forms can be thought of *as if* they were randomly assigned into treatment and control groups (Stock and Watson 2007). The main concern, therefore, is to ensure that the composition of treatment and control groups do not change as a result of the treatment itself (Angrist and Pischke 2009). A classic example of this potential pitfall

¹³ The correlation of public and private LLCs obviously depends on the degree the public LLC is used as a legal form by entrepreneurs, instead of being primarily serving as legal form for financial holding structures. For instance, the comparatively high correlation between SA and SARL in France might be attributed to the usage of the SA and SAS as legal form for business enterprises.

is the evaluation of labour market programs, where only the most motivated and talented individuals choose to participate. Under such circumstances the *as if* assumption does not hold anymore, with the quasi-experiment overestimating the program's success. In the context of our analysis, the decision of a firm to incorporate as a public LLC or as private LLC must be statistically independent from the treatment, i.e. the private LLC law reform. This condition is generally met: For an entrepreneur determined to establish a public LLC, it does not make a difference if he learns that the minimum capital for private LLCs has been slashed. Throughout the EU, incorporating a public LLCs requires a higher minimum capital than private LLCs (even before any private LLC reform).¹⁴ For the same reason, it is highly unlikely that the reform triggers entrepreneurs to switch from the private to the public LLC. Another difference between the two legal forms lies in the fact that, in many states, transferability of LLC shares is restricted whereas public LLC shares are tradable. Yet again, this aspect remained unchanged by the reforms and should thus not alter how firms are assigned to either the private LLC or the public LLC form.

Using the public LLC as a control group raises a problem in the two Eastern European reform jurisdictions. Hungary and Poland amended the legal rules not just for the private LLC but at the same time for the public LLC. Specifically, the minimum capital requirement was lowered for public LLCs as well (the *Rt.* and the *Sp. Akcyjna*, respectively). This implies that relying on the public LLC as a control group can lead us to underestimate the reform effect for the private LLC because the public LLC may also have become more attractive. However, the minimum capital requirement was lowered to a different degree for the private LLC and the public LLC. The discrepancy is quite large in Poland with a reduction to 1/10 for the private LLC (*Sp. z o.o.*) and to 1/4 for the public LLC (*Sp. Akcyjna*). In the case of Hungary, the minimum capital requirement was cut to 1/6 for the private LLC (*Kft.*) and to 1/4 for the public LLC (*Rt.*).

¹⁴ Under Art. 6(1) Second Company Law Directive 77/91/EEC, member states must require a minimum capital of at least € 25,000 for public LLCs.

2.4.2. Sample construction

The sample contains incorporations of firms over time and according to their legal form. By using this information we investigate how company law reforms and in particular the reduction or abolishment of a minimum capital requirement for private LLCs affect entry rates. For the three jurisdictions implementing company law reforms early on (Spain, France and Hungary), we rely on data from the AMADEUS database, which is processed and distributed by Bureau van Dijk. The AMADEUS data were also used by Becht et al. (2008), back then in the form of the FAME database (which is a sub-sample of AMADEUS containing only UK incorporations).¹⁵ For the more recent reform countries (Germany and Poland), we were able to obtain the data directly from the respective national company register.¹⁶ This approach ensures comparability with the earlier results of Becht et al. (2008) and allows us to check for the representativeness of the AMADEUS sample. Fortunately, we find that the AMADEUS data represents well the population data from the German company register.¹⁷ As incorporations are reported with a delay, particularly in the AMADEUS database¹⁸, we disregard the two most recent company law reforms in Denmark and Sweden. This leaves us with data on incorporations in Spain, France, Hungary, Germany and Poland (Table 2.3).

A major difficulty faced by Becht et al. (2008) was how identify the nationality of a firm. We largely rely on their approach and classify a *German Ltd.* as a company that has its directors as well as owners residing in and its business activities located in Germany.

Because we extend our analysis to the UK private LLC as an alternative to the domestic private LLC, we need to identify domestic firms that have chosen to incorporate in the UK. To this end, we largely adopt the approach of Becht et al.

¹⁵ We thank the LMU-ifo Economic and Business Data Center (EBDC) for providing us with the AMADEUS data.

¹⁶ We gratefully acknowledge the data on incorporations provided by the German Bundesanzeiger Verlag and the Polish Ministry of Justice.

¹⁷ The correlation coefficient for the private LLC is 0.44 and significant at the 1-percent level.

¹⁸ The ultimate source of the AMADEUS data is often Creditreform, a provider of credit information. This causes a time lag of around one year in the data provided by Bureau van Dijk.

(2008): We seek to classify an UK private LLC as a Spanish, French, Hungarian etc. firm if it carries out its main business activities in Spain, France, Hungary etc. The AMADEUS data contains the country of residence (as well as the full names and addresses) of all directors in UK LLCs. Based on this information, we calculate the total number of directors for each firm and the relative share of directors from a given country. We classify an UK private LLC as a firm from a particular country, say Spain, if a majority of directors reside in this country.¹⁹ Becht et al. (2008) show that this criterion provides a plausibly proxy for the location of a firm's business activities outside the UK. Only in the case of Germany did we obtain data on UK private LLC registrations directly from the commercial registers.²⁰

¹⁹ As a robustness check, we classify English private LLCs as foreign firms if all directors reside in the other country. We omit these results because they do not differ in substance from our reported findings.

²⁰ Foreign LLCs are required to register a 'secondary establishment' in the EU member state in which their management is located.

Table 2.3 Summary statistics – average daily incorporations of private and public LLCs in reform countries (standard deviations in parentheses)

Country	Private / public LLC	Private LLC	Public LLC	UK private LLC ⁽ⁱ⁾	Obs. period	Data source
France ⁽ⁱⁱ⁾	SARL / SA	120.1 (246.7)	2.7 (3.2)	0.05 (0.22)	2000 - 2008	AMADEUS sample
Germany ⁽ⁱⁱⁱ⁾	GmbH / AG	265.6 (93.8)	5.7 (3.6)	13.99 (11.11)	2006 - 2010	German Gazette
Hungary	Felelösségu Társaság / Részvénytársaság	36.2 (21.3)	1.3 (0.6)	0.06 (0.26)	2000 - 2008	AMADEUS sample
Poland ^(iv)	Sp. z o.o. / Sp. Akcyjna	53.3 (28.3)	2.6 (3.5)	0.15 (0.43)	2001 - 2009	Polish Ministry of Justice
Spain ^(v)	SRL / SA	173.0 (144.9)	6.8 (4.5)	0.86 (1.20)	2000 - 2007	AMADEUS sample

⁽ⁱ⁾ Germany: Data from commercial register. Other countries: AMADEUS data based on ‘majority of directors’ criterion.

⁽ⁱⁱ⁾ The French private limited liability company incorporations do not include EURL incorporations.

⁽ⁱⁱⁱ⁾ The German private limited liability company incorporations do not include UG incorporations.

^(iv) Since the Polish data is only available at a monthly frequency, we divided monthly incorporations by 30 to arrive at daily incorporations.

^(v) The Spanish private limited liability company incorporations do not include SLNE incorporations.

Table 2.4 Major legal forms in reform countries and the UK

Company forms and minimum capital requirements before reforms						
	Public LLC		Private LLC		Cooperative	
Germany	AG	€ 50,000	GmbH	€ 25,000 €	eG	€ 0
France	SA	€ 37,000 ^(I)	SARL	€ 7,500	SC	€ 0
			EURL	€ 7,500		
	SAS	€ 37,000 ^(II)				
Spain	SA	€ 60,101	SRL	€ 3,006	Sociedad Cooperativa	€ 1,803
Hungary	Rt	~ € 69,690 ^(III)	Kft.	€ ~ 10,450	Szövetkezet	€ 0
					Egyesüles	
Poland	sp. a.	~ € 25,000	sp. z o.o.	€ ~12,300	Spółdzielnia	€ 0
UK	Plc	~ € 57,007	Ltd.	€ 0	Cooperative	€ 0

^(I) Different minimum capital for publicly listed SA: € 225,000.

^(II) The minimum capital for the SAS has been cut to € 1 in 2008.

^(III) Different minimum capital for publicly listed Rt: ~ € 80,000.

Partnership forms and minimum capital requirements before reforms						
	Civil code partnership		General partnership		Limited partnership	
Germany	GbR	€ 0	OHG	€ 0	KG	€ 0 ^(IV)
France	SCI	€ 0	SNC	€ 0	SCS	€ 0 ^(V)
Spain	Sociedad Civil	€ 0	Sociedad Colectiva	€ 0	Sociedad en comandita	€ 0
Hungary	Polgári Jogi Társaság	€ 0	Kkt	€ 0	Bt	€ 0
Poland	s.c.	€ 0	sp.j.	€ 0	sp.k.	€ 0 ^(VI)
UK			General Partnership	€ 0	Limited Partnership	€ 0
			Joint Venture	€ 0	LLP	€ 0

^(IV) For KGaA: € 50,000.

^(V) For SCA: € 37,000; for publicly listed SCA: € 225,000.

^(VI) For sp.k.a.: ~ € 12,500.

2.5. Empirical findings

2.5.1. Descriptive statistics

Table 2.5 contains simple comparisons of daily incorporations before and after the respective reform date. In all reform countries, average daily incorporations increased considerably in the year after the reform came into force, most conspicuously in Hungary by around 85 percent. In Germany, incorporations are driven by the UG, for which the minimum capital requirement has been abolished. All private LLCs in the reform countries show two-digit growth rates with the exception of the German non-UG GmbH, which lost on average 3 percent after the reform went into force. The smallest increase in incorporations occurred in Spain, the only reform jurisdiction which did not cut the statutory minimum capital requirement.

Table 2.5 Average daily incorporations one year before and after company law reform and percentage change

Country	Legal form	Reform date	Pre reform	Post reform	Percentage change
Spain	SL	02.06.2003	187.7	212.3	+13.1
	SL (incl. SLNE)	02.06.2003	187.7	214.7	+14.4
France	SARL	05.08.2003	117.9	145.8	+23.7
	SARL (incl. EURL)	05.08.2003	138.4	175.3	+26.7
Hungary	Kft.	01.09.2007	20.7	38.3	+85.1
Germany	GmbH	-	268.1	259.7	-3.1
	GmbH (incl. UG)	01.11.2008	268.1	337.9	+26.0
Poland ⁽¹⁾	sp. z o.o.	08.01.2009	35.0	40.1	+14.5

⁽¹⁾ Since the Polish data is only available at a monthly frequency, we divided monthly incorporations by 30.

2.5.2. Does corporate law reform promote the domestic LLC form?

The simple comparison of daily incorporations (before and after the company law reform came into force) shows that private LLCs gained 14 to 85 percent in the five reform jurisdictions. Because these findings might only reflect a general trend in incorporations, the business cycle or other factors unrelated to the reforms, we apply a difference-in-difference approach. Given that a standard ordinary least squares estimator is hardly suitable for count data such as company incorporations (in particular as there are no negative incorporations), we estimate the following negative binomial model:

$$\Pr(y_{i1}, y_{i2} \dots y_{iT}) = F(\beta_1 \text{Treat1}_i + \beta_2 \text{PostReform}_t + \beta_3 \text{PostReform}_t * \text{Treat1}_i + \gamma_1 \text{IndustryOutput}_t + \sum d + \varepsilon_{it})$$

where the dependent variable y_{it} is the number of incorporations in the legal form i at a given point in time t . $F(\cdot)$ is a negative binomial distribution function as in Baltagi (2008). Treat1 is a dummy variable indicating whether the respective legal form was affected by the law reform. For the baseline specification, the treatment group consists only of the domestic private LLC. Therefore, Treat1 takes the following values:

$$\text{Treat1} = \begin{cases} 0 & \text{if } i \text{ is a domestic public LLC} \\ 1 & \text{if } i \text{ is a domestic private LLC} \end{cases}$$

PostReform is a dummy variable, which equals 1 for the period after the new company law entered into force and 0 for the period before. The coefficient of interest is the interaction term $\text{Treat1} * \text{PostReform}$ as it identifies the change in private LLC incorporations that is not reflected in a corresponding change in public LLC incorporations. IndustryOutput is the seasonally adjusted industry output, which serves as a proxy for the business cycle. We also include country dummies to account for time invariant country specific effects.²¹ In what follows, we report incidence rate ratios as they can be conveniently interpreted as multiplicative effect

²¹ In unreported specifications we have also included time dummies, which did not change our results.

or semi-elasticity. This implies that all estimates below one indicate a negative effect, while estimates greater than one reveal a positive relationship.

Table 2.6 Results of quasi-experiment – Promotion of domestic LLCs

	Spain	France	Hungary	Germany	Poland	General Sample	Subsample ⁽¹⁾
PostReform	0.89 * (0.08)	0.80 * (0.09)	1.89 *** (0.00)	0.76 *** (0.00)	0.69 *** (0.00)	0.92 (0.29)	0.84 * (0.06)
Treat1	35.00 *** (0.00)	123.17 *** (0.00)	79.75 *** (0.00)	44.12 *** (0.00)	25.13 *** (0.00)	48.82 *** (0.00)	56.11 *** (0.00)
PostReform*Treat1	1.28 *** (0.01)	1.59 ** (0.02)	0.98 (0.89)	1.65 *** (0.00)	1.66 *** (0.00)	1.49 *** (0.00)	1.48 *** (0.00)
IndustryOutput	-	-	-	-	-	1.00 * (0.08)	1.00 (0.36)
Log Pseudolikelihood	-6520.01	-5415.02	-3660.83	-5998.74	-240.39	-1517.15	-999.66
N	1462	1462	1462	1462	48	240	144
Frequency	day	day	day	day	month	month	month
Public LLC Reform	no	no	yes	no	yes	partly	none

Incidence rate ratios, robust standard errors, p-values in parentheses, country fixed effects. *, ** and *** indicate p-values of 10 percent, 5 percent, and 1 percent significance level, respectively.

⁽¹⁾ The subsample consists of Spain, France and Germany.

The estimates confirm a substantial effect of the company law reforms on the popularity of domestic private LLCs in France (+59%), Germany (+65%) and Poland (+66%). The effect for Poland may well have been underestimated given that the public LLC was reformed simultaneously. In the case of Spain, the increase in daily incorporations is again relatively small (+28%), which may be attributed to the fact that the Spanish reform did not affect the minimum capital requirement. We fail to find a significant reform effect for Hungary. As in Poland, Hungary facilitated incorporations of both private and public LLCs at the same time.²² In addition, the public LLC for some reason is a poor control group for private LLCs as incorporations of the two company types used to be barely correlated before the reform (see Table 2.2 above). In Spain, France and Germany, the reforms were confined to the private LLC so that the public LLC – the control group – remained entirely unaffected. In these three jurisdictions, the average treatment effect amounts to 48 percent. Including Poland and Hungary, the average treatment effect rises only slightly to 49 percent. Monthly industry output as a proxy for the business cycle has neither an economic nor a statistical impact on LLC incorporations.

2.5.3. Does corporate law reform promote entrepreneurship?

A rise in private LLC incorporations must not be confused with a growth in entrepreneurship. It may be that domestic private LLCs have only substituted other legal forms, such as partnerships or foreign private LLCs. In this case, the increase in incorporations of domestic private LLCs could partly or fully be offset by a decrease in newly formed partnerships or UK private LLC. To examine whether company law reforms create a positive net effect for entrepreneurship, we need to consider the relevant substitutes. We therefore estimate difference-in-difference as before, but with the treatment group now consisting of (domestic) private LLCs, general and limited partnerships as well as UK private LLCs:

$$\Pr(y_{i1}, y_{i2} \dots y_{iT}) = F(\beta_1 \text{Treat}_i + \beta_2 \text{PostReform}_t + \beta_3 \text{PostReform}_t * \text{Treat}_i + \gamma_1 \text{IndustryOutput}_t + \sum d + \varepsilon_{it})$$

²² Among other measures, the reform lowered the minimum capital requirement for the public LLC from HUF 20 million to HUF 5 million (i.e. from around € 69,690 to € 17,420).

where

$$\text{Treat2} = \begin{cases} 0 & \text{if } i \text{ is a public LLC} \\ 1 & \text{if } i \text{ is a domestic private LLC, partnership or UK private LLC} \end{cases}$$

Table 2.7 Results of quasi-experiment – Promotion of entrepreneurship

	Spain	France	Hungary	Germany	Poland	General Sample	Subsample ⁽¹⁾
PostReform	0.89 * (0.08)	0.80 * (0.09)	1.89 *** (0.00)	0.76 *** (0.00)	0.66 *** (0.00)	0.93 (0.50)	0.84 (0.17)
Treat2	8.80 *** (0.00)	31.16 *** (0.00)	27.19 *** (0.00)	12.48 *** (0.00)	7.42 *** (0.00)	13.15 *** (0.00)	13.78 *** (0.00)
PostReform*Treat2	1.28 ** (0.02)	1.59 ** (0.03)	0.78 (0.13)	1.58 *** (0.00)	1.56 (0.15)	1.38 * (0.06)	1.45 (0.11)
IndustryOutput	-	-	-	-	-	1.00 (0.52)	1.00 (0.80)
Log Pseudolikelihood	-10018.41	-9096.94	-7286.93	-11745.98	-13581.31	-3665.87	-3665.87
N	3655	3655	3655	3655	120	600	360
Frequency	day	day	day	day	month	month	month
Public LLC Reform	no	no	yes	no	yes	partly	none

Incidence rate ratios, robust standard errors, p-values in parentheses, country fixed effects. *, ** and *** indicate p-values of 10 percent, 5 percent, and 1 percent significance level, respectively.

⁽¹⁾ The subsample consists of Spain, France and Germany.

Including partnerships and UK private LLCs in the treatment group changes the earlier findings for some of the jurisdictions under consideration. The treatment effect for Germany is still highly significant but slightly smaller (+58%) than in the original setting. The results for France and Spain remain significant at the 5%-level and exhibit the same economic magnitude as before (+59% and +28%, respectively). At least for these three countries, our results strongly support the conclusion that facilitating private LLC incorporations leads to a net growth in start-up activity. By contrast, the treatment effect for Poland not only decreases somewhat in magnitude but also loses statistical significance. We attribute the loss in statistical significance to the fact that the data from Poland is only available at a monthly frequency. In the case of Hungary, the result turns out even more negative than before. Again, it may be that – for whatever reason – the public LLC is a bad control group for the creation of small start-up firms in Hungary. In both Poland and Hungary, reforms simultaneously aimed at making public LLCs more attractive, which tends to dilute the effect we measure based on public LLCs as a control group. The average treatment effect for the general sample decreases in magnitude (+38%) and remains only weakly significant, while the effects in the Spanish, French and German subsample declines somewhat less (+45%) but ceases to be significant at conventional levels. Again, the cross-country estimates are based on monthly incorporation data because we do not have daily data for Poland. This may be a technical reason for the loss in significance in the two broader samples.

2.6. Robustness: Germany

In the previous subsection, we have included certain partnership forms and the UK private LLC in our analysis to account for substitution effects with other legal forms. However, our data do not cover all available legal forms of doing business. For instance, a single entrepreneur can start a firm as a sole proprietor.²³ It stands to reason that a sole proprietor may have incentives to incorporate her business as a private LLC if incorporation costs are sufficiently low. We therefore investigate the robustness of our findings by including a certain class of sole proprietors, namely

²³ Another example are civil law partnerships in some jurisdictions, which are not registered and hence do not show up in our data.

‘registered merchants’ in Germany. A ‘merchant’ under German law is any individual conducting a for-profit business activity that does not consist of a liberal profession, farming and forestry, or the management of the person’s own wealth. As such, a merchant has to be registered in the commercial register (*Handelsregister*). We were thus able to obtain data on ‘registered merchants’ (*eingetragener Kaufmann*, e.K.) from the German commercial register. In addition to considering more legal forms, we extend the timeframe of our German sample to two years (instead of one year) before and after the reform. Based on this broader data, we estimate a similar model as in the previous subsection but with

$$\text{Treat3} = \begin{cases} 0 & \text{if } i \text{ is a domestic public LLC} \\ 1 & \text{if } i \text{ is a domestic private LLC, partnership, sole proprietor or UK private LLC} \end{cases}$$

Depending on the frequency of observations, we find our earlier results strongly confirmed. Taking registered merchants into account, the reform effect on German start-up firms remains almost unchanged (56% to 66 %).

Table 2.8 Robustness Germany: Two years before and after law reform / treatment group includes sole proprietor

	Germany	Germany
PostReform	0.74 *** (0.00)	0.72 *** (0.00)
Treat3	11.13 *** (0.00)	14.30 *** (0.00)
PostReform*Treat3	1.56 *** (0.00)	1.66 *** (0.00)
IndustryOutput		1.00 (0.96)
Log Pseudolikelihood	-32933.07	-2491.49
N	8668	392
Frequency	day	month

Incidence rate ratios, robust standard errors, p-values in parentheses. *, ** and *** indicate p-values of 10 percent, 5 percent, and 1 percent significance level, respectively.

As another robustness check Angrist and Pischke (2009) and Autor (2003) suggest to test for causality in the spirit of Granger (1969). We therefore specify a model

including lags and leads of the company law reform. If a decline in incorporations leads to the adoption of the new company law, lagged variables might provide evidence for reverse causality. To examine this, we extend our last specification for Germany by indicator variables for each of the three months before the reform, for the reform month itself and for the first and second month after the reform. A seventh dummy variable takes the value one in all months following the second post-reform month. Figure 2.4 shows that the effect of the three dummies for the pre-reform months are negative but not significant, with the third pre-reform month being close to an incidence rate ratio of one, as one would expect in the absence of reverse causality. Rather, the time pattern suggests that entrepreneurs anticipated the reform and waited to take advantage of lower incorporation costs. In contrast, the coefficients of all post-reform months are positive and highly significant. The fact that our dummy for the time from the third post-reform month onwards is positive and highly significant provides some evidence for the persistence of the effect.

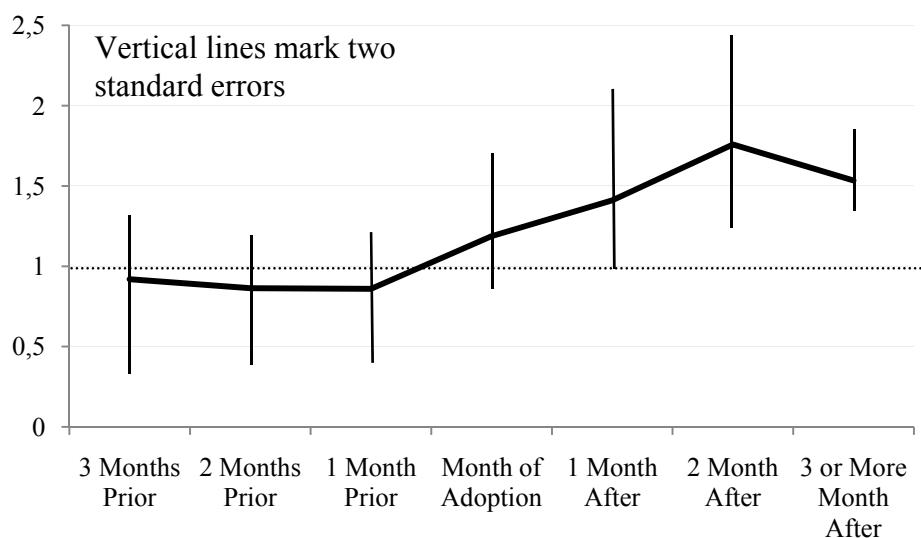


Figure 2.4 Results of quasi-experiment – Robustness Germany: Incidence rate ratios for pre-reform, reform and post-reform months

2.7. Summary and conclusion

Using a difference-in-difference approach, we study whether the company law reforms in Spain, France, Hungary, Germany and Poland have fostered the popularity of national legal forms. Generally speaking, the reforms appear to

encourage both LLC incorporations and entrepreneurial activity. Looking only at incorporations of domestic private LLCs, the legal changes have an effect in four out of five jurisdictions that is of statistical and economic significance, ranging from an increase by 28 percent to 66 percent. Only Hungary fails to produce a significant increase in incorporations. A likely reason is that the public LLC is a poor control group in this particular case;²⁴ based on the mere number of daily private LLC incorporations, Hungary witnessed the highest percentage increase of all reform countries (see Table 5). Of the four jurisdictions where we are able to demonstrate a significant effect, the surge in incorporations is greatest in France, Germany and Poland where the statutory minimum capital requirement was lowered or abolished. As to the effect on entrepreneurial activity more generally, we find that the legal changes not only boosted incorporations of private LLCs but also raised the total number of new firms. This result holds even if one takes possible substitution effects with UK private LLCs, partnerships and (in the case of Germany) ‘registered merchants’ into account.

These empirical results strongly support our theoretical predictions that reducing the costs of registering LLCs fosters incorporations as well as general start-up activity irrespective of legal form. Cutting regulatory costs of incorporating increases the expected value of doing business, shifting the supply curve to the right so that more individuals in the economy are willing to engage in entrepreneurship. There is, of course, an important caveat to our findings: While the reforms have evidently fostered the creation of new firms, we have little to say about their quality. It may be that lowering the regulatory costs of incorporations lures mostly incompetent or unproductive entrepreneurs. To examine whether regulatory restrictions serve a valuable screening role, one would have to track the success of the new post-reform start-up firms over time. However, what our evidence shows is that lower incorporation costs accomplish more than just inducing would-be entrepreneurs to switch to the private LLC in order to enjoy limited liability; they succeed in fostering overall start-up activity.

²⁴ Apart from the puzzling fact that private and public LLC incorporations are virtually uncorrelated in Hungary (cf. Table 2.2), the public LLC has been subject to a reform treatment at the same time as the private LLC.

Chapter 3

Incorporating under European Law: The Societas Europaea As a Vehicle for Legal Arbitrage

3. Incorporating under European Law: The Societas Europaea As a Vehicle for Legal Arbitrage*

3.1. Introduction

When Council Regulation (EC) No 2157/2001 on the Statute for a European Company (Societas Europaea – SE) became effective on 8 October 2004, the first supranational type of company entered the European stage. After one year, only 16 firms had ventured into the new territory. The European Company seemed to be the stillborn that many commentators had predicted. In the following years, however, the SE refuted the critics. With annual growth rates of around 100 percent, the number of European Companies had eventually increased beyond 200 by April 2008.²⁵ If SE incorporations continue at the same pace, more than a thousand firms will have chosen this European corporate form by the year 2010.

The SE's growing success raises the question of what is driving SE incorporations. In this article, we argue that legal arbitrage – exploiting differences between legal rules of different jurisdictions – is the primary motive for managers and shareholders to opt for the SE. Although the SE Regulation fails to provide a fully-fledged company law regime and refers many matters to the laws of the Member States, there might still be enough scope for legal arbitrage to render the SE more attractive than domestic companies of at least some Member States.²⁶ Since the European legislator created the SE to facilitate business activity in the European Union (EU) internal market, it seems straightforward (and even trivial) that the SE should offer certain

* A published version of this chapter appeared under the same title in the *European Business Organization Law Review* 10 (March 2009): 1-33. © 2009 by TMC Asser Press. All rights reserved. It was reprinted in the conference volume *The Law and Economics of Corporate Governance* edited by Alessio M. Paces. © 2010 by Edward Elgar Publishing. We would like to thank the 26 interview participants without whom this project would not have been possible. Furthermore, we are indebted to John Armour, Matthias Dischinger, Andreas Haufler, Tobias Tröger, Joachim Winter, Klaus Wohlrabe and participants in the Public Economics Seminar at the University of Munich, the Conference on Changing Perspectives on Corporate Law and Economics at the Erasmus University Rotterdam and the Conference on New Developments in Law and Economics at the University of Innsbruck.

²⁵ See *infra* sections 3.4.1. and 3.5.1.1.

²⁶ By transferring the registered office to another Member State, the SE can also be used to shop for the most favourable gap-filling company law, see *infra* our hypothesis H3.2 in section 3.3.

advantages over national companies, particularly with a view to cross-border corporate mobility. Some commentators have even suggested that the opportunities for legal arbitrage extend far beyond the advantages envisaged by the European legislator. In their view, firms can use the SE corporate form to escape various restrictions of Member State law, even ones that do not relate to cross-border mobility (Enriques 2004a; Reichert 2008). By contrast, others have argued that the absence of specific tax rules for the SE as well as the complexity of the incorporation process work against potential cost savings and hence against legal arbitrage (McCahery and Vermeulen 2005; Bratton et al. 2009). Whether and in what regard the SE is indeed an attractive vehicle for legal arbitrage is an open and empirical question.

In attempting to resolve this question, we cannot rely on a large dataset that would allow us to apply advanced econometric techniques. Therefore, we decided to follow a dual empirical strategy. This approach allows us to compare the results of two distinct methods and to evaluate the robustness of our findings. In a first step, we conducted a structured telephone survey among German SE users²⁷ to ask them about their motives for choosing the European corporate form. In a second step, we broadened the scope of the analysis to the European Economic Area (EEA) by using a simple ordinary least squares (OLS) regression model. Both approaches are based on a unique dataset drawing on information from national company registers as well as the Official Journal of the European Union (OJEU).

We find that the SE enjoys increasing popularity only in some jurisdictions. The evidence indicates that the domestic regulatory environment has a strong impact on SE formations. Legal arbitrage seems to be a primary motive for entrepreneurs to use the new supranational legal form. More specifically, we find strong evidence that mandatory worker co-determination is driving SE incorporations – firms seek to reduce the effect of such co-determination regimes. The option to transfer the registered office, the availability of the one-tier board structure and the opportunity to consummate a cross-border merger also seem to explain SE formations.

²⁷ See *infra* section 3.4.2.

The article is structured as follows: section 3.2. gives a brief overview of the literature on corporate charter competition and legal arbitrage. In section 3.3., we suggest five hypotheses on the driving forces behind SE formations that guide our empirical analysis. Section 3.4. introduces the dataset and the methodology used. The empirical results are presented in section 3.5. Section 3.6. concludes.

3.2. Literature

Legal arbitrage can be defined as taking advantage of differences between legal regimes governing the same economic activities (or close substitutes). In the case of company law, legal arbitrage may occur especially when firms can choose to incorporate in different jurisdictions without having to relocate their business activities. Corporate law arbitrage is a demand-side precondition for charter competition among jurisdictions: if firms do not react to differences in company law, there is no point for jurisdictions in competing for incorporations.²⁸ Legal arbitrage, therefore, bears on the longstanding academic debate on charter competition. As is well-known, Cary (1974) argued that corporate charter competition resulted in a ‘race to the bottom’ and thus justified federal intervention. The opposite claim was made by Winter (1977), who asserted that competition between states would tend to produce optimal legal rules, rendering federal regulation dispensable and even harmful. The debate has since then not led to firm conclusions. Evaluating the literature after twenty years, Bratton (1994) depicts corporate charter competition as a race to ‘nowhere in particular’, benefiting some stakeholders but not others. It has also been claimed that the dominant position of Delaware is mainly due to network effects (Klausner 1995) and not the result of superior corporate law. The empirical evidence on the effects of charter competition in the United States is similarly inconclusive. To analyse the efficiency of competing corporate law regimes, event studies have been used to determine how reincorporations – typically to Delaware – affect firm value. The available evidence tends to confirm that reincorporations

²⁸ Note that legal arbitrage is not sufficient for charter competition (see Enriques 2004a): despite arbitrage activity, jurisdictions can still choose not to compete, e.g. because they lack incentives to attract incorporators or due to interest group pressure. Moreover, while ‘legal arbitrage’ is sometimes employed in a pejorative sense, we use it as a purely descriptive term.

enhance shareholder value as measured by stock prices (Romano 1993),²⁹ indicating that charter competition may lead to more efficient corporate law. However, the fact that Delaware offers relatively strong anti-takeover protection and that these provisions seem to be driving incorporations has shed doubt on these results (Bebchuk and Cohen 2003).

Until recently, charter competition was mostly irrelevant in the EU/EEA. European company law has been characterised as a long-term non-compete agreement among Member States (McCahery and Vermeulen 2005) under the influence of intense interest group pressure (Carney 1997). Beginning in 1999, a line of cases decided by the European Court of Justice (ECJ) has fundamentally transformed the corporate law landscape. Under the new case law, firms can incorporate in any Member State even if their business activities are located elsewhere in the EEA. Also, while transferring the registered office of an existing company to a different jurisdiction used to be difficult or even impossible (Enriques 2004b), the enactment of Cross-Border Merger Directive 2005/56/EC and its transposition into Member State law will greatly facilitate such reincorporations. The emergence of charter competition in Europe is discussed, among others, by Eidenmüller (2007) and Tröger (2005). Empirical work on legal arbitrage and charter competition in Europe is sparse. A thorough and highly influential analysis is due to Becht et al. (2008). They identify minimum capital requirements and the regulatory burden on start-ups as a major driver for choosing a foreign corporate law. Apart from this, the empirical literature is confined to the burdensome task of collecting descriptive statistical data (e.g. Niemeier 2007; Eidenmüller 2007).

The advent of the SE has extended the menu of options for incorporators. It has been suggested that the SE is an attractive vehicle for legal arbitrage, enabling firms to shop for a more favourable corporate law as well as to save on corporate taxes by moving to a different tax jurisdiction (Enriques 2004a; Reichert 2008). Indeed, the SE corporate form facilitates cross-border mergers as well as a transfer of a company's registered office; it allows public companies to switch to a one-tier board

²⁹ Using a different methodology, Daines (2001) also provides evidence in favor of Delaware; against him Subramanian (2004).

system, to reduce the size of supervisory boards in large firms and to avoid worker co-determination or freeze the existing level of co-determination in medium-sized firms (Reichert 2008). So far, there is only anecdotal evidence on whether and to what extent firms have exploited these potential advantages of the SE. Some commentators are sceptical as to its legal arbitrage potential. Bratton et al. (2009) claim that the SE has opened the door, but not widely enough to serve as a vehicle for legal arbitrage. They argue that switching to the SE is too expensive and future benefits for firms are largely uncertain.

The demand for the SE and whether it is driven by legal arbitrage (rather than, say, the SE's European image) has not been subjected to rigorous empirical scrutiny. Again, most empirical contributions have focused on keeping track of the number and regional dispersion of incorporations (Bayer and Schmidt 2008; Eidenmüller et al. 2008). In this respect, the website of the European Trade Union Institute in collaboration with the Hans Böckler Foundation now provides an up-to-date overview of SE incorporations that can be accessed at a fee.³⁰ Keller and Werner (2007, 2008) survey the design of worker co-determination adopted in individual SEs, thus providing case study evidence on one important aspect of legal arbitrage. A more comprehensive empirical analysis on the reasons for incorporations under European law and, more specifically, the use of the SE as a vehicle for legal arbitrage is still lacking. It is to this that we now turn.

3.3. Hypotheses

The SE is in many respects comparable to a national public company. The taxation, insolvency rules and even a great deal of the applicable corporate law are rather identical to an entity established under national law. Nevertheless, there are some crucial differences that make the SE a convenient vehicle for legal arbitrage. We will consider in turn the factors that seem likely to influence SE formations and formulate testable hypotheses.

³⁰ See <http://www.worker-participation.eu>.

Setting up a company inevitably involves paying fees and carrying a certain bureaucratic burden. The SE is no exception. As with any firm, incorporation costs³¹ should be expected to hamper SE formations.³² Depending on the method used and the size of the company, the costs of switching to the SE corporate form can be significant: Allianz SE and BASF SE have estimated their reincorporation costs at € 95 million and € 5 million, respectively.³³ From a legal arbitrage perspective, the most interesting question to ask is whether SE incorporation costs *differ* from those of competing national company forms. For instance, if an SE were less costly to incorporate than a company under Member State law this would constitute an additional opportunity for legal arbitrage. Differences in incorporation costs have been shown to be a major driver of demand in charter competition between national jurisdictions (Becht et al. 2008). If, on the other hand, the European Company faces relatively higher set-up costs, the advantages offered by the SE must be larger to overcome this additional hurdle.

Founding a European Company requires registration in the company's home state. At first blush, this would seem to preclude any difference in incorporation costs between the SE and the national companies of its home state.³⁴ However, there are reasons to suspect that setting up an SE is more difficult and hence more costly because company registers and advisers are less familiar with it. Other things being equal, the European Company should flourish in jurisdictions that impose a relatively low excess burden on SE incorporations. We therefore hypothesise that the

³¹ We define 'incorporation costs' as the expenses, delay, risk and loss in flexibility incurred for setting up a company. A minimum capital requirement imposes incorporation costs in the sense that it restricts the company's flexibility. Of course, the amount of the minimum capital *as such* does not constitute a cost as it can be invested by the company.

³² See Djankov et al. (2002) providing evidence that a higher regulatory burden on firm entry results from rent-seeking by politicians and bureaucrats rather than from an attempt to remedy market failures.

³³ In the case of Allianz SE it should be noted that the conversion was consummated as part of a major cross-border merger, which would always entail considerable transaction costs.

³⁴ Of course, incorporation costs can be reduced by registering the SE in another (low-cost) Member State. However, this would require (re)locating the company's head office in the state of incorporation, see SE Regulation, Article 7 and 64. Also, an existing company cannot be merged into an SE without the involvement (and hence the regulatory cost burden) of its home state, cf., SE Regulation, Article 25. If the company is converted into an SE under SE Regulation, Article 2(4) and 37, it cannot, at the same instance, transfer its registered office to another Member State, SE Regulation Art. 37(3). For all of these reasons, we only consider *domestic* SEs as an alternative to *domestic* national companies.

difference in incorporation costs between the SE and national companies has an influence on the number of SEs in a country.

H1: The excess costs of incorporating an SE as compared to incorporating a national company have a negative impact on SE formations.

Before incorporating as a European Company, management and employees are required to negotiate the terms of worker representation in the firm. Although employees can, under certain conditions, insist on preserving the level of board representation that prevailed before reincorporation as an SE, other less stringent or more flexible arrangements can be agreed upon (SE Employee Involvement Directive,³⁵ Article 4(2), (3), Article. 7(2)). Even if pre-existing worker co-determination remains untouched, the SE will not be subject to size thresholds for enhanced co-determination requirements under national law.³⁶ For instance, if an SE is situated in Germany and grows beyond 2,000 employees, it does not come under the enhanced ‘equal co-determination’ regime (cf., German Co-Determination Act (Mitbestimmungsgesetz) §1(1)). Also, employees can only (if at all) insist on the same *proportional* representation on the board whereas board size and hence the number of employee representatives can be reduced (cf., SE Employee Involvement Directive, Annex Part 3 lit. b (‘proportion’)). The European charter can thus be used to loosen the grip of national co-determination laws. It seems plausible that shareholders and (perhaps) managers may seek to do just that (Charny 1991). Consequently, we expect them to use the SE as a vehicle to reduce the influence of national co-determination rules or even as an instrument to avoid them completely (where possible). Hence, the SE should be more popular in countries that have mandatory worker co-determination.³⁷

H2: Countries with mandatory worker co-determination rules exhibit more SE formations.

³⁵ Council Directive 2001/86/EC supplementing the Statute for a European company with regard to the involvement of employees.

³⁶ This follows from Article 13(2) of the SE Employee Involvement Directive, which precludes the general Member State rules on employee representation at board level.

³⁷ Furthermore, companies using the legal form of the SE should tend to have less stringent co-determination rules than comparable national corporations.

The European legislator designed the SE specifically to cater to the needs of cross-border business activity in the internal market. It is therefore no surprise that the European Company facilitates corporate mobility within the EEA. Community law enables the SE to transfer its registered office to another Member State. National companies do not enjoy this freedom (Ringe 2007). This possibility, in and of itself, constitutes an advantage of the SE corporate form. Yet the ability to move freely throughout the internal market seems to be just a natural corollary of the SE being the product of Community legislation. It is more interesting to ask whether mobility between Member States offers additional opportunities for legal arbitrage between *national jurisdictions*. Perhaps most importantly, the corporate tax burden can differ significantly depending on where the company is located. Firms could use the SE corporate form to exploit differences in tax treatment by transferring the company's seat to a more favourable jurisdiction.

However, cross-border corporate mobility is not an exclusive privilege of the European Company. Due to the recent ECJ's case law, national companies are no longer barred from conducting all or part of their business activities abroad provided that their home state permits such a move.³⁸ As a company's residence for tax purposes is usually determined by the place of its 'real seat' or effective management (instead of the registered office or applicable corporate law),³⁹ moving to a favourable tax jurisdiction does not necessitate a transfer of the registered office. In addition, after the adoption of the Cross-Border Merger Directive in 2005 and its transposition into Member State law, national companies will be able to merge into an empty (special purpose) company of the target jurisdiction, thereby switching the applicable corporate law and – by consequence – transferring the registered office.

While the SE's advantage over national companies has waned, it is, or may have been for some time, the safest choice to ensure corporate mobility within the EEA. When a national company relocates only its head office to another Member State, it

³⁸ The home state can prevent its companies from shifting their head office abroad, see ECJ, Case C-210/06 *Cartesio Oktató és Szolgáltató bt* [2008].

³⁹ Cf., Art. 4(3) of the OECD Model Convention with Respect to Taxes on Income and Capital (as it reads on 15 July 2005).

still faces uncertainty over not only its tax treatment but also other matters of, *inter alia*, company and insolvency law.⁴⁰ Full-blown reincorporation has been made possible only recently; even now, the Cross-Border Merger Directive has not been implemented in all Member States. In view of these pitfalls and ambiguities, a tax-related demand for company mobility may have driven (and may continue to drive) SE formations. As using the SE corporate form facilitates relocation in the future, we conjecture that jurisdictions with comparatively inauspicious tax conditions will exhibit more SE incorporations:

H3.1: More SEs will be formed in jurisdictions with less favourable company taxation.

Apart from company taxation, Member State jurisdictions also differ in other important aspects. Legal scholars have been particularly interested in how the SE can be used to engage in company law arbitrage (Bratton et al. 2009; Enriques 2004a). Although the European Company owes its existence to Community law, it is in great part governed by national company law rules because the SE Regulation often makes reference to the company law of the SE's home state, i.e. the national jurisdiction of the company's registered office.⁴¹ Shareholders and management can choose a jurisdiction to fill the gaps in the SE Regulation by transferring the registered office to the respective Member State. This might be a motive for choosing the SE in the first place. However, the choice for a particular gap-filling law cannot be made in isolation. As a tribute to the 'real seat theory', Article 7 of the SE Regulation requires the registered office to be in the same Member State as the company's head office. While the same requirement applies, of course, to tax-induced relocations, incentives to exploit differences in company law might be weaker. While we tend to be agnostic, our working hypothesis is the following:

H3.2: Firms incorporate in the SE form to shop for an attractive gap-filling company law.

⁴⁰ For instance, German companies still run a considerable risk of forced dissolution when shifting their head offices abroad. The issue is being addressed by §4a GmbHG, §5a AktG as amended by the 2008 Act to Modernise Private Company Law and to Combat Abuses (Gesetz zur Modernisierung des GmbH-Rechts und zur Bekämpfung von Missbräuchen, MoMiG). On the European level, Art. 3(1) sentence 2 of Council Regulation (EC) No. 1346/2000 on insolvency proceedings establishes a presumption that the centre of a (company) debtor's main interests coincides with its registered office.

⁴¹ Cf., the general reference in SE Regulation, Article 9(1)(c)(ii).

The SE Regulation itself offers individual companies a choice between a governance structure with one single board of directors (ineptly referred to as ‘administrative organ’ by the Regulation) or a separation between a management board (‘management organ’) and a supervisory board (‘supervisory organ’). By contrast, only few European jurisdictions give firms a choice between the one-tier and the two-tier board structure. Since the one-tier structure involves only a single corporate body, one would expect it to be less costly, at least with respect to direct costs. Start-up companies and closely held firms can gain flexibility and save on board compensation while for them a separate supervisory board often does not accomplish much in terms of reducing agency costs. Hence, we hypothesise that the SE is especially attractive in countries that (with respect to public companies) provide solely for the two-tier system.

H4: The sole availability of the two-tier board system in a jurisdiction has a positive impact on SE formations.

Finally, before the Merger Directive was enacted in 2005, the SE Regulation offered the only safe way to accomplish a transnational merger. This was no doubt a motive for the establishment of Allianz SE (Hemeling 2008). It is less clear, however, whether it is still an important reason for using the SE today. The Cross-Border Merger Directive should provide national companies from different jurisdictions with a safe and tractable way to accomplish a merger in the future. Since the Directive has been implemented only recently (if at all), we expect that the SE was in fact used as a vehicle for cross-border mergers during our observation period.

H5: Firms use the SE corporate form to accomplish transnational mergers.

3.4. Methodology and data

To test our hypotheses we adopt a dual research strategy. While econometric analysis is the preferred method of many economists, it does not follow that it is, or should be, the only empirical approach (Swann 2006). Using two different methods enabled us to overcome the dearth of data as well as to check the robustness of our results.

Firstly, we rely on a structured telephone survey with German SE users. We were thus able to obtain information on issues where no dataset is available. For instance, the survey provides information on the content of co-determination agreements and the way they were reached. Furthermore, we were able simply to ask for the reasons why the SE corporate form had been chosen. We are well aware, of course, that surveys may suffer from misreporting by interviewees despite our firm assurance of anonymity. The fact that many participants expressed that worker co-determination – arguably the most sensitive issue in the interview – was a major reason for choosing the SE makes us believe that misreporting is not a serious problem. We confined the survey to Germany because it is a very popular jurisdiction for SE incorporations and because we could guarantee high-quality interviews.

Secondly, we investigate part of our hypotheses by means of a simple econometric model using a cross-section of the EEA countries. A major virtue of this approach is that we do not have to conduct field work in 30 different jurisdictions. We further benefited from the fact that the regression analysis allows us to make *ceteris paribus* statements so that we can estimate the influence of mandatory co-determination regimes on SE incorporations while controlling for the effect of tax rates and other variables that might affect these incorporations.

3.4.1. Data from company registers

Both empirical approaches required us to identify the existing SEs (as of June 2008). Notice of each SE incorporation is supposed to be published in the OJEU according to SE Regulation, Article 14, which seems to imply (but does not state explicitly)

that the national company register is responsible for forwarding the information to the EU Office for Official Publications. We doubted the quality of this data source because there are no legal consequences if an SE is not published in the OJEU. More specifically, an SE's coming into existence does not turn on the required publication. We therefore decided to collect the relevant information directly from the national company registers. In some Member States, the national register was easily accessible through its website. In other cases, we had to contact the company register or the respective statistical office by e-mail or letter. Matching our dataset with the information from the OJEU confirmed our suspicion: we did not find any SEs in the OJEU that did not show up in the Member State records, but we were able to identify a large number of incorporated firms that had not made it into the OJEU. Table 3.1 presents the number of incorporations which could be detected in the national company registers by June 2008 but did not show up in the OJEU. The OJEU has missed many SEs, particularly from the Czech Republic and Germany.

Table 3.1 Number of additional SE registrations in the national company registers as compared to the OJEU in June 2008

Register	Additional registrations
Czech Republic	43
Germany	19
Netherlands	4
Austria	3
Cyprus	2
Slovakia	2
Hungary	1
Denmark	1
Belgium	1
United Kingdom	1

We complemented the information gathered from company registers with responses from our survey, data from LexisNexis, and company websites. To the best of our knowledge, the resulting dataset was the most complete one on the European

Company that had been generated until then.⁴² Previous research either focused solely on the OJEU or drew just partly on expert knowledge and the national commercial registers (Bayer and Schmidt 2008). As the SE is growing more popular, it becomes increasingly difficult to keep track of incorporations in 30 different company registers. If the EU does not want to rely on a private data collection exercise like ours, it should require Member States to provide aggregated numbers on SE incorporations.⁴³

3.4.2. Telephone survey

To learn about the driving forces behind SE formations, we carried out a structured telephone survey asking individuals who were involved in the incorporation decision of German SEs about, *inter alia*, the principal motives for adopting the new supranational legal form. Although a telephone survey is more time-consuming than sending out a written questionnaire, it allowed us to increase the participation rate significantly. In addition, we were immediately able to clarify ambiguous statements so that we could generate a maximum of usable answers. 26 individuals agreed to be interviewed. Since some of the respondents represent several firms, e.g. Allianz SE and Allianz Investment Management SE, we were able to cover 75 percent of all SEs incorporated in Germany, which we consider to be a highly representative sample.⁴⁴ For the remaining 25 percent no contact details were available or the contacted person indicated that he or she did not wish to participate. All of the interviewees occupied a high rank in their respective organisation. In many cases, we talked to the CEO or a person who was directly involved in the SE formation process, often the company's legal counsel. When talking to providers of shelf companies,⁴⁵ we asked for the clients' motives for buying a SE. We were thus able to ascertain the intended uses of many shelf SEs which would turn into active SEs in the subsequent months.

⁴² An up-to-date overview of SEs is maintained by the European Trade Union Institute and the Hans Böckler Foundation, see <http://www.worker-participation.eu>.

⁴³ The recent Commission proposal for a Council Regulation on the Statute for a European Private Company provides for such a requirement, see COM (2008) 396 final, Art. 46(1).

⁴⁴ The sample represents 74 percent of active (i.e. non-shelf) SEs in Germany.

⁴⁵ We define a 'shelf company' as a company which is to be sold to a firm or entrepreneur and which does not yet carry out any business activity. Companies that are used as a vehicle for holding assets, such as investment companies, are considered 'active', not 'shelf' companies.

Interestingly, nearly all shelf companies had already been sold at the time of the interviews.

All interviews were conducted during a narrow timeframe of three weeks in May and June 2008 to minimise the influence of periodic changes on the results. Each interview took approximately 20 minutes during which 14 questions were discussed. To get consistent responses, a structured questionnaire had been designed and was completed by the interviewer during each interview. The first block of the questionnaire asked general questions about the firm, the formation process of the SE and whether the one-tier or two-tier board structure had been adopted. Two questions followed on the current size of the board and whether it had been changed upon registration of the SE. The interviewees were further asked to provide information about the fraction of worker representatives currently serving as board members. In each interview, we inquired about the motives for choosing the SE corporate form. If the respondent did not name a particular reason, we asked explicitly whether the following seven issues had played a role: the specific image of the SE in the marketplace, choice between the one-tier and two-tier board model, simplification of the company structure, worker co-determination, sale of shelf companies, possibility to transfer the registered office and accomplishing a transnational merger. Most interviewees immediately offered their reasons for adopting the SE and did not change their response when we suggested other specific motives from our list. We also discussed some of the reasons in more detail: has the registered office already been transferred? Does the company plan to do so in the near future? How many employees work for the firm? Is there an agreement on worker co-determination at board level? If so, what was agreed upon? Finally, we discussed the risks associated with establishing an SE as well as potential improvements in the SE company law regime.

3.4.3. Regression model

In a second step, we combine the information from the company registers with other country-level data to run a simple regression model. Estimating a Probit or Logit

model would require detailed firm-level data, which were not available for a sufficient number of SEs. Although we observe the number of incorporations in a given year, most of the institutional explanatory variables have no variance over time, which rules out a panel data analysis. We therefore apply an OLS regression since the small-sample properties of this estimator are generally known and estimation problems such as omitted variables can be easily evaluated. This is important as our sample consists of only 22 EEA countries, for which we were able to obtain the relevant data. At the same time, using more sophisticated techniques would arguably not add much to our analysis. Some of our independent variables are institutionally predetermined and therefore exogenous. Specifically, mandatory worker co-determination and the board structure of national companies had mostly been instituted decades before the European Company appeared on the stage. As to other factors, such as corporate taxes or growth of the national economy, it is extremely implausible that they are influenced by the number of SEs, given that all over Europe SEs still count in the hundreds. The direction of causality should therefore be unambiguous.

We have estimated the following equation:

$$\ln\left(\frac{\text{number of SEs}_i}{\text{total number of firms}_i}\right) = \beta_0 + \beta_1 \ln \text{gdp0508}_i + \beta_2 \ln \text{corptax}_i + \beta_3 \text{deter}_i + \beta_4 \text{dualonly}_i + \beta_5 \text{business}_i + u_i$$

As a dependent variable we use the number of SE incorporations divided by the total number of firms (*rrse*). The numerator of this variable contains the number of SEs registered in each country by June 2008. A total of 16 European Companies had already transferred their registered office to another Member State by then. They were counted for the jurisdiction in which they were registered originally because we are most interested in what drives the incorporation decision in the first place.⁴⁶ We divided the number of SEs by the total number of firms in the respective (national) economy to control for differences affecting business activity generally. Such country-specific effects include the size of the national economy, institutional

⁴⁶ This is in line with the reasoning behind our Hypothesis 3.1 that firms choose the SE corporate form with a view to moving to another Member State later on.

differences (for instance, tax law can make it attractive to hold assets in a company rather than individually), the amount of ‘entrepreneurial spirit’ or the regulatory burden on business activity. If, for reasons like these, a country has more firms, one would expect the number of SEs to be larger irrespective of legal arbitrage. The data on SE incorporations was gathered from the OJEU and the national company registers as described above (section 3.4.1.). The number of firms in the economy was obtained from the OECD Structural and Demographic Business Statistics (SDBS).⁴⁷ To control for business cycle effects, we also use the variable *gdp0508*, which measures the average growth rate during the years 2005 to 2008 and is based on the real GDP growth rates from Eurostat.⁴⁸

The remaining explanatory variables are intended to examine our hypotheses H1, H2, H3.1 and H4 stated in section 3.3. H1 is particularly difficult to test as we cannot think of a direct way to observe the incorporation costs incurred specifically by SEs and hence the cost differential between setting up an SE as opposed to establishing a company under national law. Our hunch is, however, that ‘high-quality’ jurisdictions that offer low incorporation costs to their own companies should also be more adept in handling the new SE corporate form. Based on this conjecture, we assume that a country’s *general* incorporation costs, i.e. the costs of setting up a (national) company, can also serve as a proxy for the cost differential between the SE and a national company. Put differently, if a country makes it difficult to incorporate under its own national law, it should be even more difficult to bring local counsel, notaries, company registers etc., to deal with the unfamiliar and more complicated European Company.

We measure incorporation costs using data from the World Bank’s ‘Doing Business’ Report (World Bank / International Finance Corporation 2008). Our first variable of

⁴⁷ The OECD defines a firm (‘enterprise’) as ‘a legal entity possessing the right to conduct business on its own; for example to enter into contracts, own property, incur liabilities for debts, and establish bank accounts. It may consist of one or more local units or establishments corresponding to production units situated in a geographically separate place and in which one or more persons work for the enterprise to which they belong.’

⁴⁸ As the first incorporations occurred already in the year 2004 and the year 2008 had not ended when this article was published, we tried different intervals without obtaining a significant impact on the results.

interest (*business*) represents a ranking based on the Report's ease of doing business index. It reflects a cumulative measure of a country's regulatory environment including the political and legal risks associated with business activities. We use *business* as a first proxy of incorporation costs. We test the robustness of our findings by investigating more detailed variables like the number of procedures (*proce*) and the time (*time*) it takes to start a business as a proxy for the bureaucratic burden a company has to deal with. We also consider the expenses of setting up a firm (*cost*) and the minimum capital requirement (*mincap*) as a percentage of income per capita that an entrepreneur must provide for a standardised company.⁴⁹ The information for these variables was taken from the 'Doing Business' sub-category 'Starting a business'.

To test the impact of mandatory worker co-determination rules (hypothesis H2), we include a dummy variable (*codeter*) in our model. The variable jumps to 1 if the respective country has mandatory rules on co-determination for privately owned (i.e. non-government) companies. The data was gathered from the European Trade Union Institute and the Hans Böckler Foundation (Kluge and Stollt 2006). Of course, a single dummy variable inevitably leaves out a lot of institutional detail. Hypothesis H3.1 is examined by including the national corporate tax rates (*corptax*) as provided by the European Commission (2006) and KPMG International (2008). With respect to H4, we add another dummy variable (*dualonly*) that jumps to 1 if the respective country allows only for the two-tier board system. The data again comes from the European Trade Union Institute (Kluge and Stollt 2006). Our variables are described in Table 3.2. Table 3.3 contains some descriptive statistics.

⁴⁹ For the definition of the 'standardised company' see Djankov et al. (2002). The minimum capital requirement was included as one of several proxies for the regulatory burden. The SE uniformly requires a minimum capital of €120,000 (Art. 4(2), SE Regulation).

Table 3.2 Variables

Variable	Description
<i>rrse</i>	Number of SEs incorporations by June 2008 divided by the total number of firms in the economy. The data on SE incorporations was hand-collected from the national company registers in the EEA. The number of firms was taken from the OECD Structural and Demographic Business Statistics.
<i>gdp0508</i>	Average real GDP growth rate for the years 2005 to 2008. The data comes from Eurostat.
<i>corptax</i>	Statutory corporate tax rates for the year 2006. The data was provided by the European Commission and KPMG International.
<i>deter</i>	Dummy variable reflecting rules on mandatory co-determination for privately owned companies (1 = mandatory co-determination required). The data source is the European Trade Union Institute and the Hans Böckler Foundation.
<i>dualonly</i>	Dummy variable reflecting whether the country allows for the one-tier board structure in public companies (1 = only two-tier board structure available). The source of the data is again the European Trade Union Institute and the Hans Böckler Foundation.
<i>business</i>	The rank of a country from 1 to 181 based on an index consisting of a simple average on each of 10 subindices covered in 'Doing Business'. The data was taken from the World Bank / International Finance Corporation.
<i>proce</i>	Number of procedures needed to set up a firm. Procedures are defined as any interaction of the company founder with external parties (for example, government agencies, lawyers, auditors or notaries). Interactions between company founders or company officers and employees are not counted as procedures. Cf., http://www.doingbusiness.org/MethodologySurveys/StartingBusiness.aspx .
<i>time</i>	Median duration in calendar days that incorporation lawyers indicate is necessary to complete the required procedures. Cf., http://www.doingbusiness.org/MethodologySurveys/StartingBusiness.aspx .
<i>cost</i>	Fees for government agencies and legal or professional services if required by law to set up a firm. Fees are reported as a percentage of income per capita. Cf., http://www.doingbusiness.org/MethodologySurveys/StartingBusiness.aspx .
<i>mincap</i>	The minimum capital requirement reflects the amount that a company founder needs to deposit in a bank or with a notary before registration and up to 3 months following incorporation. It is reported as a percentage of the country's income per capita. Cf., http://www.doingbusiness.org/MethodologySurveys/StartingBusiness.aspx .

Table 3.3 Descriptive statistics of key variables

	Mean	Standard deviation	Median	Minimum	Maximum	Number of observations
Number of SEs	7.2	17.1	1.0	0.0	74.0	30
Total number of firms	668076	692017	448746	22597	2279299	14
<i>rrse</i> (SEs / total firms)	2.46e-06	6.20e-06	1.53e-06	1.00e-14	309.80e-06	26
<i>gdp0508</i>	4.2	2.1	3.8	1.1	9.2	29
<i>corptax</i>	25.6	8.1	27.0	10.0	39.0	28
<i>codeter</i>	0.4	0.5	0.0	0.0	1.0	30
<i>dualonly</i>	0.4	0.5	0.0	0.0	1.0	26
<i>business</i>	32.4	22.5	26.0	5.0	100.0	27
<i>proce</i>	6.8	2.8	6.0	5.0	15.0	27
<i>time</i>	19.2	13.5	15.0	4.0	60.0	27
<i>cost</i>	6.6	6.8	4.2	0.0	23.3	27
<i>mincap</i>	37.2	39.9	31.1	0.0	196.8	27

3.5. Empirical findings

Before turning to the question of what caused incorporations, we present some descriptive statistics on our dataset on the European Companies now in existence.

3.5.1. Descriptive statistics

3.5.1.1. Time trend

Figure 3.1 provides information on monthly and annual SE formations. In each of 2005, 2006 and 2007, the number of incorporations roughly doubled: in 2005, we have been able to identify 21 incorporations. One year later, 40 European Companies were formed, and in 2007 the figure rose to 85. In the first months of 2008, incorporations reached again two-digit figures, indicating that the previous year's value will be surpassed. If incorporations continue to grow at the same pace as in the last three years, there will be significantly more than one hundred incorporations in 2008.

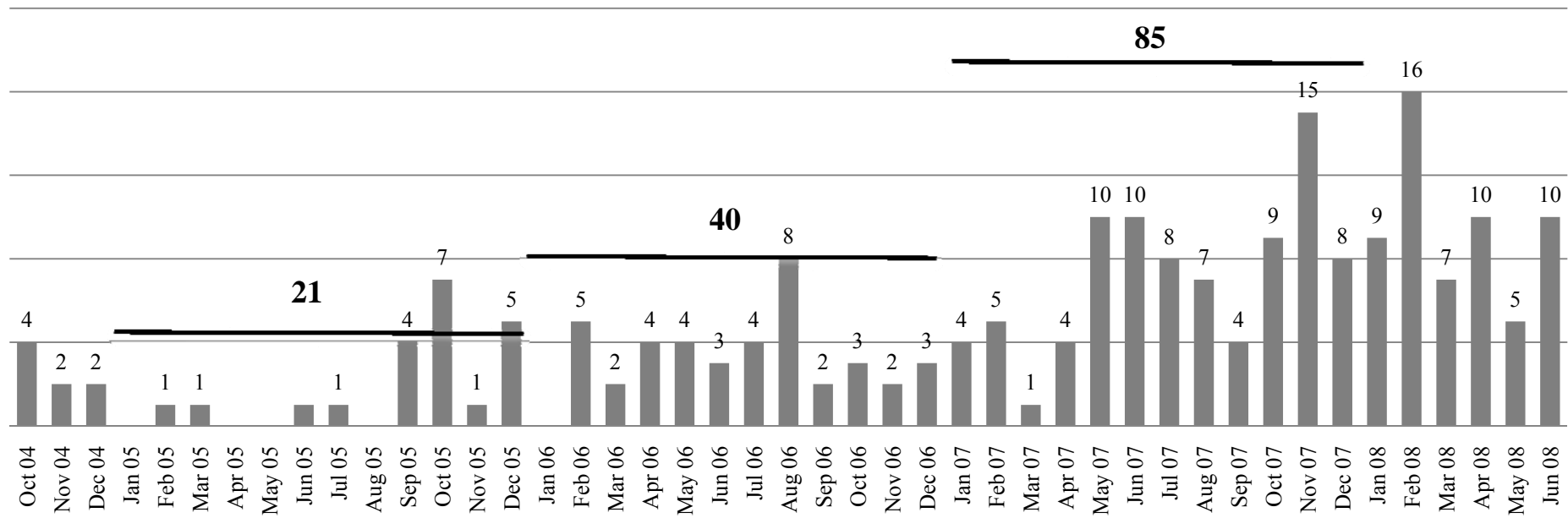


Figure 3.1 SE incorporations from October 2004 to June 2008

3.5.1.2. Regional distribution

A look at the regional distribution of incorporations (Table 3.4) yields a surprising result. Apart from Germany, it is the Czech Republic that is home to the most SEs (Figure 3.2). In the course of one year (May 2007 – May 2008), as many European Companies were registered in the Czech Republic as in Germany during the three-year period from October 2004 to October 2007. By the end of 2008, the Czech Republic had surpassed Germany by having incorporated more than 100 SEs. It is noteworthy that many Czech SEs are shelf companies which are being offered on multilingual websites.⁵⁰ Nevertheless, there are also active European Companies registered in the Czech Republic. For instance, the Český Pivní Festival SE organises the beer festival in Prague and the NH Trans SE is a provider of specialised transportation services.

⁵⁰ See <http://www.eurospolecnosti.cz>, <http://www.czechcompanies.cz/en> and <http://www.smartcompanies.cz>.

Table 3.4 Number of SE incorporations, existing SEs and existing SEs by population

SE incorporations		Existing SEs		Existing SEs / Population	
Germany	74	Germany	70	Liechtenstein	58,0
Czech Republic	62	Czech Republic	61	Luxembourg	20,6
Netherlands	19	Netherlands	15	Cyprus	6,3
Austria	10	Austria	11	Czech Republic	5,9
Belgium	9	Luxembourg	10	Estonia	2,3
France	7	Belgium	8	Austria	1,3
Luxembourg	7	France	7	Latvia	1,3
Sweden	5	United Kingdom	5	Netherlands	0,9
Norway	5	Sweden	5	Germany	0,9
Cyprus	3	Cyprus	5	Belgium	0,8
Estonia	3	Estonia	3	Norway	0,6
Latvia	3	Latvia	3	Sweden	0,6
Slovakia	3	Norway	3	Slovakia	0,6
United Kingdom	2	Slovakia	3	Hungary	0,2
Liechtenstein	1	Liechtenstein	2	France	0,1
Hungary	1	Hungary	2	United Kingdom	0,1
Finland	1				
Denmark	1				
Total	216	Total	213		

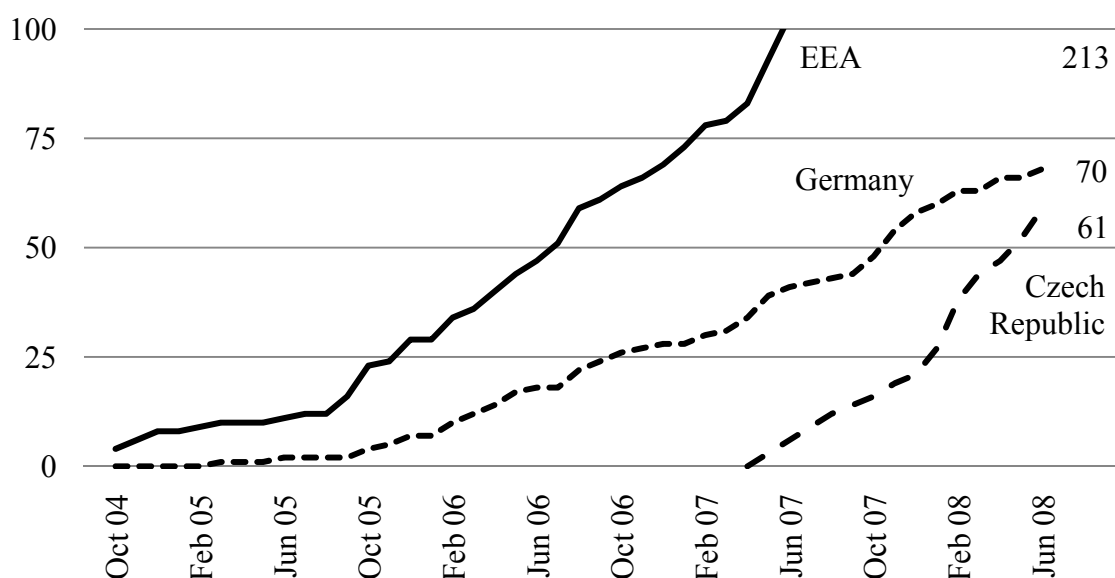


Figure 3.2 Existing SEs in Germany, the Czech Republic and the EEA

As of June 2008, one out of two SEs had its registered office in either Germany or the Czech Republic. Apart from these two countries, only Austria and the Netherlands have double-digit populations of European Companies. Italy, Spain and Poland, along with 12 other Member States, did not have a single SE registered by this time.

However, the total number of incorporations and of existing SEs shown in the first two columns of Table 3.4 may be misleading. Dividing the number of European Companies in a country by its population produces a different picture. With less than a single SE per 1 million inhabitants Germany drops to the middle of the European league; France and the UK fall to the bottom of the table. The top of the list is now occupied by small countries. Liechtenstein and Luxembourg stand out, followed by Cyprus and the Czech Republic. As small jurisdictions can gain relatively more from engaging in regulatory competition, their pre-eminence is already indicative of our central hypothesis that the European Company is employed as a vehicle for legal arbitrage. This first impression is reinforced by the fact that the lead group of Liechtenstein, Luxembourg and Cyprus has attracted 6 European Companies from

foreign jurisdictions through a transfer of the registered office (Table 3.5).⁵¹ Only the UK has been more successful in this regard than each of the small jurisdictions. In total, we observed 18 transfers by 16 firms, with some more SEs already planning to move their registered office.

Table 3.5 Transfer of registered office of SEs

Moving out		Moving in	
Germany	4	United Kingdom	4
Netherlands	4	Luxembourg	3
Norway	2	Netherlands	2
Luxembourg	2	Cyprus	2
Belgium	1	Cayman Islands	2
Finland	1	Austria	1
Czech Republic	1	Germany	1
United Kingdom	1	Liechtenstein	1
Denmark	1	Hungary	1
Total	18	Total	18

3.5.1.3. Firm size

Our dataset has two measures of firm size: the number of employees and the subscribed capital. As the number of employees is only rarely published in the company register, we had to collect additional data from financial statements, company websites and LexisNexis. As a result, we have identified the number of employees for around one third of the total number of 216 SEs. We were able to classify nearly all of the remaining firms as either shelf or investment companies that do not have employees.

Our data reveals that the SE is frequently used by small and medium-sized enterprises (SME). Based on the definition of the German Institut für

⁵¹ Two of the European Companies moved to Luxembourg only to reincorporate from there to the Cayman Islands, thus providing ‘smoking gun’ evidence of legal arbitrage. See on these cases Heuschmid and Schmidt (2007) and Schmidt (2005).

Mittelstandsforschung (Institute for SME Research), 13 out of 69 SEs with employees are of ‘small’ and 29 of ‘medium’ size;⁵² that is, almost two thirds of them are SMEs. Apparently, SMEs manage to set up a European Company even though the SE Regulation requires that at least one party from another Member State must be involved to incorporate in the SE form.⁵³ We have learnt from the telephone survey that the cross-border requirement is often complied with by using a foreign special purpose vehicle, typically a private limited company (‘Ltd.’) from the UK.

Only 6 SEs have more than 10,000 employees group-wide (Figure 3.3). Among them are 4 German firms, namely Allianz SE, BASF SE, Fresenius SE and Porsche Automobil Holding SE. The remaining two are Strabag Bauholding SE from Austria and the previously Finnish and now Luxembourg Elcoteq SE.

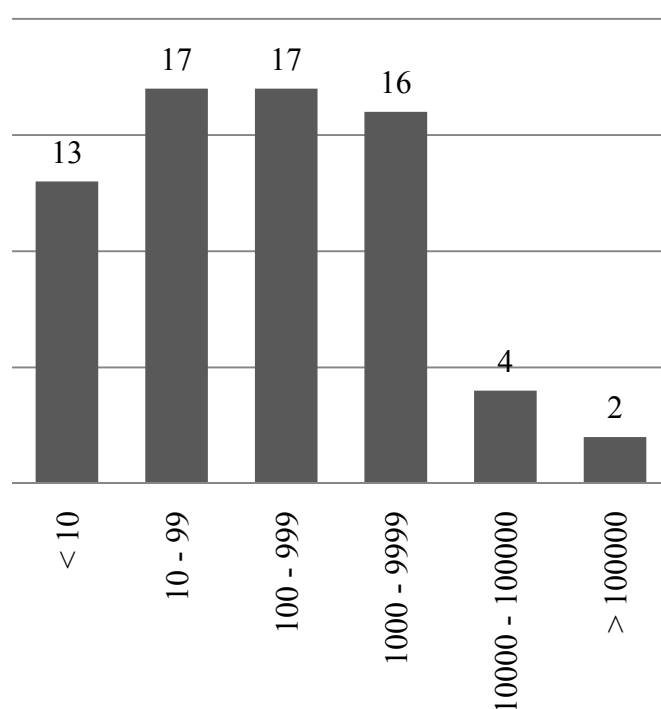


Figure 3.3 SEs by employees

⁵² Small enterprises are defined as having up to 9 employees and less than €1 million annual turnover, while medium-sized enterprises have 10 to 499 employees and €1 to 50 million annual turnover. See Definition 01/01/2002 at <http://www.ifm-bonn.org/index.php?id=89> (last visited 15 October 2008).

⁵³ Cf., Art. 2 SE Regulation. An exception is provided for in Article 3(2), under which an existing European Company can set up subsidiary SEs.

A similar picture emerges when we consider subscribed capital (Figure 3.4). 111 out of 176 firms for which the relevant information was available have a subscribed capital of € 120,000, the minimum amount required by the SE Regulation. Only three SEs show a subscribed capital exceeding € 1 billion. These are (again) Allianz SE and BASF SE as well as the French insurance company Scor SE.

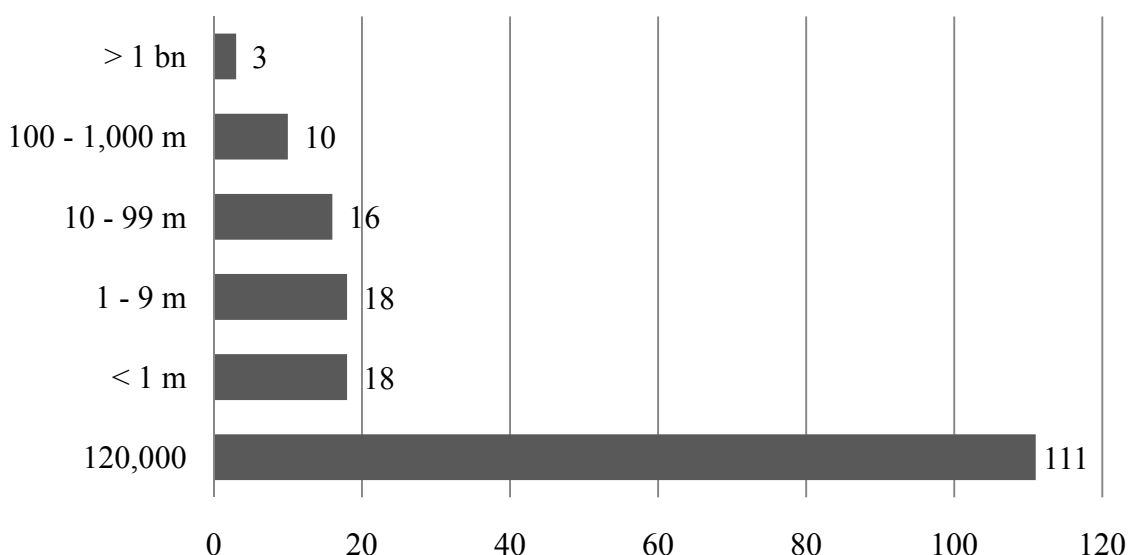


Figure 3.4 SEs by subscribed capital in euros

3.5.1.4. Industry

We were able to categorise 122 SEs using the European NACE Revision 2 industry classification code (Table 3.6). Another 57 European Companies have been identified as shelf companies. For the remaining 34 SEs no information was obtainable. About one third of the SEs that we could classify belongs to the financial sector. Around half of them are investment funds or ‘trusts’ and similar financial entities. The remaining half is actively providing financial or insurance services. Again, the large share of the financial industry and investment funds in particular may be suggestive of legal arbitrage because the cost of relocating financial assets to a more favourable jurisdiction is especially low. The second largest group of SEs operates in manufacturing, which includes, among others, carmakers, component suppliers and chemical production. Finally, a significant number of non-financial service providers have incorporated under the SE Regulation.

Table 3.6 SE industry classification according to NACE Rev.2

Industries (N=213)		
Section A:	Agriculture, forestry and fishing	1
Section B:	Mining and quarrying	1
Section C:	Manufacturing	22
Section D:	Electricity, gas, steam and air conditioning supply	1
Section E:	Water supply; sewerage, waste management	1
Section F:	Construction	5
Section G:	Wholesale and retail trade; repair of motor vehicles	5
Section H:	Transportation and storage	5
Section I:	Accommodation and food service activities	1
Section J:	Information and communication	12
Section K:	Financial and insurance activities	43
Section L:	Real estate activities	8
Section M:	Professional, scientific and technical activities	11
Section N:	Administrative and support service activities	1
Section O:	Public administration and defence; compulsory social security	0
Section P:	Education	1
Section Q:	Human health and social work activities	2
Section R:	Arts, entertainment and recreation	2
Section S:	Other service activities	0
Section T:	Activities of households as employers	0
Section U:	Activities of extraterritorial organisations and bodies	0
Shelf Companies		57
Unknown		34
Total		213

3.5.1.5. Board structure

Slightly more firms have opted for the one-tier instead of the two-tier board structure (Figure 3.5). Some firms set up a sole ‘administrative organ’ in Member States that, for their national companies, require a distinct supervisory board. As predicted by

our hypothesis H4, these are mainly SMEs often having one dominant shareholder.⁵⁴ H4 is further supported by the fact that so far not a single SE has adopted a two-tier board structure in a one-tier jurisdiction.⁵⁵ Finally, information collected from national company registers revealed that several two-tier firms reduced the number of directors on the supervisory board when incorporating as an SE. These were mostly large, publicly traded companies from Germany.

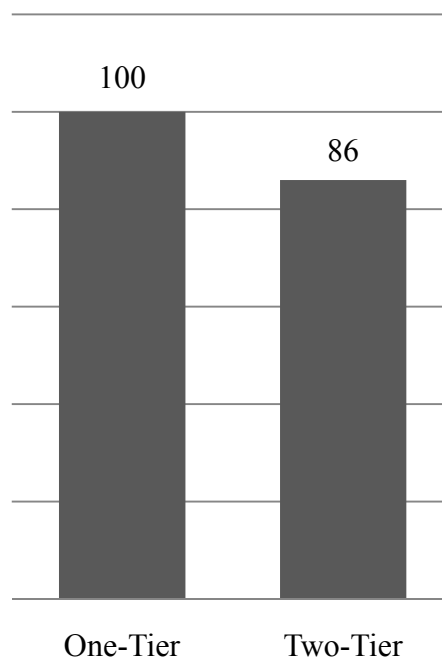


Figure 3.5 Board system

3.5.1.6. Incorporation methods

The SE Regulation provides five different ways to set up a European Company (SE Regulation, Article 2 and 3): formation by merger, formation of a common subsidiary SE, conversion of an existing public company into an SE, formation of a

⁵⁴ One fairly well-known example is Adi Drotleff who is both the CEO and controlling shareholder of the IT company Mensch und Maschine SE.

⁵⁵ Some European Companies in the United Kingdom have a supervisory board but only because they retained the two-tier structure after having moved to the United Kingdom. In no case did a European Company actively seek a two-tier board structure in a jurisdiction adhering exclusively to the one-tier structure.

holding SE and formation of a direct SE subsidiary, also known as secondary formation. The latter two methods appear not to be very popular while the former three have been widely used (Figure 3.6). In at least 40 cases, SEs have been formed as shelf companies and sold to end users. As we have learnt from our interviews, one method of producing shelf companies is to employ a foreign company as an ‘incorporation vehicle’ to comply with the cross-border requirement (section 3.5.1.3. above). Therefore, some of the 37 mergers and of the 40 formations of common subsidiary SEs likely did not serve a business purpose except that of accomplishing an SE incorporation.

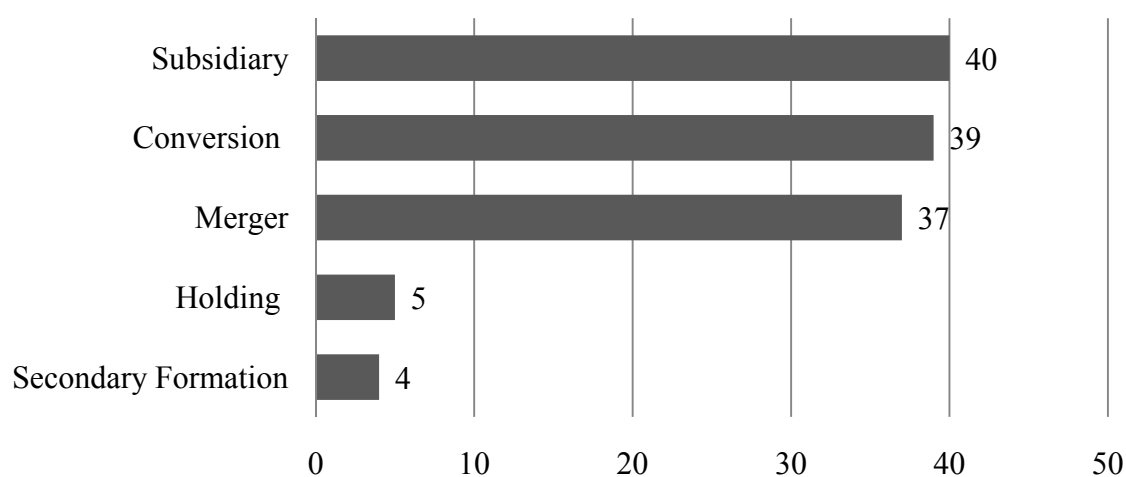


Figure 3.6 Type of SE formation

3.5.2. Survey results

According to our hypothesis H1, the differential in incorporation costs between the SE and national companies should have a negative impact on SE formations. The responses to our survey confirm this hypothesis. Many of our German interview partners mentioned that company registers, tax authorities and other government agencies are largely unfamiliar with the SE, making incorporation and operating the firm fairly difficult in some cases. Some respondents considered registration in the company register as a major risk factor associated with the incorporation decision.

These statements underscore our intuition that there are specific costs of forming and operating a European Company and that the regulatory burden matters to SE users.

Hypotheses H2, H3.1, H3.2, H4 and H5 are at the heart of our research interest in the SE as a vehicle for legal arbitrage. The survey responses regarding the motives for choosing the SE corporate form (Table 3.7) bear on all of these hypotheses. As to H2, our respondents named co-determination as a factor for 29 out of 49 SEs. Additional support for H2 comes from the fact that negotiations on employee involvement in the SE produced some very creative outcomes (see also Keller and Werner 2007): in some firms, employees acceded to a smaller ‘Representative Body’⁵⁶ and a precise definition of its competences while the company promised a higher frequency of meetings with management and offered employee representatives improved access to worksites abroad. At least one firm abolished co-determination completely in exchange for a ‘social fund’ on behalf of its employees.⁵⁷ At the same time, negotiations on worker co-determination were also mentioned as imposing a major risk of delay on the incorporation process. In sum, however, survey responses confirm that avoiding or reducing worker co-determination plays an important role for many SE incorporators.

Table 3.7 Survey results: motives behind German SE formations

Motive	Positive response (N = 49)
Image of the SE	36
Board structure	30
Co-determination	29
Corporate mobility	26
Corporate structure	7
Planned merger	6

⁵⁶ As compared to the size prescribed by the default rule of SE Employee Involvement Directive, Annex, Part 1, lit. e., the Representative Body is the SE equivalent of the European Works Council established by Council Directive 94/45/EC, cf., SE Employee Involvement Directive, Art. 13(1).

⁵⁷ For details see Rehberg (2008).

Respondents representing 26 SEs brought up corporate mobility as another reason to opt for the European Company. This result seems to support both hypothesis H3.1 and H3.2. Yet, when our interview partners indicated plans to transfer the company's registered office, most of them identified tax-related advantages as the key motive. By contrast, none of our respondents cited an intention to seek a different gap-filling company law for the SE. On the contrary, many respondents would prefer a uniform SE company law so as to avoid legal frictions in the event of a relocation. Therefore, our survey evidence supports the tax law arbitrage hypothesis (H3.1) but not the notion that firms use the SE to shop for a more favourable company law (H3.2).⁵⁸

Another strong motive to opt for the SE corporate form is, according to responses for 30 German SEs, the desire to choose between the one-tier and the two-tier board structure. Taken together with our observation that SEs tend to opt out of, rather than into, the two-tier structure (section 3.5.1.5. above), this backs our hypothesis H4: SE incorporations are driven in part by the requirement in some Member States of a dual management/supervisory board for public companies.

In our survey sample of German SEs, the opportunity to consummate a cross-border merger under the SE Regulation (H5) seems to have played a role in only 6 SE incorporations. While this looks like a small number, it should not be read as evidence against H5: after all, the merger motive apparently mattered in more than 10 percent of our observations. Given how important legal certainty is in a merger, it may well have been the decisive reason in the relatively few cases for which the merger motive was mentioned.

The central results of the survey are that incorporations were mainly driven by the availability of the one-tier board system, the freezing of mandatory worker co-determination and the reduction of supervisory board members as well as the desire to transfer the registered office to another jurisdiction. For more than half of the firms, each of these reasons was a major argument for choosing the SE. In addition, three fourths of the participating German SEs considered the European image of the

⁵⁸ Since the unobserved fraction of German SEs consists most likely of investment or shelf companies, we would rather expect to underestimate the importance of tax motives.

SE as an important motive to select the new legal form. However, this is not a legal arbitrage motive in a strict sense.

To sum up, the survey results provide support for hypotheses H1, H2, H3.1, H4 and H5 but not for H3.2. In the next paragraph we investigate whether these results hold more broadly in the EEA.

3.5.3. Regression results

Keeping in mind the small size of our sample, we obtain surprisingly sound and robust results from the regression analysis (Table 3.9). All coefficients have the expected signs and some are statistically significant.⁵⁹ Our hypothesis H1 on the excess cost burden for SE incorporations receives support in different specifications of our model: the general ease of doing business rank (*business*), the number of procedural steps (*proce*) and the time (*time*) to set up a business each turn out significant at the 1 percent level; expenses (*cost*) and minimum capital requirements (*mincap*) are significant at the 5 or 10 percent level, respectively.⁶⁰

As regards H2, we begin the analysis by comparing the sample means of SE incorporations in jurisdictions with and without a worker co-determination regime (Table 3.8). On average, 14 SEs have been incorporated in countries with mandatory co-determination whereas around 2 SEs exist in the other Member States. Using a simple t-test, we find that the two samples are different from each other with a

⁵⁹ We took the natural logarithms of the dependent variable *rrse* (number of SEs divided by total number of firms) and the two explanatory variables (*gdp0508* and *corptax*), which are measured at the interval level, as this improved the distribution of these variables and helped us to deal with outliers. Since the sample size is already rather small and we are dealing with almost the entire population, we decided to take the data as it is and did not drop the two outliers Germany and the Czech Republic. If a country does not have a single SE, we cannot take the natural logarithm of zero. Instead, we insert a very small number (10^{-14}). Choosing a number closer to the range of positive values of *rrse* (e.g. 10^{-8}) does not affect the statistical significance of our results whereas an even smaller number would have worsened the distribution of the data. Because all country values of *rrse* are close to zero, their natural logarithm is negative. For this reason, the constant is not positive and should not receive an economic interpretation.

⁶⁰ When interpreting these results, one should keep in mind that we scale our dependent variable (the number of SEs) by the total number of firms. This control should already capture the impact of a country's incorporation costs on firms *generally*.

significance level of 5 percent. The coefficients on the co-determination dummy in the regression model are significant at the 1 percent level. The economic effect of the co-determination regime is not only statistically significant but also large in magnitude. Looking at regression number 3, which fits the data quite well, we find that mandatory co-determination increases the number of SE incorporations by 1,150 percent or around 12 times. Holding all other factors constant, if the UK switched to a mandatory co-determination regime we would expect 24 SE incorporations there instead of 2. In sum, our results confirm H2 quite well. Evidently, co-determination is driving SE formations not only in Germany but in the EEA more generally.

Table 3.8 *Test of difference in means between co-determination and no co-determination*

Country	SE incorporations	Country	SE incorporations
Austria	10	Belgium	9
Czech Republic	62	Bulgaria	0
Denmark	1	Cyprus	3
Finland	1	Estonia	3
Germany	74	France	7
Hungary	1	Greece	0
Luxembourg	7	Ireland	0
Netherlands	19	Island	0
Norway	5	Italy	0
Romania	0	Latvia	3
Slovakia	3	Liechtenstein	1
Slovenia	0	Lithuania	0
Sweden	5	Malta	0
		Poland	0
		Portugal	0
		Spain	0
		United Kingdom	2
Co-determination average	14.46	No co-determination average	1.65
Sample average			7.20
Test of means between subsamples (t-Statistics)			
Co-determination	12.81**		

** Significant at the 5 percent level

The results on corporate tax rates are mixed, with half of the coefficients turning out significant. This is somewhat at odds with the responses from our survey where taxation appeared as the main reason for an anticipated transfer of the registered office. One could imagine that the statutory tax rate is not a very good measure of the actual tax advantages sought by firms that incorporate as SEs with a view to relocating at some time in the future. Alternatively, the mere option to move to another tax jurisdiction, while being on the minds of managers and shareholders, may not be a strong motive for choosing the SE corporate form.

The results for the board structure are not as expected. We hypothesised that the European Company should be more popular in countries where domestic company law required public companies to have two boards of directors (H4). However, the coefficient on the dummy variable *dualonly* is insignificant in all specifications. As the correlation between *dualonly* and *codeter* is only 0.14, multicollinearity seems not to be the reason why our regression analysis fails to support H4.

The coefficient on economic growth is insignificant most of the time. This is not entirely surprising as our dependent variable captures the relative share of SEs in the overall population of firms. It is hard to think of a reason why economic growth should lead to a *disproportionately* large number of SE incorporations.

Looking for missing variables, we added legal origin, total GDP (at purchasing power parity) and three different measures of public sentiment towards the EU from Eurobarometer.⁶¹ None of them yielded significant coefficients or had a major effect on our results. We left these variables out as including all of them would have reduced the degrees of freedom. We also conducted a RESET specification test, which consists of adding the explanatory variables in quadratic and cubic form. The test indicated that we have not misspecified the model. As with every regression model, we cannot rule out that a crucial variable is missing from the model. However, the results from the telephone survey make us reasonably confident that this is not the case.

⁶¹ The idea behind the Eurobarometer variables is that the European image of the SE should be more attractive when public opinion is generally in favour of European integration.

Table 3.9 Regression results: driving forces behind SE formations in the EEA⁽¹⁾

	baseline	proce	time	cost	mincap
	(1)	(2)	(3)	(4)	(5)
<i>lngdp0508</i>	3.634 (4.430)	4.380 (3.392)	10.693 *** (3.967)	0.851 (4.594)	0.236 (4.178)
<i>incorptax</i>	14.876 * (7.973)	16.946 *** (4.704)	19.013 *** (5.597)	12.321 (7.895)	8.006 (6.153)
<i>deter</i>	10.278 *** (3.950)	10.555 *** (3.152)	11.500 *** (2.643)	10.660 *** (3.819)	12.928 *** (3.479)
<i>dualonly</i>	2.240 (2.989)	2.175 (2.595)	0.670 (2.173)	2.974 (3.329)	2.231 (3.877)
<i>business</i>	-0.195 *** (0.067)				
<i>proce</i>		-1.661 *** (0.460)			
<i>time</i>			-0.522 *** (0.093)		
<i>cost</i>				-0.571 ** (0.231)	
<i>mincap</i>					-0.062 * (0.035)
<i>cons</i>	- 71.705 *** (27.641)	-74.240 *** (19.577)	- 89.457 *** (20.441)	-63.008 ** (28.708)	-50.691 ** (22.268)
N	22	22	22	22	22
Adj. R ²	0.545	0.566	0.769	0.519	0.419
F	24.513	23.963	37.378	21.094	12.519

⁽¹⁾ We use robust standard errors to account for residual heteroscedasticity. *** indicate the 1 percent, ** the 5 percent and * the 10 percent level of significance

3.6. Summary and conclusion

When the *Societas Europaea* was made available as a new legal form for European firms, it was quite unclear whether and to what extent it would be accepted by the market. Many had argued that its legal complexity would reduce the attractiveness of this new company type. It appears that the critics are proven wrong. Based on a unique dataset that was collected from the Member States' national commercial registers, we observed a total of 216 SE incorporations by June 2008. 80 SEs had been incorporated without being published in the Official Journal of the European

Union. The compounded annual growth rate of SEs between 2005 and 2007 was around 100 percent. If the demand for SEs continues to grow at the same rate, we can expect around 300 SEs by the end of 2008 and more than a thousand SEs in 2010. Hence, the SE has become more and more popular as a corporate form, and the EU must be viewed as an emerging competitor in the market for corporate charters.

In this article we have studied legal arbitrage as a motive for choosing the SE. We specified a set of hypotheses that reflect certain specific legal arbitrage motives, and we examined these hypotheses by employing a dual empirical strategy. We conducted a structured telephone survey among the German users of the SE and tested some of the hypotheses in a simple OLS regression model. Overall, we find that legal arbitrage plays a significant role in choosing the SE. More specifically, we find strong evidence for legal arbitrage with regard to mandatory co-determination. The SE is popular especially in countries with mandatory co-determination at board level, and firms seek to reduce this effect or even avoid mandatory co-determination altogether by choosing the SE corporate form. We also find that the use of the SE seems to be motivated at least in part by enhanced corporate mobility with a view to corporate tax savings. By contrast, company law arbitrage – shopping for an attractive company law to fill the gaps of the SE Regulation – is not confirmed by our empirical analysis as a motive for choosing the SE. Our survey evidence from Germany also suggests that the SE may be preferred to a domestic public company because of the choice it offers between a one-tier and a two-tier board. Finally, incorporation costs seem to have hampered SE growth.

The most striking finding clearly is that the SE has become a vehicle to reduce the effects of mandatory co-determination at board level or to avoid such co-determination altogether. What the founding fathers (and mothers) of the SE had in mind was enhancing cross-border mobility and creating a uniform company law for cross-border business activities in the internal market. However, such a new company type could not be devised without creating certain differences in relation to national companies. As it turns out, the resulting legal arbitrage opportunities do not go unexploited. This is true especially with respect to mandatory co-determination at

board level, which is often profoundly unpopular with shareholders and (perhaps sometimes less so) managers. Member State legislatures have reasons to be concerned if they want to shield their statutory rules against legal arbitrage. At the same time, they may also use it as a source of inspiration. Legal arbitrage demonstrates a demand for legal rules that differ from existing law. Our evidence suggests that national jurisdictions should consider possible changes, such as abolishing or reducing co-determination at board level or allowing for bargained solutions. Also, there seems to be a need for a one-tier board structure even in the large, public company form. Faced with legal arbitrage, Member States can and should reassess their legal infrastructure for public companies.

We should like to conclude with an outlook on a (possible) European private company (*Societas Privata Europaea* – SPE). The European Commission has recently published a proposal for an SPE Regulation.⁶² If the EU manages to agree on an SPE statute, our results suggest that we will see a lot more legal arbitrage going on than under the SE Regulation. There are many reasons for this prognosis. First, the SPE will have no or only a very low minimum capital requirement. This implies that the SPE will be relevant for a lot more firms. Further, the absence of a minimum capital requirement or a low minimum capital requirement in itself will be a great driver for using the SPE in countries that have a high minimum capital requirement for closed corporations. Second, the SPE statute will probably restrict incorporation costs. It seems likely that the incorporation documents will be controlled either through notarial certification or by a competent public authority, but not both. Third, it also seems likely that the SPE – different from the SE – will be allowed to have its registered office and its actual head office in different Member States. Hence, engaging in legal arbitrage by choosing a registered office in a particular Member State will be relatively cheaper – it will not be necessary to relocate the actual head office as well.

⁶² The recent Commission proposal for a Council Regulation on the Statute for a European Private Company provides for such a requirement, see COM (2008) 396 final, Art. 46(1).

Chapter 4

How Does the Market React to the Societas Europaea?

4. How Does the Market React to the Societas Europaea?*

4.1. Introduction

When it came to company law, European firms used not to have much choice. In most Member States of the European Union (EU) as well as the European Economic Area (EEA), a legal rule known as the ‘real seat doctrine’ restricted companies from incorporating in a jurisdiction other than that where their corporate headquarters were located. The situation began to change fundamentally when in 1999 the European Court of Justice (ECJ) ruled that applying the real seat doctrine to companies from other EU Member States violated the freedom of establishment under the TFEU.⁶³ The new case law effectively permitted company founders to choose a company law of their liking. It did not, however, provide the same freedom of choice to *existing* companies and their shareholders. There was no simple mechanism for ‘reincorporating’ a firm, that is, for transforming a company established in one jurisdiction into a company governed by the law of another jurisdiction.⁶⁴ Particularly for public companies with a large and dispersed shareholder base, it was virtually impossible to switch to another, more favourable company law. For them, the first choice to become available was between the national law of their respective home state and a new corporate form created by the EU: the European Company (Societas Europaea – SE). The European Company

* This chapter is a thoroughly revised version of an earlier ECGI working paper circulated under the title ‘The Societas Europaea: Good News for European Firms’ (Eidenmüller et al. 2009c). A published version of this chapter appeared under the title ‘How Does the Market React to the Societas Europaea?’ in the European Business Organization Law Review 11 (March 2010): 35-50. © 2010 by TMC Asser Press. All rights reserved. It was reprinted in the conference volume *Company Law and Economic Protectionism: New Challenges to European Integration* edited by Ulf Bernitz and Wolf-Georg Ringe. © 2010 by Oxford University Press. We are indebted to Florian Heiss, Klaus Wohlrabe and the participants in the Empirical Economics Research Workshop at the University of Munich. We also thank Jodie Kirshner, participants in Oxford University’s conference on ‘Company Law and Economic Protectionism’ and an anonymous referee for their thoughtful comments.

⁶³ See ECJ, Case C-212/97 *Centros Ltd. v. Erhvervs- og Selskabsstyrelsen* [1999] ECR I-1459; Case C-208/00 *Überseering BV v. Nordic Construction Company Baumanagement GmbH* [2002] ECR I-9919; Case C-167/01 *Kamer van Koophandel en Fabrieken voor Amsterdam v. Inspire Art Ltd.* [2003] ECR I-10155.

⁶⁴ Meanwhile, reincorporations among the EEA Member States should be possible by means of a cross-border merger into a shell company of the target jurisdiction under the Cross-Border Merger Directive 2005/56/EC. Member States were required to transpose the Directive into national law by 15 December 2007.

owes its existence not to the national laws of the Member States but to EU law itself. Council Regulation (EC) No 2157/2001 on the Statute for a European Company (SE Regulation) entered into force on 8 October 2004. As soon as Member States had adopted the required transposition measures, public companies organised under the laws of an EEA member state were able to reincorporate as an SE,⁶⁵ thereby choosing to be governed by the SE Regulation.⁶⁶

⁶⁵ Reincorporation can be accomplished by way of a merger between two or more public companies from different Member States (SE Regulation Art. 2(1)) or, more directly, by converting a public company into an SE; the latter method presupposes that the company has a subsidiary that has been governed by the law of another Member State for at least two years (SE Regulation Art. 2(4)).

⁶⁶ It should be noted, however, that the SE company law differs only in part from that of the company's home state because the SE Regulation frequently makes reference to the national law of the Member State where the registered office is located, see SE Regulation Art. 9(1)(c)(i) and (ii).

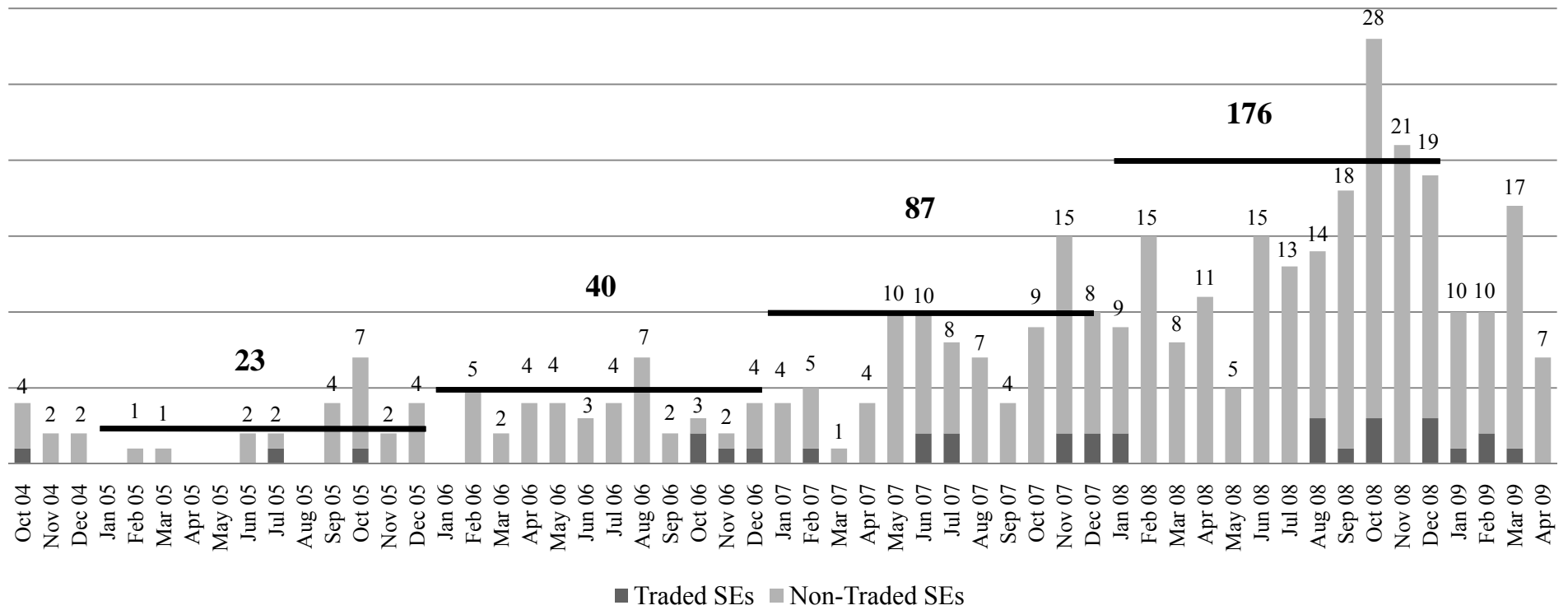


Figure 4.1 SE incorporations from October 2004 to April 2009

Since 2004, the new corporate form has been increasingly used by European firms (see Figure 4.1). While the number of SEs is still in the hundreds, it has so far shown exponential growth. Commentators have asserted potential advantages that the SE might offer to firms and their shareholders (e.g. Enriques 2004a; Reichert 2008). In prior work, we have studied the validity of some of these claims by examining the motives of SE founders (Eidenmüller et al. 2009a). Yet we know only little about whether and to what extent the alleged benefits of the SE corporate form actually materialise. In this regard, stock prices offer a valuable opportunity. If markets are at least reasonably efficient, the stock price should reflect the quality of the corporate governance structure insofar as it has an effect on the position of shareholders in the firm.

Event studies are a proven research tool to exploit this source of information. They have been used extensively to evaluate reincorporation decisions in the United States where firms have enjoyed free choice among the state company laws for much more than a century. With the emergence of the SE, the event study methodology can now be applied to charter competition in Europe. To the best of our knowledge, the working paper version of this article has been the first to do this (Eidenmüller et al. 2009c). Meanwhile, we have discovered eight more publicly traded firms that decided to reincorporate as an SE.⁶⁷ Our results now build on 38 publicly traded firms, regarding which the intention to reincorporate under the SE Regulation was publicised before 1 February 2009. Based on this new sample, our original finding of positive abnormal returns following the reincorporation decision still holds but no longer comes out at conventional levels of significance. Besides documenting the present state of knowledge, the article comments on the methodological difficulties of an event study five years after the SE's introduction and offers an outlook for future research.

In the remainder of the paper, we briefly consider the relevant literature (section 4.2.) before presenting our data (section 4.3.) and the event study methodology relied on (section 4.4.). Section 4.5. contains the main results regarding the abnormal returns

⁶⁷ We have learned of four new firms from the (almost concurrent) study by Lamp (2009).

on or around the reincorporation decision. In section 4.6., we discuss why we are no longer able to find significant results in our new sample. Section 4.7. concludes.

4.2. Literature

We are concerned with the economic consequences of company law choice, particularly with regard to shareholders in public companies. Our research interest has important policy implications: which company law a firm elects may depend on substantive differences in legal rules between jurisdictions. Whoever is in control of the decision will opt for the jurisdiction that best serves his/her own interests. Therefore, it is not a trivial question whether firms should be free to choose the company law under which they are organised. If reincorporating in another jurisdiction tends to harm certain stakeholders, the EU legislator may consider restricting firms' choices. For instance, additional requirements could be imposed to prevent harmful reincorporations, such as exit rights for dissenting shareholders and creditors.⁶⁸ Learning about the consequences of company law choice can also inform policy making at the national level. If Member States want to attract firms, or discourage firms from switching to another jurisdiction, they too should be interested in the effects of different legal rules on the various constituencies.

The US has a long history of free company law choice. For more than a century, at least some states have actively engaged in what has come to be known as 'charter competition', i.e. competition among state jurisdictions to attract incorporations. Most of the time and until today, the tiny state of Delaware has dominated the market for incorporations. Its success has long been viewed with suspicion. The rival positions have originally been associated with Cary (1974), who argued that states engaged in a 'race to the bottom', and Winter (1977), who took the opposite view that competition improved the quality of company law. It is important to note that the discussion in the US focuses on the agency problem between managers and

⁶⁸ At present, the SE Regulation does not provide any such safeguards. If an SE is formed by way of a cross-border merger, Art. 24 leaves it to the Member States to protect minority shareholders and creditors of the merging companies. Cross-Border Merger Directive Art. 4(1)(b), (2), grants the Member States similar authority. To define its proper scope, the ECJ should consider the impact of reincorporations on the respective group.

shareholders in public companies. Accordingly, the quality of Delaware's law – being the epitome of charter competition – was judged primarily by its impact on diversified shareholders. This common understanding and a growing confidence in market efficiency suggested a way to put the conflicting propositions to an empirical test: if reincorporating in Delaware increased (decreased) stock market valuation, this would imply that charter competition benefitted (hurt) shareholders.

Hyman (1979) was the first to take this cue and to conduct a (somewhat rough) analysis of stock returns of firms announcing their intention to reincorporate in Delaware. A survey by Bhagat and Romano (2007) counts a total of eight event studies on reincorporations in Delaware alone, with none of them finding significantly negative returns on the announcement date and four documenting positive returns that are statistically significant. More recently, the event study methodology has been complemented by another approach seeking to detect how the market evaluates Delaware law.⁶⁹ Daines (2001) and Subramanian (2004) examine whether Delaware companies generally enjoy a higher relative market valuation measured in terms of Tobin's Q⁷⁰ after controlling for a number of other factors. Again, the evidence seems to be slightly in favour of Delaware, with Daines finding a significantly higher valuation and the Subramanian analysis, using a refined methodology and a different sample, yielding no significant results.

As we pointed out in the introduction, choice of company law is a novel phenomenon in Europe. What little empirical research there is has mostly focused on the evolving use of foreign company law by start-ups since 1999 (Becht et al. 2008, 2009). For existing companies, the opportunity to opt out of the national company law under which they were established is an even more recent phenomenon. So far, reincorporating as an SE under European Community law has been the only relevant alternative to the national company law of the firm's home jurisdiction.⁷¹ We documented in prior work that the SE has gained some popularity among European

⁶⁹ For a critical assessment of the event studies on Delaware law, see Bebchuk et al. (2002).

⁷⁰ Tobin's Q is defined as the ratio of the market value and the replacement cost of the firm's (net) assets.

⁷¹ This will change gradually after the Cross-Border Merger Directive has been implemented in all Member States.

firms (Eidenmüller et al. 2008, 2009a). In addition, we provided evidence on the reasons for choosing the SE form rather than incorporating under national company law (Eidenmüller et al. 2009a). While the German Helaba bank early on presented data on abnormal returns surrounding the decision to reincorporate as an SE (Rausch 2007), our study (Eidenmüller et al. 2009c) and the almost concurrent one by Lamp (2009) are the first to analyse the stock price reaction based on a meaningful sample.

4.3. Data

Our objective is to detect abnormal stock returns surrounding the decision of a listed firm to reincorporate as a European Company. The first critical step is to identify the ‘event day’, i.e. the point in time when the reincorporation decision was made public. We collected data on three events: the first public statement, by the firm itself or by a third party, on the firm’s decision to reincorporate, the shareholder meeting authorising the reincorporation, and finally, the registration of the SE in the company register. We relied on *Thomson Knowledge* and *LexisNexis* as primary sources to identify the event dates. For all firms, the intention to reincorporate was publicly announced by the firm, included in the invitation to the shareholder meeting or otherwise mentioned in media reports before the respective shareholder meeting took place. We chose the earliest publication as the relevant event day in all cases because it was then that the market first learned of the reincorporation plan. We obtained information on firms regarding which the intention to reincorporate became known to the public by 1 February 2009,⁷² even if these firms have not, or had not, yet been registered as SEs. For firms listed on German stock exchanges, we double-checked the dates against the inside information disclosure statements as recorded by the semi-official provider *Deutsche Gesellschaft für Ad-hoc-Publizität* (DGAP). Finally, we requested information from and clarified discrepancies with the investor relations departments of the respective firms.

⁷² Since February 2009, at least two more firms (Nordex and Tipp24) announced to reincorporate as SE. Other candidates that might soon announce to reincorporate under the SE Regulation are M-Tech, Infineon and EADS.

As a result, we have generated a dataset of 42 publicly traded stock companies which announced to reincorporate under the SE Regulation. Four firms were transformed into an SE just before or shortly after going public.⁷³ After dropping these 4 cases, our ultimate sample consists of 38 firms. We rely on daily stock prices and indices from *Thomson Reuters Datastream*. The information on the method of incorporation, a possible transfer of the registered office, the (new) board structure, the number of employees and the industry branch of the firm were hand-collected from annual reports, special reports on the transfer of the registered office and the website of the European Trade Union Institute.⁷⁴

For six observations, the intention to reincorporate was publicised on a weekend.⁷⁵ As securities were not traded over the weekend, we would not be able to calculate abnormal returns for the actual event and hence defined the event day as the following Monday. Furthermore, if we had knowledge that the information was revealed after the stock market had closed, we specified the following day as the true event day.⁷⁶

⁷³ The four firms are Artemis Global Capital, Equipotential, Wacker Neuson and ENRO Energie.

⁷⁴ See <http://www.worker-participation.eu>.

⁷⁵ The six firms are Allianz, Conwert Immobilien Invest, HIT International Trading, MAN, Mensch und Maschine and Porsche Automobil Holding.

⁷⁶ This was the case for DVB Bank and Fotex Holding.

Table 4.1 Public companies regarding which an intention to reincorporate as an SE was publicised by 1 February 2009

Name of company and state of registration	Reg. office transferred from	First public information of reincorp. plan ⁽¹⁾	Shareholder meeting on reincorp.	Date of registration as an SE	Board structure before reincorp.	Board structure change	Industry ^(II)	Number of employees	Method of reincorp.
Nordea, SE	-	19/06/2003	-	-	one-tier	-	K	32,000	-
Elcoteq, LU	FI	08/10/2004	27/09/2005	01/10/2005	one-tier	-	C	24,222	Conversion
Strabag Bauholding, AT	-	12/10/2004	12/10/2004	12/10/2004	two-tier	-	F	61,125	Conversion
Graphisoft, HU	LU	11/04/2005	10/05/2005	27/07/2005	one-tier	-	J	253	Conversion
Allianz, DE	-	11/09/2005	08/02/2006	13/10/2006	two-tier	-	K	177,000	Merger
Mensch und Maschine, DE	-	29/10/2005	30/05/2006	07/12/2006	two-tier	+	J	388	Conversion
Scor, FR	-	04/07/2006	24/05/2007	25/06/2007	one-tier	-	K	1,840	Conversion
Fresenius, DE	-	11/10/2006	04/12/2006	13/07/2007	two-tier	-	Q	114,000	Conversion
Surteco, DE	-	12/10/2006	31/08/2007	19/11/2007	two-tier	-	C	2,109	Conversion
HIT Int. Trading, DE	-	05/11/2006	24/09/2007	-	two-tier	+	G	5	Conversion
Prosafe, CY	NO	17/11/2006	22/12/2006	02/02/2007	one-tier	-	D	1,030	Conversion
BASF, DE	-	27/02/2007	26/04/2007	14/01/2008	two-tier	-	C	95,000	Conversion
Odfjell, NO	-	14/03/2007	03/05/2007	23/07/2007	one-tier	-	H	3,500	Conversion
Porsche Auto. Holding, DE	-	24/03/2007	26/06/2007	13/11/2007	two-tier	-	C	11,500	Conversion
Eurofins Scientific, FR	-	28/03/2007	02/05/2007	25/06/2007	one-tier	-	M	4,069	Conversion
Wiener Privatbank, AT	-	24/04/2007	31/05/2007	23/08/2008	two-tier	+	K	204	Conversion
Norddeutsche Affinerie, DE	-	24/06/2007	-	-	two-tier	-	C	4,700	-
I.M. Skaugen, NO	-	17/09/2007	18/10/2007	20/12/2007	one-tier	-	H	1,500	Merger

table continues on the next page

Klöckner & Co, DE	-	20/09/2007	20/06/2008	08/08/2008	two-tier	-	C	10,581	Conversion
Conwert Immo. Invest, AT	-	22/09/2007	25/10/2007	14/12/2007	two-tier	+	L	436	Conversion
Interseroh, DE	-	26/09/2007	25/06/2008	24/09/2008	two-tier	-	D	1,729	Conversion
Catalis, NL	-	03/10/2007	03/01/2008	25/01/2008	one-tier	-	J	444	Conversion
SGL Carbon, DE	-	12/03/2008	25/04/2008	27/01/2009	two-tier	-	C	5,862	Conversion
Linde, DE	-	17/03/2008	-	-	two-tier	-	D	51,908	-
GfK, DE	-	31/03/2008	21/05/2008	04/02/2009	two-tier	-	M	10,000	Conversion
DVB Bank, DE	-	09/04/2008	11/06/2008	01/10/2008	two-tier	-	K	437	Merger
IMW Immo. Invest, DE	-	11/04/2008	-	-	two-tier	+	L	88	Merger
Songa Offshore, NO	-	23/04/2008	26/05/2008	12/12/2008	one-tier	-	B	296	Merger
Betbull Holding, AT	UK	23/04/2008	17/11/2008	31/10/2008	one-tier	-	R	109	Conversion
Q-Cells, DE	-	14/05/2008	26/06/2008	23/10/2008	two-tier	-	C	2,300	Merger
Solon, DE	-	15/05/2008	24/06/2008	02/12/2008	two-tier	-	C	850	Merger
Fotex Holding, LU	HU	02/07/2008	04/08/2008	31/12/2008	one-tier	-	K	593	Conversion
Dexia, BE	-	03/07/2008	-	-	one-tier	-	K	35,200	-
MAN, DE	-	07/07/2008	03/04/2009	19/05/2009	two-tier	-	C	51,000	Conversion
SCA Hygiene Products, DE	-	18/11/2008	-	-	two-tier	-	C	8,000	Conversion
Colexon Energy, DE	-	27/11/2008	-	-	two-tier	-	C	93	Merger
Nav. Equity Solutions, NL	-	17/12/2008	12/02/2009	17/03/2009	two-tier	-	M	124	Conversion
Sword Group, FR	-	29/12/2008	30/01/2009	-	one-tier	-	J	2,018	-

⁽ⁱ⁾ We report here the actual date of the first publication even if it was publicised after the market close or on a weekend or holiday.

⁽ⁱⁱ⁾ NACE Rev. 2 Statistical classification of economic activities in the European Community

B = Mining and quarrying

C = Manufacturing

D = Electricity, gas, steam and air conditioning supply

F = Construction

G = Wholesale and retail trade; repair of motor vehicles

H = Transportation and storage

J = Information and communication

K = Financial and insurance activities

L = Real estate activities

M = Professional, scientific and technical activities

Q = Human health and social work activities

R = Arts, entertainment and recreation

4.4. Methodology

In this section, we briefly outline our methodology for assessing the market response to the reincorporation decision.⁷⁷ We take the following three steps: first, we predict the returns for each day of the event window that we would expect if no event had occurred. Second, we subtract the expected returns from the actual returns to obtain abnormal returns. In our third and final step, we test whether the abnormal returns are statistically different from zero.

There are different ways to calculate predicted returns (Brown and Warner 1980; MacKinlay 1997). The most widely used are the market model and the constant mean return model. The latter assumes that the mean return of a given security is constant over time and hence uses the security's mean return over a certain period of time as predicted return for the event window. By contrast, the market model presupposes a steady linear relationship between the returns of an individual security and the returns of the market. In so doing, the market model tends to reduce the variance in abnormal returns because it can capture the portion of the individual security's return that is related to the variation of the market return. We want to take advantage of this property and therefore adopt the market model. Since the predictive power of the market model depends primarily on how well the market index matches the market component in the returns of the security as measured by the R^2 , we rely on different indices covering the various European stock markets and market segments. For instance, we choose from the DAX, MDAX, SDAX and TecDAX for the subsample of German companies. If a firm is part of one of these indices, as is the case for Allianz and BASF with respect to the DAX, we use this index. In the remaining cases, we choose the index that best approximates the firm's size and industry. We estimate the predicted return parameters in a window from 230 to 30 days before the event date. To establish whether abnormal returns are significantly different from zero we apply a t-test

⁷⁷ For a more detailed account, see Eidenmüller et al. (2009c).

(Brown and Warner 1985) and – as a robustness check – a non-parametric Wilcoxon rank-sum test (Wilcoxon 1945).⁷⁸

4.5. Empirical findings

Information is sometimes not disclosed to the market at one distinct point in time. It may leak out before and disseminate after the event day. Also, we are often not able to observe when exactly the decision to reincorporate became known to the public for the first time. For instance, rumours spread some days before the official press release, or there may not even be a specific announcement by the firm that is clearly communicated to the market. To increase the chance of capturing the abnormal returns associated with a piece of information, it has become standard practice to consider event windows of more than one day around the event date and calculate cumulative abnormal returns (CARs) over those timeframes.

We find both positive and negative abnormal returns for individual firms in our sample. The results for the event date (0), the day before (-1) and after (+1) the event date as well as for the time window from day -1 through day +1 are reported in the Appendix. Table 4.2 contains the *average* abnormal returns in our sample. The event date 0 yields a modest average abnormal return of .2 percent, which falls far short of any significance level. The picture brightens somewhat when we cumulate average returns over broader timeframes. Cumulative average abnormal returns (CAARs) rise to .9 percent as we extend the event window from the event date 0 up to day +5. While these CAARs still fail to reach even the 10 percent level of significance, the p-values decrease. This is the remnant of the result in an earlier version of this study, in which we did find significant positive CAARs for all time windows beginning on day 0 and ending at days 0 to 8. In the subsequent section we will examine why we fail to confirm this earlier finding with our larger sample. As Figure 4.2 depicts, the average stock market valuation of the firms in our sample

⁷⁸ For non-parametric tests in the event study context, see MacKinlay (1997).

increased around the event date. Given the behaviour of our test statistics on and after the event date, we still believe that ‘something is going on’.⁷⁹

In contrast to our results, the concurrent study by Lamp (2009) claims to find significantly positive CAARs. However, this conclusion rests only on the timeframes from -20 to +1 and -2 to 0. Other intermediate event windows in Lamp’s analysis yield insignificant or significantly negative CAARs, which is in line with the results reported in Table 4.2. While news of the reincorporation decision may leak out before the information is published, we believe that at least some effect should occur on or after the event date. Unfortunately, Lamp does not report results for any post-event windows, making a direct comparison infeasible.

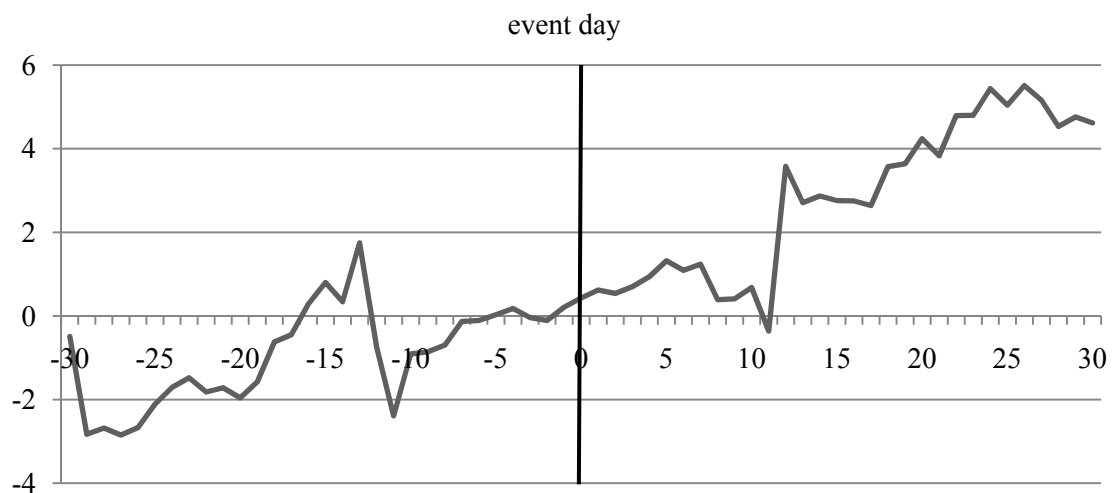


Figure 4.2 Cumulative average abnormal returns

⁷⁹ A difference-in-means test of the CAARs 30 days before and after the event day comes out at the 5 percent level. This may be seen as a hint that the market valuation increases on or around the event day.

Table 4.2 Cumulative average abnormal returns⁽¹⁾

window	CAAR _t	t-test		Wilcoxon rank-sum test	
		t-value	p-value	z-value	p-value
-1 to +1	0.006	1.09	28.1	0.43	66.9
-2 to +2	0.005	0.77	44.4	0.24	81.1
-3 to +3	0.005	0.60	55.5	0.33	74.4
-4 to +4	0.009	1.02	31.5	1.04	30.0
-5 to +5	0.010	0.91	37.0	1.34	18.0
-5 to -1	0.000	0.03	99.7	0.53	79.7
-4 to -1	0.002	0.27	78.5	0.44	65.8
-3 to -1	0.000	-0.07	94.7	0.27	78.9
-2 to -1	-0.001	-0.24	81.0	-1.17	24.3
0	0.002	0.62	54.0	0.07	94.8
0 to 1	0.004	0.96	34.3	0.31	75.5
0 to 2	0.006	1.23	22.6	0.54	58.7
0 to 3	0.005	1.04	30.5	0.78	43.8
0 to 4	0.007	1.37	17.8	1.20	23.2
0 to 5	0.009	1.43	16.2	1.28	19.9

⁽¹⁾ We use robust standard errors to account for possible heteroskedasticity.

4.6. Assessing the present findings

In the prior version of our analysis, we found significantly positive CAARs ranging from 1.2 – 3.0 percent in a sample of 30 firms (Eidenmüller et al. 2009c). Why did we lose statistical significance when we moved to a larger sample consisting of 38 firms? One possible explanation, of course, is that reincorporation does not affect market valuation and that our previous results were spurious. For instance, it may be that in our old sample other news was often disclosed simultaneously with the decision to reincorporate. Although we cannot rule out this possibility, we do not believe that it was behind our old findings. As long as event days do not cluster, other news revealed on the event day can be positive as well as negative. Its effect should cancel out. To distort the results, concurrent information would have had to pull systematically in one direction.

In any event, adding eight firms to the sample (and correcting eight event days) made our CAARs drop to 0.4 – 0.9 percent. While 38 observations can be a sufficiently large sample to conduct an event study, the power of the tests decreases rapidly as the magnitude of abnormal returns falls. For a sample size of 40, a Monte Carlo simulation by MacKinley (1997) reveals that the power of a t-test decreases from 100 to 35 percent if abnormal returns fall from 2 percent to .5 percent, assuming that the standard deviation is 0.02. Thus, CAARs of 1.2 – 3.0 percent in our old sample of thirty firms gave the t-tests statistical power that is noticeably reduced for CAARs of 0.4 – 0.9 percent in a somewhat larger sample of 38 firms (MacKinley 1997). The probability of committing a type II error – failing to reject a null hypothesis when it should have been rejected – rises considerably. It follows that our new result should not be read as evidence *against* the hypothesis that firms' decision to reincorporate as an SE leads to positive abnormal returns on average. Given the lack of statistical power, the loss of significance only implies that there is no valid evidence *in favour* of a positive stock market reaction.

The key question consequently is why CAARs in our larger sample are much smaller than in our original study. We attribute this to the greater problems in identifying the correct event day for reincorporations of less prominent firms. It is often quite uncertain when news of the reincorporation decision first hit the market. Even with an announcement by the firm, it was sometimes hard to determine the release date. In a number of cases, the earliest event date we could obtain was some type of media coverage, including reports from internet sources. We cannot be sure that we have actually spotted the first occurrence of the information. All of these difficulties increased as we discovered additional firms because they were typically smaller and less well-known than the ones in our old sample. Missing the correct event day, and hence any abnormal returns associated with the decision to reincorporate, is more of a risk for the new firms in our sample.

Another, related point is that the market reaction is likely to differ depending on how the information on the possible reincorporation is revealed. A posting on a market information website may amount to little more than a market rumour. Even

a newspaper article can be misleading, as in the case of Siemens AG, where in April 2007 the weekly magazine 'Euro am Sonntag' reported plans for a reincorporation, which later turned out to be the result of a misunderstanding during an interview with a company representative. Because reports from third parties involve a greater degree of uncertainty, one would expect such information to be discounted by investors as compared to statements from the firms themselves. But even when firms announced their decision to reincorporate as an SE, the communication was often far from clear-cut. Some announcements were only made orally during press conferences, others through a mere post on the company website, still others consisted of no more than an agenda item on the invitation to the shareholder meeting. In all these cases it may have taken a couple of days or even weeks for the information to spread. Its price impact on the event day should therefore be much weaker than its total effect over time. Again, the new firms that were added later are likely to suffer more from this problem because we had already combed news providers like Reuters and DGAP for our old sample. Our old dataset, therefore, covered most firms with a well-defined announcement that was publicised on a specific date.

4.7. Concluding remarks

Our analysis of the market reactions to the decision to reincorporate under European law has led to a sobering result: in contrast to the findings in a precursor to this article, the positive abnormal returns on and after the event day cease to be statistically significant in our new and extended sample. The available data as of 1 February 2009 do not yet allow a reliable conclusion as to whether the new European Company appeals not only to firms and their managers (which we know) but also to diversified shareholders of public companies. The loss of significance in our results can be attributed to the lower quality of the data for those firms that we learned of only after our working paper was published. Our original results may thus have been diluted by new bad data. Alternatively, they may have simply been wrong in the first place. At present, there is no way of distinguishing which of these two possibilities applies. We will have to wait until more publicly traded firms opt

into the new legal form and, accordingly, provide us with a larger sample and more statistical power.

If significantly positive abnormal returns can be re-established, this would carry a general policy lesson: a broader range of company law choice for European firms may open up new opportunities and help to unlock hidden value. One implication would be that the EU should keep experimenting with enhancing company law choice as well as offering additional company types, such as the European Private Company that is presently being contemplated.⁸⁰ A larger sample would also enable us to investigate the important follow-up question of what drives the market's appreciation – if any – of the SE. We have some evidence that avoiding or mitigating the effects of mandatory worker co-determination laws plays an important role in the choice of the SE corporate form (Eidenmüller et al 2009a). However, firms for which this motive may have been relevant do not exhibit higher CAARs than others; rather, the converse is true.⁸¹ If SE incorporations keep their pace, we will be able to study this and other important issues in a not-too-distant future.

⁸⁰ See the recent Commission proposal for a Council Regulation on the Statute for a European Private Company, COM (2008) 396 final.

⁸¹ This point is elaborated for our old sample in Eidenmüller et al. (2009c).

Appendix

Table 4.3 Firm-level abnormal returns

Firm	Day (t)	-1	0	1	-1 to 1
Allianz		-.0054	-.0292***	.0034	-.0312
Bauholding Strabag		-.0170	-.0039	.0108	-.0101
BASF		.0077	-.0028	-.0000	.0049
Betbull		.0004	-.0149	-.0014	.0016
Catalis		-.0158	-.0149	-.0188	-.0495***
Colexon Energy		.0246	.0762*	-.0376	.0632
Conwert Immo. Invest		.0456***	-.0347***	-.0088	.0021
DVB Bank		-.0035	.0147	.0147	.0007
Elcoteq		.0139	-.0079	.0017	.0077
Dexia		.0088	.0264	.0016	.0368
Eurofins Scientific		.0057	.0021	-.0130	-.0052
Fotex Holding		.0325**	-.0320**	.0293*	.0298
Fresenius		-.0153	.0039	-.0106	-.0221
GfK		.0477**	.0076	.0173	.0726*
Graphisoft		.0022	.0027	.0131	.0179
HIT International Trading		.0026	.0010	.0027	.0063***
I.M. Skaugen		-.0181	.0061	-.0015	-.0135
IMW Immobilien		-.0030	-.0032	-.0031	-.0093***
Interseroh		.0086	-.0205	.0160	.0041
Klöckner & Co		.0152	-.0073	.0180	.0258
Linde		.0049	.0299**	.0185	.0533**
MAN		-.0058	-.0013	-.0087	-.0158**
Mensch und Maschine		-.0026	-.0008	.0011	-.0023
Nav. Equity Solutions		-.0056	-.0017	-.0079	-.0151***
Norddeutsche Affinerie		-.0086	-.0174	-.0159	-.0419***
Nordea		-.0048	-.0032	-.0002	-.0082*
Odfjell		.0010	-.0134	.0056	.0022
Porsche Auto. Holding		.0129	.0162	.0723***	.1015*
Prosafe		-.0254	-.0053	.0192	-.0115

table continues on the next page

Q-Cells	-.0132	.0447**	.0055	.0370
SCA Hygiene Products	.0042	-.0141	-.0374*	-.0473
Scor	.0025	.0226	.0374**	.0625**
SGL Carbon	-.0212	.0171	.0155	.0113
Solon	-.0289	.0059	-.0087	-.0316
Songa Offshore	.0035	-.0023	-.0023	-.0010
Surteco	-.0008	-.0019	-.0001	-.0028*
Sword Group	-.0006	.0170	-.0288	-.0123
Wiener Privatbank	.0000	-.0008	.0001	-.0006

*** indicate the 1 percent, ** the 5 percent and * the 10 percent level of significance.

Chapter 5

Where Do Firms Issue Debt?

An Empirical Analysis of Issuer

Location and Regulatory

Competition in Europe

5. Where Do Firms Issue Debt? An Empirical Analysis of Issuer Location and Regulatory Competition in Europe*

5.1. Introduction

If offered a choice, firms will opt for the legal framework that best suits their business needs and the transaction at hand. It has been documented for a broad range of settings that firms choose a law of their liking and thus engage in legal arbitrage (see Fleischer 2010 for a definition). The most famous example is corporate law. In the US, firms have always been able to incorporate in any state, thereby effectively choosing the corporate law under which they are organised. Because supplying corporate law to firms may be attractive for states, jurisdictions in the US have engaged in what has come to be known as ‘charter competition.’ Much more recently, a number of rulings by the European Court of Justice have set off a similar contest among European jurisdictions (Becht et al. 2008).

Firms’ choice of law and regulatory competition between jurisdictions is not confined to corporate law. Other examples include forum shopping with respect to insolvency proceedings or the cross listings of public companies. We consider a somewhat less prominent but highly relevant area of business law: the legal rules governing corporate bonds. Recent legislation indicates that European jurisdictions actively compete in this area. Germany, for example, has just modernised its Bond

* This chapter appeared under the same title in the ECGI working paper series in finance. A German version will be published in the conference volume *Ökonomische Analyse des Europarechts* edited by Peter Behrens, Thomas Eger and Hans-Bernd Schäfer. © 2011 by Mohr Siebeck. All rights reserved. We thank the LMU-ifo Economic and Business Data Center (EBDC) for providing us with the data from the SDC Platinum. We also gratefully acknowledge the withholding tax data provided by the Centre for European Economic Research (Zentrum für Europäische Wirtschaftsforschung, ZEW). We are indebted to a number of experts who provided us with valuable institutional details of the European debt securities markets: René Bösch and Daniel Daeniker (Homburger law firm, Zurich), Tom Boedts and Jean-Marc Gollier (Eubelius law firm, Brussels), Xavier Foz (Roca Junyent law firm, Barcelona) and Marco Palmieri (University of Bologna). In addition, we are grateful for valuable comments on this paper from Matthias Dischinger, Andreas Haufler, Florian Heiss, Pravin Trivedi, Joachim Winter, Klaus Wohlrabe and the participants in the Law and Economics Workshop at UC Berkeley, the Law and Finance Workshop at the University of Oxford, the Field Day Applied Economics - Mark II and the Public Economics Seminar at the University of Munich as well as the Law and Economics Workshop at the University of Bonn. We also thank participants in the 7th Annual Conference of the German Association for Law and Economics and the 4th French-German Talks in Law and Economics in Trier as well as the XII. Travemünder Symposium zur ökonomischen Analyse des Rechts.

Debenture Act (SchVG) to make it more competitive.⁸² To the best of our knowledge, we are the first to study the extent of legal arbitrage and regulatory competition in corporate debt issues in Europe. Our work examines the motives behind firms' choices. Knowing why firms prefer certain jurisdictions and avoid others can provide valuable guidance to lawmakers seeking to improve their own legal framework. Such insights are also important if one wishes to evaluate the effects of regulatory competition both generally and in the corporate bond market. Firms' ability to select from a menu of jurisdictions is not a given but the result of conflict-of-laws rules. These 'rules of the game' can be changed if, for instance, the European Union concludes that the quality of corporate bond law deteriorates as a result of regulatory competition.

Investigating legal arbitrage and regulatory competition in the European corporate bond market can also contribute to the 'law and finance' literature. The main proposition of this school of thought is that 'law matters', i.e. that legal rules advance financial and economic development. Numerous studies have documented a link between economic outcomes (such as the relative size of securities markets, ownership concentration or the amount of credit in the economy) and legal rules and institutions. A difficulty, however, lies in determining the direction of causality.⁸³ The coincidence of legal rules and indicators of financial development can mean that 'good' law causes superior economic performance. But it could also be the other way round, with the law responding to an increased demand for legal protection due to a growth in specific activities. Identifying causality, therefore, is a major challenge facing the law and finance movement. In this regard, legal arbitrage can be an indirect piece of evidence: If market players shop for particular legal rules, it follows that differences in law matter for economic activity. For instance, stronger creditor rights may coincide with a greater volume of credit in the economy. If firms facing a choice between different jurisdictions actively seek

⁸² See the somewhat confused statement of the former German justice minister, Brigitte Zypries: 'It is not the case that German issuers are not choosing German law at all. But we have found that many of them prefer foreign law.' ('Es ist nicht so, dass deutsche Emittenten deutsches Recht überhaupt nicht mehr wählen. Aber wir haben festgestellt, dass viele von ihnen ausländisches Recht bevorzugen.'), Interview with *Börsen-Zeitung*, May 13, 2008.

⁸³ See La Porta et al. (2008) for extant evidence on the direction of causality.

those with more robust creditor protection, then there is a case that creditor rights are the cause, and financial development the effect.

In the realm of public debt, legal arbitrage can occur at two different levels. First, debt securities are themselves governed by the terms of the indenture and hence by contract law. Second, there are various legal rules that attach to the issuer of the securities and that are equally important to investors and the firm. In this contribution, we examine legal arbitrage with respect to the second set of rules. Firms can effectively choose the applicable law by deciding where to locate the issuer of the debt securities – either by using an existing subsidiary or by establishing a new one in the jurisdiction of choice. To examine this decision, we employ a gravity model, nowadays a workhorse in international economics. Although it has been applied mostly to international trade, there is a more recent literature adapting this model to financial flows (Eaton and Tamura 1994; De Ménéil 1999; Portes et al. 2001; Portes and Rey 2005) and M&A activities (Ashcroft et al. 1994; Di Giovanni 2005; Delannay and Méon 2006; Hyun and Kim 2010). To our knowledge, this is the first analysis implementing a gravity model in a law and finance context.

The basic idea of gravity models is to focus not on individual countries but on the flows in country-pair relations. Our dependent variable, accordingly, is the number of cross-border debt security issues between a ‘country of origin’ and a ‘host country’ in a given year. We study issuer choice in the European corporate debt market based on a dataset of 870 bilateral country relations for the period 1980 to 2008. We find that, in absolute terms, Germany has by far the highest outflow of debt issues, while the Netherlands, the UK, Luxemburg and Ireland see the most inflows (in that order). The data clearly support the prediction that inflows are influenced positively by a low withholding tax rate. Corporate tax rates also play a role: If the multinational firm’s ultimate parent faces a high corporate tax burden, it is more likely to have foreign subsidiaries issue debt securities. We see this as evidence of profit shifting. At the same time, however, higher corporate tax rates appear to attract debt security issues by subsidiaries of multinational firms,

particularly asset backed securities. We explain this somewhat contradictory finding with a strategy to use locally issued debt securities as a tax shield ('tax shield hypothesis'). Finally, we find only indicative evidence that the level of creditor protection is important for the location of debt security issues. Creditor rights under bankruptcy law do not seem to matter, but the effectiveness of contract enforcement positively influences the number of cross-border bond issues attracted by a particular jurisdiction.

In section 5.2. we describe the legal environment for corporate debt security issues and formulate hypothesis on the influence of creditor protection rules and tax law on issuer choice and location. Section 5.3. presents the methodology and data, section 5.4. the gravity model results. Section 5.5. concludes.

5.2. The legal environment for corporate debt security issues

One can think of a variety of reasons why a firm would have a foreign subsidiary issue debt securities. We are interested whether 'law matters' for this decision, that is, whether by choosing a foreign venue firms engage in legal arbitrage and, accordingly, whether jurisdictions can attract more cross-border issues by changing their legal rules. Based on theoretical considerations, there are two main aspects of the legal environment that can influence a firm's decision to locate its debt security issue in a particular jurisdiction. First, tax considerations can play a role in choosing where to issue debt securities. Therefore, tax law is a dimension in which we try to spot legal arbitrage (subsection 5.2.2.). Second, jurisdictions can differ in the degree of protection afforded to the holders of debt securities. If there is significant variation in this regard, one would expect firms to take it into account (subsection 5.2.3.). Before identifying relevant differences in these two areas of the law, we should clarify what we mean by a 'foreign' subsidiary or, correspondingly, by the 'location' of an issuer (subsection 5.2.1.).

5.2.1. 'Location' of issuer and parent

There is a great variety of legal criteria – depending on legal context – to determine an entity's 'location.' The place of incorporation and the statutory seat are strictly formal criteria. Many others consider the actual business activities, such as the 'headquarters,' 'centre of main interests,' the 'real seat,' or the 'centre of management.' These latter substantive criteria should be very closely aligned. In our data and hence in our analysis, 'issuer location' is defined as the country of incorporation. Accordingly, a 'foreign issuer' is an entity incorporated in a jurisdiction different from the corporate parent. From an empirical point of view, the country of incorporation should correlate strongly with the more substantive 'location' concepts. Before 1999, many European Economic Area (EEA) member states followed the 'real seat' doctrine and required a legal entity to incorporate in the jurisdiction in which it had taken its 'real seat,' i.e. its central management or principal place of business. While the European Court of Justice in its groundbreaking *Centros* (1999), *Inspire Art* (2002) and *Überseering* (2003) judgments has effectively dismissed the real seat doctrine and some firms have subsequently incorporated out-of-state (Becht et al. 2008; Eidenmüller 2007), there are still significant barriers (Becht et al. 2009), and 'reincorporations' of existing entities have become workable only recently.⁸⁴ Accordingly, it seems safe to assume that most European firms, especially the large ones, are still incorporated in the country of their main business activities. For the timeframe of our investigation ending in 2008, the incorporation state should largely coincide with the location of the main business activities and the other substantive criteria.

⁸⁴ A reincorporation is typically effected by means of a cross-border merger. Member states of the EU had to transpose the Directive 2005/56/EC on cross-border mergers of limited liability companies by December 2007.

5.2.2. Tax law

The location of the issuer has important tax implications.⁸⁵ One potential type of tax law arbitrage involved in issuer location choice relates to the taxation of interest paid to bondholders. Interest is part of the taxable income in the investor's home country. From the point of view of the issuer, interest payments are expenses that reduce corporate income and hence the corporate tax burden. Many states, however, levy an additional tax on interest payments from the issuer. The tax is meant to be a tax on income received by investors, but it is collected as a 'withholding tax' 'at the source.' Issuer location thus determines whether and at what rate the debt security is subject to withholding tax. Typically, the investor's home country will grant a tax credit to equalise the effect of the withholding tax. Yet claiming the credit creates an additional burden and can entail costly delays. More importantly, a tax credit does not eliminate the withholding tax for tax-exempt investors such as, notably, US employee pension plans and educational endowments. If investors are affected by the withholding tax, they will refrain from buying the debt security or demand to be compensated through higher interest rates; in either event, the firm's cost of capital rises. We thus hypothesise that jurisdictions with low withholding taxes or no withholding tax at all attract more issuer subsidiaries.

In addition, issuer location choice can be influenced by differences in corporate income tax. In this respect, there are two plausible theories that lead to opposite predictions. The first can be referred to as the 'profit shifting hypothesis.' As a general rule, an incorporated entity's profits are subject to corporate income tax in its country of residence. By shifting profits to another entity in a different jurisdiction, firms exploit variation in corporate income taxation and, particularly, in the applicable tax rate.⁸⁶ There is a growing literature on corporate tax strategies designed to channel income towards entities in low tax jurisdictions. Tax laws seek

⁸⁵ Tax laws and conventions use different location ('residence') criteria, cf. Art. 4(1) of the OECD Model Convention with Respect to Taxes on Income and on Capital. For the reasons just stated, we assume that the issuer's tax residence is in the incorporation state.

⁸⁶ Apart from tax rates, profit shifting can be motivated by specific tax benefits. A prominent example were Belgian 'coordination centers' of multinational firms, which (until 2010) enjoyed a significantly lower tax burden, see EU Council (1999) for details.

to prevent profit shifting by requiring transactions between affiliate entities to be conducted ‘at arm’s length’, i.e. at prices that unrelated parties would demand and pay in the open market. Yet firms appear to be violating the arm’s length principle: Dischinger (2008) and Huizinga and Laeven (2008), among others, provide evidence on a link between reported profits of affiliate entities and corporate tax rate differentials. As an example of the tax planning devices used by multinationals, Dischinger and Riedel (2008) and Karkinsky and Riedel (2009) demonstrate that firms locate their intellectual property in countries with lower corporate tax rates. They explain this finding with the opportunity to transfer profits into low tax jurisdictions by charging higher royalty prices than the arm’s length principle permits.

Having a subsidiary in a low tax jurisdiction issue debt securities could follow an analogous strategy: If all or part of the debt is raised to finance not (only) the business of the issuer-subsubsidiary itself but (also) the operations of the parent or of subsidiaries in other jurisdictions, the issuer serves as an internal bank for the group. Charging a higher interest rate for intra-group loans than it has to pay to investors, the issuer realises a spread at the expense of its intra-group borrowers. In consequence, the issuer shows a higher profit whereas profits of the parent and/or the other subsidiaries are diminished. Profits are siphoned from high tax to low tax jurisdictions.⁸⁷ With regard to the decision to issue debt securities abroad, the profit shifting hypothesis thus predicts that parents from high-tax jurisdictions issue debt securities through subsidiaries in low tax jurisdictions.⁸⁸ For our empirical analysis,

⁸⁷ In principle, profits could also be shifted from the subsidiary (high tax jurisdiction) to the parent (low tax jurisdiction). To accomplish this, the subsidiary would have to charge lower interest rates than it has to pay to investors. Tax authorities in the subsidiary’s jurisdiction would face little difficulty detecting and neutralizing such a scheme by treating the net loss as a disguised dividend. By contrast, it is harder for tax authorities to determine that a foreign affiliate is charging more for a loan than its own cost of capital because they would need to observe the financing terms of the foreign entity, which is not subject to their jurisdiction.

⁸⁸ A second argument supports this prediction: Raising debt through the subsidiary can also finance the subsidiary’s own operations. In this regard, the subsidiary’s debt issue substitutes for an intra-group loan from the parent. Such downstream loans are a way to shift profits from the subsidiary by charging an interest rate above the parent’s own cost of capital. But if the subsidiary faces a lower tax rate than the parent, there is no reason to shift profits to the parent. Hence, one would expect to see fewer downstream loans and, all else equal, more debt being issued by the subsidiary itself.

the profit shifting hypothesis suggests that lower corporate tax rates have a positive effect on cross-border debt security issues in a given jurisdiction.

The profit shifting hypothesis builds on the idea that multinational firms use interest rate spreads between external debt and intra-group loans to direct corporate income to low tax jurisdictions; lenders within the group ‘overcharge’ other affiliates to siphon off profits. By contrast, the competing ‘tax shield hypothesis’ focuses on a general tax characteristic of debt *as opposed to equity*. There is a major tax advantage of debt over equity in that interest expenses are deductible whereas dividends are not; payments to debtholders reduce the firm’s tax burden, payments to equityholders do not (Modigliani and Miller 1963). Debt financing thus creates a tax shield for the firm’s cash flows insofar as they are owed to creditors.⁸⁹ The tax-induced incentive to substitute equity with debt rises with the corporate tax rate. Based on this line of reasoning, firms have a foreign subsidiary issue debt securities in order to protect the subsidiary’s cash flows against corporate tax. Erecting the tax shield at the foreign subsidiary instead of the parent is better the higher the subsidiary’s corporate tax rate both in absolute terms and relative to the parent’s. The tax shield effect thus runs in the opposite direction of the profit shifting hypothesis stated above. It predicts more debt securities being issued by subsidiaries in (absolute and relative) high tax jurisdictions. Accordingly, lower tax rates should have a negative impact on cross-border issues in a given country.

Dischinger et al. (2010) provide an instructive overview of the extant evidence on the tax shield effect within multinational groups. For a sample of 14,332 European subsidiaries of multinational firms, they demonstrate that both a higher corporate tax rate for the subsidiary and a larger difference in statutory corporate tax rates between parent and subsidiary significantly increase the subsidiary’s indebtedness. Using micro data on foreign subsidiaries of US firms, Desai et al. (2004) show that leverage increases with corporate tax rates. Huizinga et al. (2008) calculate explicit

⁸⁹ In principle, the different tax treatment of debt and equity at the level of the corporation can be balanced at the level of the shareholder/debtholder. For instance, shareholders can be granted a credit or a preferential rate on dividends to compensate them for the tax burden on equity at the level of the corporation. As a matter of fact, there is generally no such (full) compensation in cross-border taxation.

measures of the marginal tax rate on equity and the tax incentive to shift debt to a subsidiary. They find both variables to have a significant positive effect on the leverage of foreign subsidiaries in a large panel of European firms. In sum, the available evidence supports the tax shield hypothesis. Whether the profit shifting effect exists (with regard to issuing debt securities) and whether it neutralises or even dominates the tax shield effect for debt securities is a matter we seek to determine empirically.

5.2.3. Creditor protection rules

In the first instance, bondholders look to the contractual terms of their debt security for protection against opportunist behaviour by the debtor, particularly the incentive to increase default risk (Jensen and Meckling 1976). The bond indenture will typically stipulate safeguards such as financial covenants or a trustee acting on behalf of bondholders. Contract law determines the validity of these contractual provisions and can impose additional rules. The applicable contract law may thus be a primary concern for bondholders. However, the contract law governing the securities does not depend on the issuer's domicile. Private international law permits a choice of law, and debentures usually contain a choice-of-law clause.⁹⁰ An issuer in jurisdiction A can easily choose the contract law of jurisdiction B to govern its debt securities. Therefore, we do not expect contract law to matter for the location of issuers.

Apart from contractual safeguards, investors can rely on statutory or judge-made rules against debtor opportunism. Such rules will be found in corporation law and bankruptcy law.⁹¹ They include capitalisation requirements, restrictions on the

⁹⁰ The majority of jurisdictions in our sample were subject to the Rome Convention on the Law Applicable to Contractual Obligations (which by the end of 2009 has been replaced by the 'Rome I' Regulation (EC) No. 593/2008). Art. 3 of the Convention (and equally of the Regulation) contains the basic rule of free choice of law. Art. 1(2)(c) of the Convention (Art. 1(2)(d) of the Regulation) exempts from its scope only obligations arising from the 'negotiable character' of an instrument.

⁹¹ Securities law (capital market law) can also benefit creditors, particularly by imposing disclosure duties on issuers. Such requirements usually apply if debt securities are listed at a stock exchange or offered to the public. For the rules determining the applicable securities laws in Europe see Enriques and Tröger (2008).

transfer of assets to shareholders and third parties, fiduciary duties of directors and corporate officers, liability rules and rules on (a change in) corporate control. Corporation law varies with the issuer's 'location' in our data. Much the same is true for bankruptcy law. Under Art. 3(1) of the European Insolvency Regulation (EC) No 1346/2000, the 'centre of a debtor's main interests' determines jurisdiction for (main) insolvency proceedings. Without proof to the contrary, the Regulation presumes that a corporate entity has its 'centre of main interests' at the place of its 'registered office,' that is, in the state of incorporation. The Regulation entered into force in EU member states on May 31, 2002. However, its rule on bankruptcy jurisdiction reflected the prevailing view by European jurisdictions even before its enactment. In sum, creditor protection rules embodied in corporate law and bankruptcy law are governed by the jurisdiction in which the issuer is located.

In principle, a multinational firm chooses a foreign creditor protection law by issuing debt securities through an entity located in the desired jurisdiction. Better creditor protection rules should tend to reduce the agency costs of debt and hence the firm's cost of capital. Choosing a creditor-friendly jurisdiction to issue debt securities can thus help the firm to save interest expenses or avoid more restrictive bond covenants. In line with this conjecture, the 'law and finance' literature starting with La Porta et al. (1997, 1998) has used an index of creditor rights to show that debt financing rises with the degree of creditor protection. In the most comprehensive sample so far, consisting of 129 countries, Djankov et al. (2007) find a significantly positive relation in a cross-country OLS regression between the creditor rights index and credit extended to firms and individuals (scaled by the country's GDP or population). Haselmann et al. (2009) corroborate this evidence using microdata on bank loans and changes in creditor rights laws in Eastern European transitions economies.⁹² Mansi et al. (2009) and Qi and Wald (2008) document that, within the US, firms from states with more stringent restrictions on payouts to shareholders enjoy lower bond spreads and have to agree to fewer debt covenants in their bond indentures.

⁹² The results of Haselmann et al. (2009) are driven by legal rules on collateral, which are not included in the widely used creditor rights index of Djankov et al. (2007).

Drawing on these insights, it seems natural to hypothesise that jurisdictions with stronger creditor rights attract more cross-border debt security issues. However, legal arbitrage regarding creditor protection law is more difficult to accomplish. Corporation and bankruptcy laws of a given jurisdiction govern only domestic entities and their assets. While a multinational firm with its ultimate parent in country A can set up a subsidiary in country B to issue debt securities, the (supposedly superior) corporation and bankruptcy laws of B apply only to the subsidiary and its assets. In practice, the parent will often extend a guarantee to the issuer's creditors. As a consequence, if a default occurs, the guarantee has to be enforced against the parent, which is subject to the corporation and bankruptcy laws of country A. Employing a foreign issuer does not change creditor protection rules with regard to the assets of the parent (or any other group entity extending a guarantee) located in another jurisdiction (Figure 5.1). Therefore, if a multinational firm wishes to choose a different jurisdiction for its creditor protection law, it has to transfer the underlying assets to the entity in the preferred jurisdiction. Creditor rights depend not so much on where the debt securities are issued but on where the assets backing the securities are held.

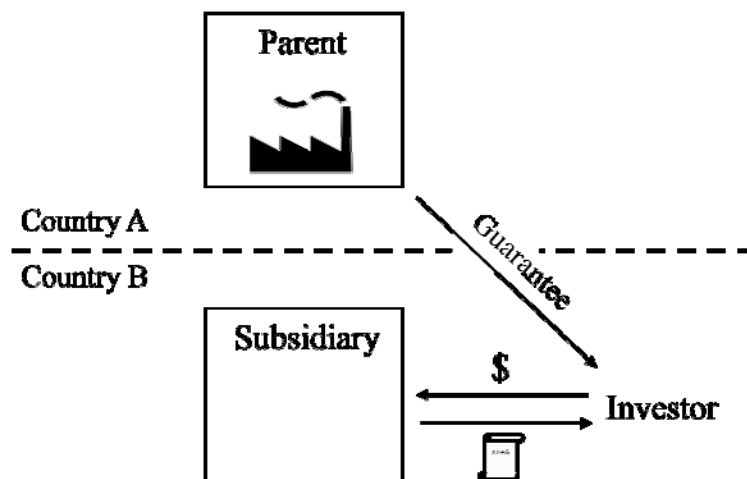


Figure 5.1 Legal arbitrage with regard to creditor protection rules if assets are held by the parent

A general conclusion is that legal arbitrage regarding creditor protection rules can be very costly. It is not enough to set up a foreign subsidiary (if it does not exist already) and to use it as issuer of the debt securities. In addition, the firm would have to transfer the assets underlying the debt security to the foreign subsidiary, which will often be infeasible or too expensive, not least because capital gains are realised and become subject to corporate income tax. It thus seems that the cost of legal arbitrage would typically exceed any benefits from superior creditor protection rules.

Yet in one special case, legal arbitrage is more likely to be feasible: The firm does not have to shift assets insofar as a subsidiary itself is holding assets, as in the case of an operating subsidiary. In such a setting, the firm can choose to issue debt securities through the subsidiary to take advantage of its better creditor protection rules. The alternative would consist of selling debt claims against the parent. The parent's creditors have indirect recourse against the subsidiary through the parent's shareholdings. Of course, there is a crucial difference: Regarding the subsidiary's assets, creditors of the subsidiary have priority over the parent and its creditors.⁹³ Nonetheless, debt issues by the parent can serve as substitutes, albeit imperfect ones, for debt issues by the subsidiary (Figure 5.2).

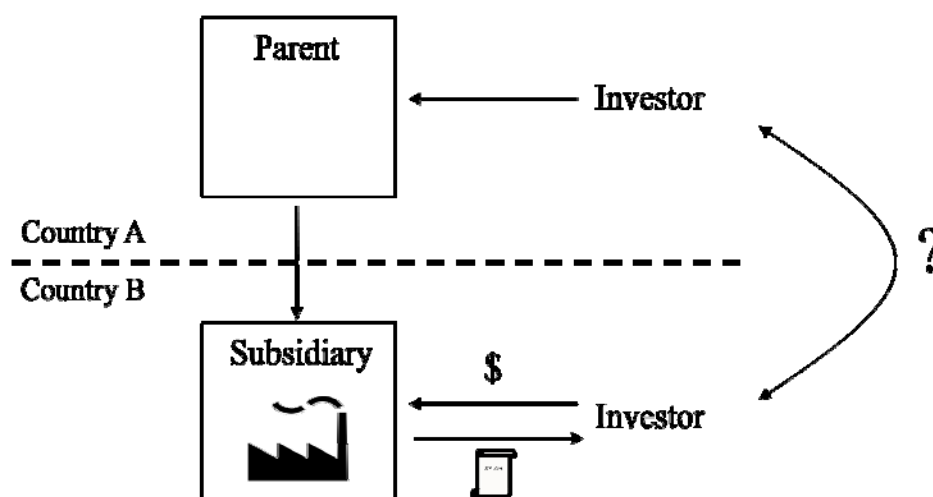


Figure 5.2 *Legal arbitrage with regard to creditor protection rules if assets are held by operating subsidiary*

⁹³ Conversely, the subsidiary's creditors cannot enforce their claims against the parent's assets (provided that no specific guarantees or security interests have been granted).

All else equal, we expect differences in creditor protection rules to have an impact on the proportion of debt securities issued by a parent and its subsidiary, respectively.⁹⁴ In a recent contribution, Banerjee and Noe (2010) analyse the corresponding trade-off in terms of minimising the agency costs of debt. They predict that jurisdictions with stronger creditor rights (i.e. a stronger bargaining position for creditors in debt renegotiations) capture a larger share in the total debt being issued by a multinational firm. Consistent with this prediction, Desai et al. (2004) find that foreign subsidiaries of US-based multinational firms incur higher leverage and pay less interest in countries with stronger creditor rights (as measured by the index of La Porta et al. 1998). In addition, the greater indebtedness is driven by more external borrowing while there is less credit extended by the parent. Likewise, Huizinga et al. (2008) also find creditor rights (taken from Djankov et al. 2007) to be a good predictor for subsidiary leverage with respect to a very large panel of European multinational firms ranging from 1994 to 2003.

5.3. Methodology and data

5.3.1. Econometric approach

To identify country-specific differences in law that motivate legal arbitrage, we analyse debt issues where the corporate parent and the debt issuer are located in different jurisdictions ('cross-border debt security issues'). We are interested in the number of cross-border debt security issues in a country pair consisting of a 'country of origin' (where the corporate parent is located) and a 'host country' (location of the subsidiary) in a given year. We thus seek to identify the legal factors influencing the debt security issues a host jurisdiction attracts in a particular country-pair relation. Using country-pair relations has the obvious advantage of revealing more information than a standard country panel because we observe the origin and target of cross-border issues at the same time.

A general difficulty with count data is how to deal with zero cross-border issues. Discarding them would be a poor solution because the countries without any cross-

⁹⁴ For the US, Kolasinski (2009) reports that issues of debt securities by subsidiaries amounted to 13 % of all public debt issued by non-financial firms.

border issues may result from a different data generating process (Baltagi 2008). For instance, certain states might have chosen to abstain from offering even a minimum legal infrastructure for debt securities and hence do not attract any foreign debt issues. In this case, the zero observations would not be representative of the overall sample. By dropping them, we would introduce a selection bias. An econometric solution to this problem would be to apply a two-step estimation technique as suggested by Helpman et al. (2008). However, in the present context we cannot think of a plausible exclusion restriction for the identification of the second stage equation. We therefore rely on the alternative approach suggested by Westerlund and Wilhelmsson (forthcoming): We abolish the traditional log-linearised gravity model and use the data in its original non-linear form instead. Using maximum likelihood (ML) methods, we can naturally estimate the zero observations and handle the count characteristics of the data more appropriately. As Westerlund and Wilhelmsson (forthcoming) have shown based on Monte Carlo simulations, the Poisson ML estimator can deal with a large number of zeros while suffering from considerably less bias than the traditional log-linear OLS estimates. We thus start out from a Poisson regression model as initially suggested by Hausman et al. (1984). We then assess how well the Poisson estimator actually predicts the data at hand. For the baseline specification below we find the Poisson estimator to correctly predict any counts above 5 while it does rather poorly in forecasting the zero observations (69 instead of 91 percent zeros are correctly predicted). This result may be due to the fact that the Poisson model suffers from overdispersion. Comparing the Poisson estimator to the negative binomial (NB) estimator, we find the latter to predict the data almost perfectly for all values (all of the 91 percent zero observations are correctly predicted). We therefore reject the Poisson estimator in favour of the NB estimator.

A second econometric concern is endogeneity. Panel data has the advantage that it permits general types of country specific heterogeneity. To limit the likelihood of omitted variable bias, we have estimated all models postulating time invariant country-pair effects. This specification solves the problem of omitted variable bias much better than including a handful of control variables that may influence cross-

border debt issues (Baldwin and Taglioni 2006). The model thus takes unobservable time invariant variables like a history of legal stability or the quality of legal institutions into account, without having to specify them explicitly in the equation. Due to the fact that the conditional fixed effects NB estimator as suggested by Hausman et al. (1984) is a ‘pseudo’ panel estimator, the model permits the simultaneous identification of explicit time invariant country pair effects like the distances between two jurisdictions.

We specify the following baseline equation considering the theoretical concepts stated above:

$$\Pr (y_{ij1}, y_{ij2}, \dots y_{ijT}) = F(\mathbf{Gravity}_{ijt} + \mathbf{Risk}_{it} + \mathbf{Law}_{it} + EMU_{it})$$

where y is the number of cross-border debt issues attracted by the host country i from the country of origin j in year t . $F(\cdot)$ denotes the NB distribution function as in Baltagi (2008). **Gravity** is a vector of *distance*, *contiguous*, *language*, *imports/exports* and *bond market size*. Likewise, **Risk** and **Law** are vectors of *government yield* and *inflation* as well as *withholding tax*, *corporate tax*, *creditor rights*, *legal origin* and *contract enforcement* respectively (for details see Table 5.1).

The distribution in our data has many support points, but action concentrates on a few values only. Therefore, we additionally consider an ordered probit model in which we collapse the number of events into a small number of groups and rank them on an ordinal scale. Another robustness check (potentially improving the specification) might be a dynamic model. From a theoretical perspective, one might conjecture that certain pair relations get more intense over time due to learning effects or path dependence. However, since dynamic estimators require us to make additional assumptions while at the same time being more sensitive to omitted variables, we decided not to specify such a model. We take some comfort in that the data does not seem to exhibit much stationarity (see Figure 5.3). For instance, the number of debt issues by German multinational firms through subsidiaries in the

Netherlands peaked in the year 1996 and decreased steadily thereafter. Note that the *total number* of cross-border debt security issues in all country pairs increased over time.

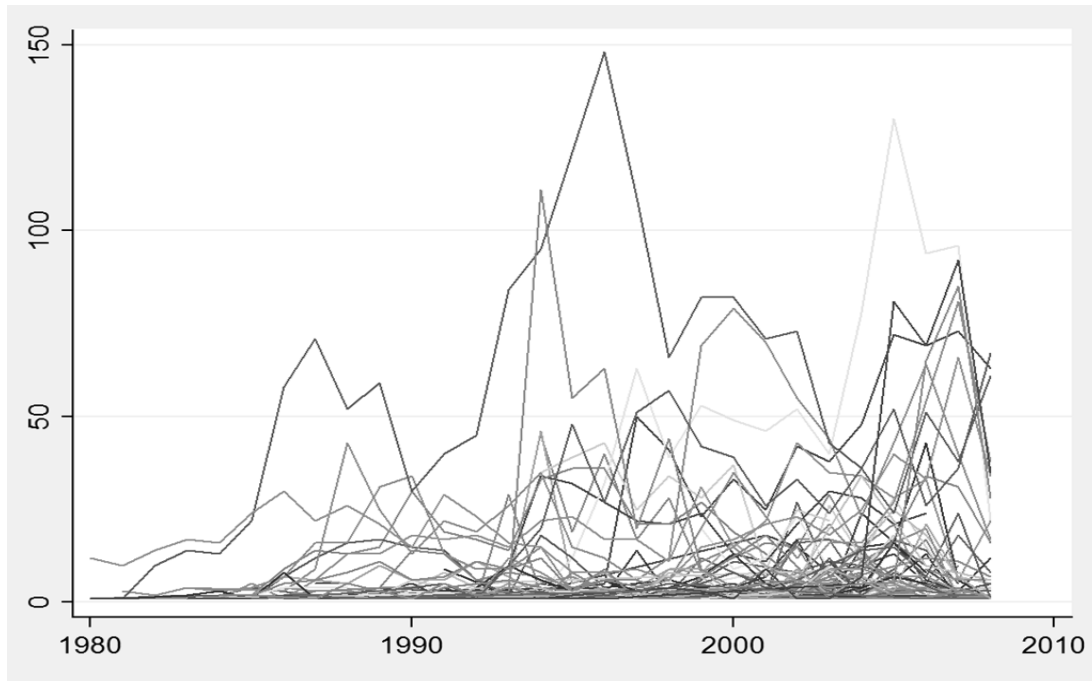


Figure 5.3 Cross-border debt security issues over time by pair relation

5.3.2. Data and summary statistics

Our analysis is based on a sample of corporate debt securities issued by subsidiaries of multinational corporate groups. The data on debt issues was extracted from the Thomson Financial ‘SDC Platinum’ database.⁹⁵ To qualify for inclusion, both the ultimate parent and the subsidiary issuing the securities have to be located in countries that by 2009 were member states of the EU or the EFTA. As we do not observe a single issuer or corporate parent from Malta, we are left with 870 bilateral relations for the period 1980 to 2008 which amounts to 25,230 observations (30 countries of origin \times 29 host countries \times 29 years).

⁹⁵ As ‘SDC Platinum’ is supposed to be exhaustive, the absence of cross-border bond issues should be interpreted as an absence of activities rather than a lack of data. Hence, we coded the absence of cross-border bond issues by replacing missing values with zeros.

In our overall sample, we consider a broad array of debt securities, which consist mostly of straight bonds, floating rate notes, medium term notes, and asset backed securities; the latter category includes among others collateralised debt obligations and the German ‘Pfandbriefe’ (covered bonds).⁹⁶ As a robustness check and to study some of our hypotheses in more depth, we construct two sub-samples – one with straight bonds and the other with asset backed securities. While investors in asset backed securities typically do not have recourse to other assets of the firm, parents and other entities of the group often provide guarantees for straight bonds issued by subsidiaries. Straight bonds are thus more likely to be backed not just by the issuer but also by entities in other jurisdictions. In total, we observe 11,718 cross-border issues of debt securities (4,719 straight bonds, 1,275 asset backed securities⁹⁷).

We merge the data on cross-border debt issues with several macroeconomic, financial and legal variables. In the international trade literature, geographic distances are interpreted as a proxy for transaction costs. Despite the intangible nature of financial transactions and communication technologies, transaction costs associated with geographic distance may still play a role. For busy investment bankers, legal advisors and financial managers, flying from Warsaw to Lisbon takes nearly twice as long as flying to London. We therefore include the distance (in 1,000 kilometres) between capitals and a dummy variable indicating whether the country pair is geographically contiguous. Furthermore, we include another dummy variable which indicates whether the two countries share an official language although we expect that the financial industry nowadays generally speaks English. The data on geography and language was taken from the *Centre d’Etudes Prospectives et d’Informations Internationales* (CEPII) database.⁹⁸ We further use the average export (in billion US \$) of each individual country pair obtained from

⁹⁶ For an overview of the various types of asset backed securities see Bank for International Settlements (2009).

⁹⁷ Note that the subsamples leave out various types of debt securities, which explains why they do not add up to the full sample.

⁹⁸ Available at <http://www.cepii.fr/anglaisgraph/bdd/distances.htm>.

the International Monetary Fund (IMF) Direction of Trade Statistics (DOTS) as a measure of countries' economic connectedness.⁹⁹

Additional macroeconomic variables come from the Bank for International Settlements (BIS) as well as the IMF World Economic Outlook (WEO) database. The former source provides information on the size of the international bond market (in billion US \$) in the respective economy. Total bond market size is a measure for economies of scale and scope. A larger market tends to exhibit more liquidity and hence lower costs of capital. Larger markets may also be more developed and offer more advanced financial service providers. The WEO database offers information on classic macroeconomic variables like the country's inflation rate and government bond yield. Both variables are considered as measures for country specific risk.

As suggested by the tax law considerations in section 5.2.2., the first variable of interest is the withholding tax rate which would be deducted from interest paid to investors. We predict that a higher withholding tax makes a jurisdiction less attractive as a host for cross-border debt issues. The data come from the *Zentrum für Europäische Wirtschaftsforschung* (Centre for European Economic Research). The second variable of interest is corporate income tax rates. To test the profit shifting and tax shield hypotheses, we use panel data from the OECD tax database measuring the basic central government statutory (flat or top marginal) corporate income tax rate (including surtax if applicable).¹⁰⁰ The panel was supplemented in part by information from the KPMG Corporate and Indirect Tax Rate Surveys.¹⁰¹

The third set of variables of interest comes from the law and finance literature and is specified to test the hypothesis that creditor protection rules matter for issuer

⁹⁹ There is an old tradition in the estimation of gravity models of using import data only (as nations spend more time on measuring imports than exports to avoid tariff fraud). Since 1993, trade data is generated from the VAT statistics, so that exports provide a more accurate measure than imports.

¹⁰⁰ The data is available at http://www.oecd.org/document/60/0,3343,en_2649_34533_1942460_1_1_1_37427,00.html#cci.

¹⁰¹ We extended the initial OECD panel for Bulgaria, Cyprus, Estonia, Iceland, Latvia, Lithuania, Romania and Slovenia.

location choice (see section 5.2.3. above). La Porta et al. (1998) have created a *creditor rights* index which has been used in dozens of previous studies. Djankov et al. (2007) provide panel data ranging from 1978 to 2003.¹⁰² The index is designed to measure the rights of lenders in a particular jurisdiction on a scale from 0 to 4 (with 4 indicating the highest degree of creditor protection). The index is incremented by 1 for each of the following bankruptcy law provisions: (i) There are restrictions for debtors to file for reorganisation, such as creditor consent; (ii) secured creditors can seize the collateral if the reorganisation petition is approved, i.e. there is no automatic stay; (iii) secured creditors enjoy priority over other creditors, such as workers or the government; (iv) the debtor does not retain administration of its assets during reorganisation. While we are somewhat sceptical of how well the creditor rights index actually measures creditor protection in bankruptcy law, it is the best proxy we have. Because the *creditor rights* variable in our study has a panel structure, it is less likely to suffer from miscoding or a confounding variable problem. We further use information on the number of days it takes to resolve a payment dispute through courts. The data for our *contract enforcement days* variable come from Djankov et al. (2003) and provide a measure for the efficiency of the judicial system. Finally, we include the *legal origin* of each country from Zweigert and Kötz (1998). To the main advocates of the law and finance movement, legal origin determines the ‘style of social control of economic life’ (La Porta et al. 2008). According to this view, the common law tends to be more concerned with free market contracting and, therefore, provides stronger safeguards for investors and creditors. Hence, *legal origin* could be a proxy for more robust creditor protection.

¹⁰² As the data is only available until the year 2003 but does not exhibit much variance over time, we extend the latest observation in all cases until the year 2008.

Table 5.1 Variable descriptions

Variable	Description
Gravity	
<i>distance</i>	Identifies the bilateral distance (in 1,000 kilometers) between the capitals of the two countries. Source: Centre d'Etudes Prospectives et d'Informations Internationales (CEPII).
<i>contiguous</i>	Equals 1 if the two countries are contiguous and 0 otherwise. Source: CEPII.
<i>language</i>	Equals 1 if the two countries share a common official language and 0 otherwise. Source: CEPII.
<i>imports/exports</i>	Is the host country's average of imports from and exports to the country of origin (in billion US \$) for each year from 1980 to 2008. Source: IMF Direction of Trade Database.
<i>international bond market</i>	International debt securities by nationality of issuer (in billions of US dollars) for each year from 1980 to 2008. Source: BIS Quarterly Review Statistical Appendix Table 15B: International bonds and notes: Amounts outstanding all issuers.
Risk	
<i>government bond yield</i>	Average government bond yield to maturity (in percent per annum) for each year from 1996 to 2007. Source: IMF International Financial Statistics Yearbook.
<i>inflation</i>	Average consumer prices (Index, 2000=100, annual percent change) for each year from 1980 to 2008. Source: IMF World Economic Outlook Database.
Law	
<i>withholding tax rate</i>	Withholding tax rates on cross-border interest payments for each year from 1998 to 2008. Source: Zentrum für Europäische Wirtschaftsforschung (ZEW).
<i>corporate tax rate</i>	Tax rate for the basic central government statutory (flat or top marginal) corporate income tax (including surtax if applicable) for each year from 1981 to 2008 Source: OECD tax database: Taxation of corporate and capital income Table II.1 and KPMG Corporate and Indirect Tax Rate Survey.
<i>creditor rights index</i>	An index aggregating creditor rights, following La Porta et al. (1998). The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights) and is constructed as of January for each year from 1978 to 2003. Source: Djankov et al. (2007).
<i>legal origin</i>	Identifies the legal origin of each jurisdiction. Four legal origins are considered: (1) English, (2) French, (3) German, (4) Scandinavian. Source: Zweigert and Kötz (1998).

table continues on the next page

contract enforcement Number of days to resolve a payment dispute through courts. The data are based on the methodology in Djankov et al. (2003), but the variable contains the (logarithmised) number of calendar days to enforce a contract of unpaid debt worth 50 percent of the country's GDP per capita. The variable is constructed as of January 2003. Source: Djankov et al. (2003).

EMU Equals 1 if the host country is a member of the Economic and Monetary Union and 0 otherwise for each year from 1980 to 2008.

In very many of the country pairs (9 out of 10), no cross-border debt security issue took place. The remaining observations largely cluster around 1 to 10 issues (see Figure 5.4), with an absolute maximum of 148 issues from German multinational firms hosted in the Netherlands in 1996 (see Table 5.2).

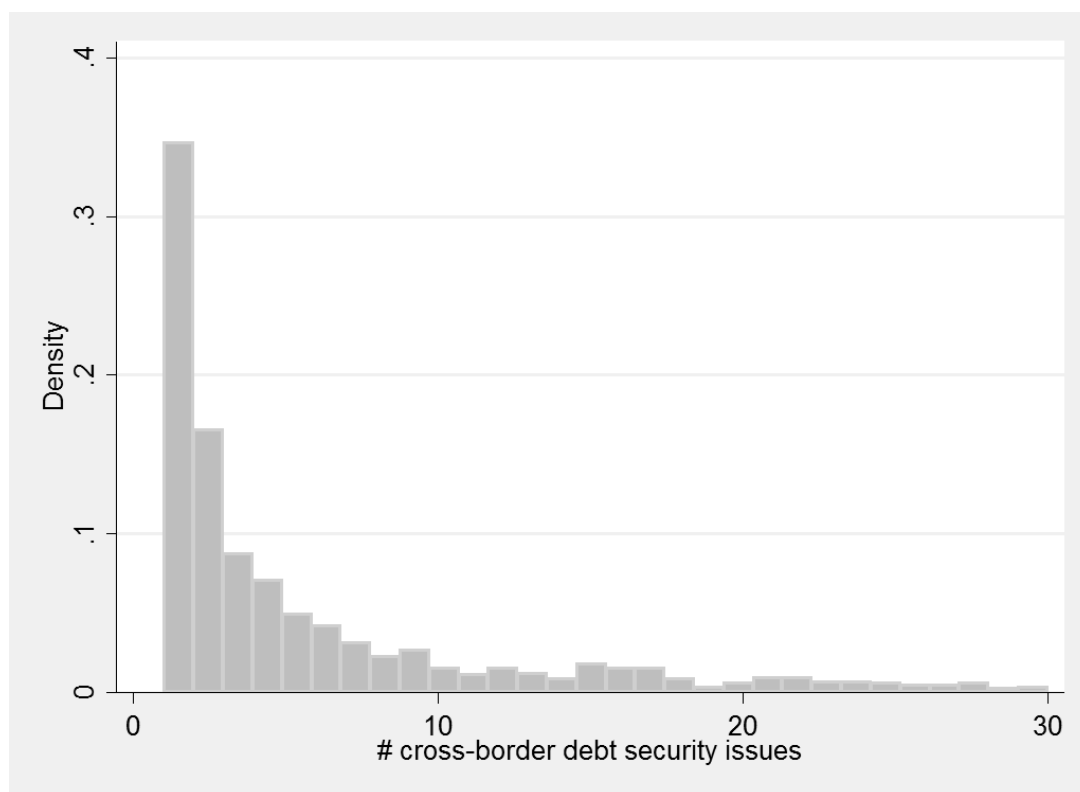


Figure 5.4 Density of cross-border debt security issues in country pairs (values 1 to 30)

Table 5.2 Country pairs with most frequent cross-border debt security issues

Origin	Host nation	# cross-border issues	Year
Germany	Netherlands	148	1996
Germany	Ireland	130	2005
Germany	Netherlands	121	1995
Switzerland	United Kingdom	111	1994
Germany	Netherlands	109	1997

Interestingly, cross-border issue flows are often rather one-sided. 6,842 of the cross-border debt issues in our sample in a given country pair and year (say, from country A to country B in 1995) are not matched by a corresponding debt issue in the opposite direction (from country B to country A). They can be characterised as net inflows (to country B). This is a first hint that cross-border issues concentrate in certain host jurisdictions. In fact, 98 percent of net inflows are attracted by the Netherlands, Luxembourg, the United Kingdom and Ireland (listed from the most to the least important host jurisdiction). Figure 5.5 depicts the (gross) inflows and outflows for the European jurisdictions in our sample.

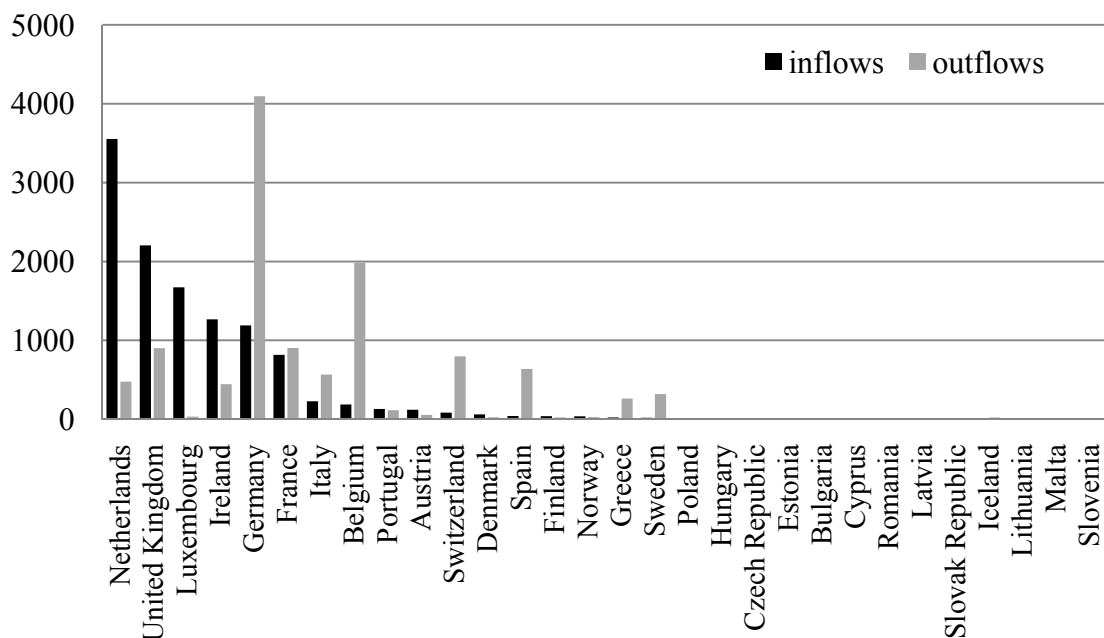


Figure 5.5 Total inflows and outflows of cross-border debt issues 1980 – 2008

This picture is confirmed by the findings reported in Table 5.3. The values in the matrix represent the debt securities issued in a given country (columns) as a percentage of all debt security issues by multinational firms located in a particular country of origin (rows).¹⁰³ The rows show the different magnetism of European jurisdictions. The diagonal shows that most of the debt issues are located in the country of origin, indicating that debt security issues exhibit a strong home bias. The two exceptions are Belgium and Greece, where the majority of the debt security issues is located abroad.

Table 5.3 Debt security issues in a particular country (columns) as a percentage of all debt securities issues by multinational firms in a country of origin (rows) 1980 – 2008

		country of origin															
		AUT	BEL	BGR	CHE	CYP	CZE	DEU	DNK	ESP	EST	FIN	FRA	GBR	GRC	HUN	
country where debt securities are issued	AUT	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>0
	BEL	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	>5
	BGR	0.00	0.00	1.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>10
	CHE	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>20
	CYP	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>40
	CZE	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	DEU	0.00	0.08	0.00	0.02	0.00	0.00	0.78	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	
	DNK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	ESP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	0.00	0.00	0.00	0.00	0.00	0.00	
	EST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	
	FIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00	
	FRA	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89	0.00	0.00	0.00	
	GBR	0.00	0.01	0.00	0.16	0.00	0.00	0.03	0.00	0.09	0.00	0.00	0.02	0.94	0.57	0.00	
	GRC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.00	
	HUN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97	
	IRL	0.00	0.01	0.00	0.01	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.01	0.01	0.00	0.00	
	ISL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	ITA	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	
	LIE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	LTU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LUX	0.01	0.15	0.00	0.02	0.00	0.05	0.04	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00		
LVA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
NLD	0.02	0.18	0.00	0.03	0.00	0.26	0.09	0.00	0.05	0.00	0.00	0.03	0.03	0.01	0.03		
NOR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
POL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
PRT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00		
ROM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
SVK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
SVN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
SWE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total #	1,734	2,958	21	3,386	29	42	19,317	1,720	3,506	17	2,208	8,610	15,758	460	39		

table continues on the next page

¹⁰³ I.e. the country where the group's ultimate parent is located.

	country of origin															
	IRL	ISL	ITA	LIE	LTU	LUX	LVA	NLD	NOR	POL	PRT	ROM	SVK	SVN	SWE	
country where debt securities are issued																>0
AUT	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>5
BEL	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>10
BGR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>20
CHE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	>40
CYP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
CZE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	
DEU	0.09	0.00	0.01	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.04	
DNK	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
ESP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
EST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
FIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
FRA	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	
GBR	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.01	0.05	0.01	0.00	0.00	0.00	0.01	
GRC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
HUN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
IRL	0.87	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	
ISL	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
ITA	0.00	0.00	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LIE	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LTU	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LUX	0.00	0.00	0.03	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
LVA	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
NLD	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.91	0.00	0.18	0.02	0.00	0.00	0.00	0.03	
NOR	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.01	
POL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.00	
PRT	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	
ROM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	
SVK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00	0.00	
SVN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	
SWE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	
Total#	3,318	320	4,247	19	6	3,257	2	5,516	1,806	56	1,397	8	18	3	2,680	

Table 5.4 provides summary statistics on the total number of debt securities, straight bonds and asset backed securities issued in a jurisdiction over the years 1980 through 2008. It also reports the number of debt security issues attracted from abroad (inflows) and the number of issues in foreign jurisdictions from multinational firms located in the respective country (outflows), each as a percentage of the total number of debt security issues in the country. Because they are scaled to total issues, inflows can per definition never exceed 100 percent but outflows can and do in some cases because they do not count in the denominator. For instance, the number of debt securities by Belgian firms through foreign subsidiaries is 1.75 times larger than the total number of issues in the domestic market. In Luxembourg, by contrast, outflows represent less than 1 percent although inflows from EU/EFTA member states amount to 34 percent of the domestic market. Except for Sweden, the Scandinavian debt markets are relatively closed with a small share of in- and outflows relative to the domestic market. In

absolute terms, Germany has by far the highest outflow of debt issues, while the Netherlands see the most inflows. Table 5.4 also contains our three principal explanatory variables *corporate tax rate*, *withholding tax rate* and *creditor rights*, each averaged over all years under consideration.

Table 5.4 Summary statistics of total number of debt security issues, (gross) inflows and outflows as a percentage of total number of debt issues, and average values of explanatory variables

Location of issuer	Total debt issues	Total straight bond issues	Total abs issues	Debt inflows %	Debt outflows %	Corporate tax rate Ø	Withholding tax rate Ø	Creditor rights Ø
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Austria	1,797	698	188	6.7	3.1	38.0	0.0	3.1
Belgium	1,136	470	123	16.5	174.6	40.3	11.0	2.0
Bulgaria	24	10	1	8.3	0.0	12.5	12.5	1.2
Cyprus	31	20	-	6.5	0.0	15.8	11.4	-
Czech Republic	36	19	4	22.2	38.9	32.7	10.9	3.0
Denmark	1,757	549	233	3.5	1.4	36.3	0.0	2.8
Estonia	25	9	3	32.0	0.0	22.5	14.2	-
Finland	2,225	625	292	1.8	1.0	38.5	0.0	2.1
France	8,549	3,613	908	9.6	10.6	40.1	10.9	0.0
Germany	16,352	5,127	3,646	7.3	25.0	51.8	0.0	3.0
Greece	214	123	6	10.3	122.9	39.4	27.5	1.0
Hungary	48	29	4	20.8	2.1	24.9	9.8	1.0
Iceland	297	172	8	0.0	7.7	25.7	-	-
Ireland	4,144	2,470	152	30.6	10.7	33.7	13.7	1.4

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Italy	3,904	1,965	271	5.8	14.5	42.5	17.5	2.0
Latvia	3	1	1	33.3	0.0	19.1	10.0	3.0
Liechtenstein	20	8	4	0.0	0.0	-	-	-
Lithuania	6	3	1	0.0	0.0	15.0	12.7	1.2
Luxembourg	4,955	2,029	487	33.7	0.7	31.7	0.0	-
Netherlands	8,744	3,880	821	40.6	5.5	36.7	0.0	3.0
Norway	1,815	645	217	2.0	1.5	37.0	0.0	2.0
Poland	54	20	4	22.2	24.1	36.4	10.9	1.0
Portugal	1,420	365	267	9.2	8.0	39.8	16.4	1.0
Romania	10	6	-	20.0	0.0	20.5	12.5	1.7
Slovak Republic	18	5	3	5.6	5.6	30.5	17.2	2.0
Slovenia	3	2	-	0.0	0.0	24.5	0.9	3.0
Spain	2,913	1,436	204	1.4	21.9	34.5	14.2	2.0
Sweden	2,380	839	348	0.8	13.4	38.6	0.0	1.7
Switzerland	2,653	742	557	3.2	30.1	27.8	6.7	1.0
United Kingdom	17,161	7,628	1,724	12.8	5.3	34.7	12.7	3.8

Table 5.5 reports the correlations between the number and the volume of debt securities, straight bonds and asset backed securities, for all country pairs. All of these variables exhibit strong correlations. In particular, a plausible alternative for our dependent variable – the volume (in billion US \$) of cross-border debt security issues – is highly correlated with the number of issues. Since we are interested in firms’ choice, and the unreported estimates of a Tobit gravity model based on the volume of debt security issues generate results rather similar to the conditional NB panel model, we restrict our analysis to count data estimates only.

Table 5.6 contains a correlation matrix of cross-border debt security issues in country pairs with the main explanatory and control variables. As expected, the withholding and corporate tax rates in the host country are negatively correlated with inflows. Vice versa, the number of cross-border debt issues is positively correlated with the corporate tax rate in the ultimate parent’s jurisdiction, which is in line with the profit shifting hypothesis. The latter correlation is not only highly significant but also large in magnitude. Moreover, the number of debt issues is positively correlated with the host country’s creditor rights index. The correlation matrix shows, however, that most explanatory variables are highly correlated with one another (very frequently at the 1-percent level). Therefore, one cannot identify the effect of market size, tax advantages and creditor rights on inflows of debt issues based on simple correlations, making multivariate and in particular panel data methods clearly preferable.

Table 5.5 Correlation matrix: Number and volume of cross-border issues in country pair for full sample and subsamples

	(1)	(2)	(3)	(4)	(5)	(6)
(1) <i>debt securities #</i>	1.00					
(2) <i>debt securities \$</i>	0.82	1.00				
(3) <i>straight bond issues #</i>	0.88	0.71	1.00			
(4) <i>straight bond issues \$</i>	0.77	0.78	0.87	1.00		
(5) <i>asset backed sec. #</i>	0.64	0.54	0.27	0.21	1.00	
(6) <i>asset backed sec. \$</i>	0.58	0.60	0.24	0.23	0.88	1.00

Table 5.6 Correlation matrix: Cross-border issues in country pairs (inflows to host country from country of origin) and explanatory variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) <i>debt securities # inflows</i>	1.00														
(2) <i>distance</i>	-0.07	1.00													
(3) <i>contiguous</i>	0.06	-0.49	1.00												
(4) <i>common language</i>	0.04	-0.45	0.65	1.00											
(5) <i>exports / imports</i>	0.23	-0.39	0.48	0.22	1.00										
(6) <i>EMU membership</i>	0.04	-0.02	0.15	0.13	0.16	1.00									
(7) <i>international bond market</i>	0.17	-0.04	-0.02	0.00	0.44	-0.01	1.00								
(8) <i>government bond yield</i>	-0.07	0.06	-0.06	-0.12	-0.20	-0.26	-0.25	1.00							
(9) <i>inflation rate</i>	0.03	0.11	-0.11	-0.12	-0.19	0.27	-0.21	0.28	1.00						
(10) <i>corporate tax host</i>	-0.07	-0.11	0.20	0.10	0.30	0.06	0.27	0.09	-0.37	1.00					
(11) <i>withholding tax host</i>	-0.15	0.14	-0.03	-0.06	-0.17	-0.13	-0.29	0.32	0.13	-0.10	1.00				
(12) <i>corporate tax origin</i>	0.21	-0.02	0.17	0.00	0.29	0.03	-0.25	0.21	0.09	0.06	0.27	1.00			
(13) <i>legal origin</i>	-0.19	-0.12	0.26	0.14	0.10	0.08	-0.02	-0.12	-0.14	0.35	-0.49	-0.16	1.00		
(14) <i>creditor rights index</i>	0.10	0.01	-0.25	-0.11	0.05	-0.42	0.36	0.10	-0.21	0.18	-0.21	-0.14	-0.14	1.00	
(15) <i>contract enforcement</i>	-0.10	0.17	-0.01	-0.07	-0.09	-0.22	0.04	0.22	0.05	-0.19	0.49	0.01	-0.11	0.05	1.00

5.4. Results

5.4.1. Gravity model

5.4.1.1. Debt securities

In Table 5.7 we present the results of the gravity model estimations. They originate from the baseline model set out in section 5.3.1. In what follows, we report incidence rate ratios as they can conveniently be interpreted as multiplicative effect or semi-elasticity. This implies that all estimates below one have to be interpreted as a negative effect, while estimates greater than one reveal a positive relationship. We focus on the fixed country-pair effects estimator, because it deals with omitted variables more adequately than the simple pooled model. Conducting a Hausman test leads us to dismiss the random effects model as being inconsistent for the overall sample and the subsamples (analysed in subsection 5.4.1.2 below).

As regards the classic gravity variables, we find throughout all specifications a negative effect for *distance* (between the capitals of the host country and the country of origin). 1,000 kilometers of additional distance reduce cross-border issues by 40 – 55 percent, but the effect does not come out significant in our preferred fixed-effects specification. A common geographic border also fails to be statistically significant. Unlike in the international trade literature, we do not find support for our conjecture that geographic proximity – as a proxy for transaction cost – explains where firms locate debt issues. Even more surprisingly, a common official language also does not stimulate inflows, which suggests that English as the *lingua franca* of international finance overcomes any language barriers. Even though the *EMU membership* and *bond market size* variable show the expected sign, these variables are not significant as well. As regards the two measures of country specific risk, we find somewhat mixed results, with lower *government bond yields* and higher *inflation* increasing the attractiveness of the host state. The former result, indicating that shaky public finances discourage corporate debt issues is weakly significant, while the latter is not.

Considering legal factors driving the choice of issuer location in multinational firms, we hypothesised that a lower *withholding tax rate* would increase inflows of debt issues to a jurisdiction. We find impressive support for this prediction. Our *withholding tax rate* variable is strongly significant for the conditional NB estimates (and unreported Poisson as well as Tobit estimates) and shows the expected sign, with a 1 percentage point increase in the withholding tax rate reducing cross-border debt issues by 2.6 percent. With regard to corporate taxes, our results generally confirm neither the tax shield nor the profit shifting hypothesis, as the *corporate tax rate* variable comes out insignificant for the overall sample.

Regarding the legal factors we expect to influence issuers' choice, we find only *legal origin* to have a significant and robust impact throughout all specifications. In unreported estimations using three separate dummy variables, *French*, *German* and *Scandinavian* relative to *English legal origin* all show an incidence rate ratio below 1, which is significant at the 1-percent level. It might be that there is a drift towards better creditor protection under the common law. However, we do not have much confidence in this conclusion: There are only three jurisdictions of English legal origin in our sample. These are also the countries with English as an official language, which could explain their attractiveness; or the *legal origin* variable may just have randomly selected two countries with very large inflows (the UK and Ireland). The effect of *contract enforcement days* is as one would expect: The more efficient the court system (as measured by the time to resolve a dispute), the more debt issues a jurisdiction attracts. This effect is, however, only weakly significant (at the 10-percent level) for the preferred fixed effects model. Our third variable of interest is *creditor rights*. In none of the panel models we find a significant impact of creditor rights on multinational firms' choice where to issue debt securities. Generally speaking, the creditor rights index has been a mixed success in empirical research. It failed to yield significant results as soon as *legal origin* was included even in La Porta et al. (1997), the paper that started the law and finance movement and first introduced the creditor rights index.¹⁰⁴ At the same time, there are too many potential legal or economic factors behind the *legal origin* variable to draw reliable

¹⁰⁴ See also the other references in subsection 5.2.3. above.

conclusions. In sum, our analysis lends only very weak support to the hypothesis that differences in creditor protection rules generally explain multinational firms' choices where to issue debt securities. The relevant factor for the location choice is taxes.

Table 5.7 Negative binomial gravity model⁽¹⁾

	pooled		panel	
	(1)	(2)	(3)	
<i>distance</i>	0.549 *** (0.097)	0.601 (0.218)	0.450 *** (0.072)	
<i>contiguous</i>	0.975 (0.287)	1.801 (1.328)	2.091 (0.608)	
<i>language</i>	1.797 (0.751)	0.889 (0.718)	0.921 (0.273)	
<i>imports / exports</i>	1.110 *** (0.013)	1.007 (0.379)	1.008 (0.004)	
<i>EMU</i>	1.453 (0.218)	1.118 (0.203)	1.329 * (0.176)	
<i>bond market size * 10⁻³</i>	0.994 (0.234)	0.837 (0.150)	0.895 (0.101)	
<i>government yield</i>	1.027 (0.113)	0.845 * (0.075)	0.863 * (0.064)	
<i>inflation</i>	0.841 *** (0.056)	1.073 (0.057)	0.994 (0.045)	
<i>corporate tax host</i>	0.997 (0.020)	1.009 (0.010)	1.021 * (0.009)	
<i>withholding tax host</i>	0.941 *** (0.015)	0.974 ** (0.012)	0.971 ** (0.007)	
<i>legal origin</i>	0.224 *** (0.042)	0.495 *** (0.072)	0.373 *** (0.040)	
<i>creditor rights</i>	1.202 * (0.124)	0.956 (0.137)	0.970 (0.067)	
<i>contract enforcement</i>	0.751 ** (0.092)	0.820 * (0.148)	0.779 (0.076)	
Pair effects	-	FE	RE	
Hausman	-	-	inconsistent	
Standard errors	robust	bootstrap	bootstrap	
Observations	5652	1115	5652	
Groups	-	120	725	
Log-likelihood	-3007.15	-1593.71	-2376.25	

⁽¹⁾ Due to the pairwise exclusion of cases, the sample reduces to the period 1998–2007.

5.4.1.2. Subsamples: Straight bonds and asset backed securities

To ensure that we are not missing important effects that are specific to certain types of debt securities, we analyse two subsamples consisting of only straight bonds and of only asset backed securities. Beside a general concern for robustness, we expect these two subsamples to differ regarding the importance of safeguards on behalf of creditors: Straight bonds typically have longer maturities so that creditors should be particularly concerned about protecting themselves against opportunism. By contrast, asset backed securities are typically ‘bankruptcy remote’: The entitlements of securityholders and the special purpose entity holding the assets are structured so as to prevent the entity from becoming insolvent (Standard & Poor’s 2008). Creditor protection should therefore play a more pronounced role in the straight bond subsample.

In general, our findings appear to be quite robust in the straight bonds subsample, with *withholding tax rates* and *legal origin* showing the same sign and high statistical significance as in the larger debt securities sample. Furthermore, within the straight bonds sample we find that multinational corporate groups locate the bond issues preferably in jurisdictions with low *government bond yields*, which can be interpreted as aversion to country-specific risk. As in the baseline sample, we find *inflation* to attract cross-border issues of straight bonds. High *inflation* may point to a greater exchange rate risk, leading firms to finance the subsidiary’s operations in local currency. With regard to the asset backed securities subsample, the effect of *government bond yields* and *inflation* turns the other way. Country-specific risk may affect going concern firm value more than the value of individual assets, which could render asset based financing relatively less expensive than debt backed by the firm’s business operation. The opposite signs of *government bond yield* and *inflation* in the two subsamples might explain why the variables do not turn out significant in the larger sample. Surprisingly, in the asset backed securities subsample the withholding tax effect disappears in our preferred fixed-effects specification, which is hard to explain. The host country *corporate tax rate* remains insignificant.

Table 5.8 Negative binomial gravity model: Subsamples of straight bonds and asset backed securities

	Straight bonds		
	pooled	panel	
	(1)	(2)	(3)
<i>distance</i>	0.593 *** (0.103)	0.589 (0.216)	0.408 (0.148)
<i>contiguous</i>	0.941 (0.283)	1.085 (0.759)	1.382 (0.679)
<i>language</i>	1.415 (0.551)	0.774 (0.555)	0.766 (0.401)
<i>imports / exports</i>	1.101 *** (0.012)	1.012 (0.008)	1.014 * (0.008)
<i>EMU</i>	1.339 (0.382)	1.280 (0.237)	1.596 ** (0.315)
<i>bond market size * 10⁻³</i>	1.347 (0.324)	0.925 (0.237)	1.047 (0.181)
<i>government yield</i>	0.813 * (0.057)	0.603 *** (0.060)	0.656 *** (0.061)
<i>inflation</i>	0.859 ** (0.057)	1.170 ** (0.079)	1.061 (0.076)
<i>corporate tax host</i>	0.957 (0.025)	0.994 (0.015)	1.006 (0.011)
<i>withholding tax host</i>	0.951 *** (0.018)	0.966 *** (0.012)	0.964 *** (0.011)
<i>legal origin</i>	0.275 *** (0.058)	0.593 ** (0.126)	0.402 *** (0.082)
<i>creditor rights</i>	1.216 * (0.129)	1.002 (0.127)	1.025 (0.117)
<i>contract enforcement</i>	0.756 ** (0.104)	0.923 (0.201)	0.847 (0.173)
Pair effects	-	FE	RE
Hausman	-	-	-
Standard errors	robust	bootstrap	bootstrap
Observations	5652	915	5652
Groups	-	98	725
Log-likelihood	-2160.34	-1108.85	-1736.15

table continues on the next page

	Asset backed securities		
	pooled	panel	
	(4)	(5)	(6)
<i>distance</i>	0.454 *** (0.084)	0.525 (1.172)	0.404 *** (0.113)
<i>contiguous</i>	0.709 (0.293)	1.555 (7.128)	3.014 ** (1.575)
<i>language</i>	1.429 (0.580)	0.394 (2.816)	1.135 (0.866)
<i>imports / exports</i>	1.077 (0.011)	0.989 (0.025)	1.006 (0.027)
<i>EMU</i>	1.341 (0.447)	0.638 (0.307)	1.226 (0.435)
<i>bond market size * 10⁻³</i>	0.099 *** (0.041)	0.425 (0.275)	0.124 ** (0.132)
<i>government yield</i>	2.036 *** (0.249)	7.027 *** (2.027)	2.703 *** (0.536)
<i>inflation</i>	0.950 (0.176)	0.695 ** (0.119)	0.598 *** (0.105)
<i>corporate tax host</i>	1.182 *** (0.045)	1.057 (0.048)	1.136 *** (0.037)
<i>withholding tax host</i>	0.910 *** (0.016)	1.038 (0.053)	0.945 * (0.030)
<i>legal origin</i>	0.083 *** (0.042)	1.536 (2.958)	0.142 *** (0.081)
<i>creditor rights</i>	1.051 (0.118)	0.966 (0.716)	1.259 (0.222)
<i>contract enforcement</i>	0.995 (0.159)	1.117 (1.810)	0.716 (0.186)
Pair effects	-	FE	RE
Hausman	-	-	inconsistent
Standard errors	robust	bootstrap	bootstrap
Observations	5652	540	5652
Groups	-	54	725
Log-likelihood	-631.79	-245.76	-553.18

5.4.1.3. Push and pull factors

By construction, our sample contains only cross-border debt issues. This enables us to analyse what multinational firms look for when they pick a foreign jurisdiction, once they have decided to go abroad. However, since our unit of observation are cross-border debt security issues in country pairs, we also know the location of the firm's ultimate parent. Obviously, the number of cross-border debt security issues in a given country pair should not only depend on the conditions in the host country but also of those in the country of origin. The latter can be thought of as 'pushing' firms abroad whereas host country variables determine which of the available jurisdictions 'pulls' most issues. For this reason, we include the variables of interest from country of origin into our analysis.

Including 'push' factors should help to specify the model better and thus to estimate the coefficients more precisely. As to host country 'pull' variables, the estimates confirm *withholding tax rate* and *legal origin* as relevant predictors for a host country's attractiveness. The extended model lends more empirical support to *contract enforcement* than our original specification. In addition, *EMU* membership now turns out highly significant for debt securities in general and straight bonds in particular. For the straight bond sample, we find membership in the EMU to more than double the debt issues being attracted. Finally, we now find a significant positive effect of *corporate tax rate* in the host country. This result conforms to the tax shield hypothesis. It is mainly driven by asset backed securities, which is also consistent with the tax shield hypothesis: Securitisation amounts to refinancing the assets through debt securities. The assets' cashflows no longer generate profits for the subsidiary but instead have to be used to pay the securityholders.¹⁰⁵ Asset backed securities are another way of establishing a tax shield.

Looking at the country of origin, we find *corporate tax rate* to be significantly and positively related to cross-border issues. The effect is even larger than that of the host country *corporate tax rate*. High corporate taxes in the country of origin push firms

¹⁰⁵ See Han et al. (2010) for a model of corporate tax incentives to securitise bank loans.

to issue debt securities abroad. In and of itself, this finding is consistent with the profit shifting hypothesis. At first blush, however, it is hard to reconcile with high corporate taxes being a 'pull' factor. It seems that firms decide to go abroad to escape high corporate taxes, but then again seek high-tax jurisdictions. The former result conforms to the profit shifting hypothesis while the latter is predicted by the tax shield hypothesis. Yet the two hypotheses may well coexist. Profit shifting and erecting a tax shield can be motives for different multinational firms and different subsets of cross-border debt security issues.

Table 5.9 Negative binomial gravity model: Host and origin country effects

	pooled		panel	
	all debt securities	all debt securities	straight bonds	asset backed securities
	(1)	(2)	(3)	(4)
<i>distance</i>	0.220 *** (0.038)	0.408 *** (0.073)	0.346 (0.075)	0.628 (0.249)
<i>contiguous</i>	2.376 ** (0.916)	2.060 ** (0.634)	1.366 (0.491)	3.207 ** (1.849)
<i>language</i>	1.227 (0.464)	0.886 (0.281)	0.790 (0.290)	0.489 (0.305)
<i>imports / exports</i>	0.991 (0.008)	1.003 (0.005)	1.000 (0.006)	1.024 (0.016)
host country (subsidiary)				
<i>EMU</i>	2.584 *** (0.560)	1.581 *** (0.268)	2.024 *** (0.446)	1.275 (0.391)
<i>bond market size * 10⁻³</i>	3.228 *** (0.748)	1.105 (0.154)	1.314 * (0.208)	0.407 * (0.188)
<i>government yield</i>	0.970 (0.108)	0.865 (0.102)	0.792 (0.117)	1.896 *** (0.370)
<i>inflation</i>	0.866 ** (0.054)	1.032 * (0.049)	1.051 (0.061)	0.757 ** (0.095)
<i>corporate tax</i>	0.996 (0.017)	1.026 ** (0.011)	1.016 (0.013)	1.073 *** (0.027)
<i>withholding tax</i>	0.932 *** (0.013)	0.969 *** (0.008)	0.969 *** (0.010)	0.929 *** (0.024)
<i>legal origin</i>	0.220 *** (0.032)	0.344 *** (0.040)	0.387 *** (0.054)	0.149 *** (0.049)
<i>creditor rights</i>	1.155 * (0.095)	0.979 (0.078)	1.060 (0.108)	1.297 (0.213)
<i>contract enforcement</i>	0.896 (0.100)	0.808 ** (0.083)	0.893 (0.112)	0.720 (0.178)

table continues on the next page

	(1)	(2)	(3)	(4)
country of origin (corporate parent)				
<i>EMU</i>	0.580 ** (0.146)	1.130 (0.207)	1.239 (0.302)	1.239 (0.375)
<i>bond market size * 10⁻³</i>	1.745 *** (0.302)	1.031 (0.124)	1.302 ** (0.183)	0.177 *** (0.084)
<i>government yield</i>	1.329 (0.247)	0.866 (0.110)	0.731 ** (0.115)	1.626 * (0.417)
<i>inflation</i>	1.076 (0.143)	0.992 (0.066)	0.974 (0.078)	0.669 ** (0.116)
<i>corporate tax</i>	1.114 *** (0.018)	1.052 ** (0.012)	1.029 ** (0.014)	1.079 *** (0.027)
<i>withholding tax</i>	1.017 (0.012)	1.006 (0.446)	1.012 (0.010)	0.995 (0.023)
<i>legal origin</i>	0.646 *** (0.088)	0.932 (0.125)	1.083 (0.175)	0.525 ** (0.170)
<i>creditor rights</i>	0.763 *** (0.075)	1.033 (0.082)	1.116 (0.108)	1.100 (0.194)
<i>contract enforcement</i>	0.875 (0.293)	1.031 (0.343)	0.915 (0.379)	0.807 (0.591)
Pair effects	-	RE	RE	RE
Standard errors	robust	-	-	-
Observations	2660	2660	2660	2660
Groups	-	360	360	360
Log-likelihood	-2299.22	-1963.40	-1444.49	-421.87

5.4.2. An alternative ordered probit model

As an additional robustness check, we group country pairs in four groups depending on the number of cross-border debt security issues: The first contains the country pairs with no cross-border issues, the second to fourth those with a moderate (1–10), large (11–50) and very large number (51–150) of cross-border debt issues. The idea is that there could be distinct data generating processes. For instance, some jurisdictions may have ceased to provide any infrastructure for debt securities at all; others have the required legal and financial institutions but take no interest in luring debt issues from abroad; a few countries are pursuing a conscious competitive strategy of promoting its legal and financial services industry. To see whether our results hold up against such a story, we estimate an ordered probit model based on the four groups mentioned above. Our results on tax and creditor protection variables are largely confirmed. While a lower withholding tax attracts cross-border debt security issues generally and with respect to straight bonds in particular, asset backed securities are affected by corporate taxes. The legal origin of a particular country affects all samples alike.

Table 5.10 Ordered probit model

	pooled		panel	
	all debt securities	all debt securities	straight bonds	asset backed securities
	(1)	(2)	(3)	(4)
<i>distance</i>	-0.413 *** (0.052)	-0.564 *** (0.115)	-0.820 *** (0.135)	-0.371 * (0.197)
<i>contiguous</i>	0.025 * (0.089)	0.957 *** (0.193)	0.356 * (0.200)	1.000 ** (0.427)
<i>language</i>	0.296 *** (0.094)	0.974 *** (0.212)	0.752 *** (0.249)	0.017 (0.432)
<i>imports / exports</i>	0.038 *** (0.003)	0.027 *** (0.004)	0.037 *** (0.004)	0.019 ** (0.007)
<i>EMU</i>	0.059 (0.078)	0.165 (0.121)	0.431 *** (0.144)	-0.142 (0.172)
<i>bond market size * 10⁻³</i>	-0.200 *** (0.073)	-0.045 (0.099)	-0.043 (0.109)	-1.059 *** (0.224)
<i>government yield</i>	0.053 (0.035)	-0.044 (0.063)	-0.192 ** (0.076)	0.445 *** (0.106)
<i>inflation</i>	-0.085 *** (0.026)	-0.030 (0.043)	-0.008 (0.051)	-0.183 ** (0.078)
<i>corporate tax host</i>	-0.006 (0.005)	0.020 ** (0.008)	0.001 (0.010)	0.061 *** (0.013)
<i>withholding tax host</i>	-0.018 *** (0.005)	-0.017 ** (0.007)	-0.026 *** (0.008)	-0.021 (0.013)
<i>legal origin</i>	-0.631 *** (0.053)	-0.720 *** (0.093)	-0.836 *** (0.102)	-0.986 *** (0.185)
<i>creditor rights</i>	0.063 ** (0.029)	0.053 (0.062)	-0.021 (0.065)	0.156 (0.109)
<i>contract enforcement</i>	-0.162 *** (0.040)	-0.119 (0.094)	-0.186 ** (0.092)	-0.306 ** (0.156)
Pair effects	-	RE	RE	RE
Standard errors	robust	-	-	-
Observations	5652	5652	5652	5652
Log-likelihood	-1493.82	-1111.87	-849.2	-372.77

5.5. Summary and conclusion

Regulatory competition between jurisdictions has become a central feature of the European legal landscape. As in the US, such competition occurs, for example, in the area of company law. But it surely is not confined to this field. In this article, we have been looking at issuer location and regulatory competition in the European Corporate Debt Market. To the best of our knowledge, we are the first to study the extent of competition for corporate debt issues in Europe empirically. We find that, in absolute terms, Germany has by far the highest outflow of debt issues, while the Netherlands, the UK, Luxemburg and Ireland see the most inflows (in that order). We use a panel gravity model to investigate the motives for choosing an issuer incorporated in another jurisdiction.

The data clearly support the prediction that inflows are influenced positively by a low withholding tax rate. A 1 percentage point increase in the withholding tax rate reduces cross-border debt issues by 2.6 percent. Corporate tax rates also play a role, but here the picture is less clear. Considering the perspective of both the host country and the country of origin, we find some support for the hypothesis that firms use out-of-state issues as a tax shield by issuing more debt locally in high-tax jurisdictions ('tax shield hypothesis'). This effect shows up with respect to asset backed securities. There is also some evidence for the hypothesis that multinational firms from high-tax jurisdictions issue debt securities abroad to create profit shifting opportunities ('profit shifting hypothesis'). Further, in none of the panel models do we find a significant impact of creditor rights in bankruptcy on multinational firms' choice where to issue debt securities. The only weakly significant effect that we observe is that of the efficiency of a host country's court system as measured by the time it takes to resolve a dispute.

The implications of these findings appear to be straightforward: Countries that wish to attract bond issues should lower or abolish withholding taxes. From a European regulatory perspective, this result provides empirical evidence on an important field of tax competition. As tax law arbitrage is costly, our findings strengthen the case for

abolishing withholding taxes in Europe. A somewhat sobering result for European jurisdictions might be that even if they radically improve on their legal rules as applicable to debt securities, especially with respect to creditor protection, they should not anticipate to capture a larger market share in the European public debt market. ‘Success’ in European regulatory competition crucially depends on identifying the drivers of firms’ choices. Whereas in company law, incorporation speed and capital requirements play the decisive role (Becht et al. 2008), issuer choice in the European corporate bond market is driven by (withholding) tax rates – not creditor rights.

Chapter 6

Choice of Law in Debt Securities: A Case Study of French, German and Italian Issues 1998 – 2008

6. Choice of Law in Debt Securities: A Case Study of French, German and Italian Issues 1998 – 2008

6.1. Introduction

That firms adopt a law of their liking has been documented for a broad range of settings. The choice of a particular law is not a random event and therefore often referred to as ‘regulatory arbitrage’ or ‘legal arbitrage’. Fleischer (2010) defines this activity as a ‘planning technique’, which allows the management to “take advantage of a gap between the economics of a deal and its regulatory treatment, restructuring the deal to reduce or avoid regulatory costs without unduly altering the underlying economics of the deal.” The most prominent example of regulatory arbitrage is corporate law. For more than a century, US firms have been free to incorporate in any state, thereby effectively choosing the corporate law under which they are organised. In a similar vein, a large number of start-ups from Germany and other continental European countries decided to incorporate in a foreign jurisdiction, after the European Court of Justice (ECJ) in his landmark rulings *Centros* (1999), *Überseering* (2002) and *Inspire Art* (2003) held that the ‘real seat doctrine’ violated the freedom of establishment laid down in the TFEU.¹⁰⁶ Finally, when in October 2004 the European Company (Societas Europaea – SE) entered the scene, it offered existing European firms for the first time a choice between the law of their home state and the law of the supranational SE.

Regulatory arbitrage is, however, not confined to corporate law and the holders of equity, which can influence the management decisions by means of ‘exit and voice’ (Hirschman 1970).¹⁰⁷ In a more subtle way, debt holders may also facilitate such practices. Ball et al. (2010) found firms which chose to cross-list their shares on a US stock exchange to lower their offering bond yield by about 48 basis points. They

¹⁰⁶ See ECJ, Case C-212/97 *Centros Ltd. v Erhvervs- og Selskabsstyrelsen* [1999] ECR I-1459; Case C-208/00 *Überseering BV v Nordic Construction Company Baumanagement GmbH* [2002] ECR I-9919; Case C-167/01 *Kamer van Koophandel en Fabrieken voor Amsterdam v Inspire Art Ltd.* [2003] ECR I-10155.

¹⁰⁷ If the salary of the management depends on stock prices and regulatory arbitrage increase firm value, the stock market may provide another channel to incentivise the management to engage in regulatory arbitrage.

attribute the reduction in initial yield payments to ‘legal bonding’ with respect to discloser requirements. Debt holders thus indirectly force corporate managers to engage in regulatory arbitrage, by punishing those firms with higher financing costs failing to commit themselves to a more stringent disclosure regime. Similarly, Eidenmüller et al. (2010b) found European firms to issue their debt securities by foreign subsidiaries, as a venue abroad can save investors withholding tax payments debt holders otherwise pass on to the debt issuer by requesting higher interest rates.

While it is well established that firms do in fact engage in regulatory arbitrage, there is little knowledge about the *intensity* with which this corporate decision-making process is carried out. It has been argued that managers adopt certain legal rules (e.g. securities regulations, corporate charters, bankruptcy laws or arbitration rules) as it may help them to save regulatory, financing or litigation costs (Easterbrook and Fischel 1991; Becht et al. 2008; Ball et al. 2010; Eidenmüller et al. 2009a; Eidenmüller et al. 2010b). It is doubtful though, that the management of a firm engages in regulatory arbitrage on a daily basis. After all, the decision-making process within a firm is preceded by search costs for a superior regulation, which can be substantial and may rarely materialise. Furthermore, due to the complexity of many business activities, the actions of managers of large companies are often routine (Hart 1995). As a result, firms’ choice of law often perpetuates itself and becomes subject to what is known as *path dependence*.

Historically, the concept of path dependence has been developed to show how inefficient technologies persist despite the emergence of more efficient ones (David 1985; Arthur 1989). The reasons for a so-called technological *lock-in* range from high switching costs, the uncertainty about other alternatives to the interrelatedness of a particular choice with other decisions. More recently, the concept of path dependence was also applied to the persistence of inefficient institutions (North 1990) and legal rules (Klausner 1995). Heine and Kerber (2002) draw on path dependence to explain the sluggishness of corporate charter competition in Europe. The following analysis is the first empirical study relating path dependence to the legal rules governing corporate debt.

Knowing whether the legal rules governing corporate debt securities are path dependent carries important policy implications. Potentially welfare-enhancing policies like the recent reform of the German Debenture Act (*Schuldverschreibungsgesetz*, SchVG) have no or only a very sluggish impact if path dependence in the choice of law is strong. Moreover, it should be mentioned that regardless of whether regulatory competition is a ‘race to the bottom’ or ‘race to the top’, path dependence slows any racing car down. In case the second presumption about regulatory competition is right, then path dependence is an impediment to a more efficient regulatory environment providing a *prima facie* case for harmonisation.

The analysis in this article proceeds in two steps: First, it seeks to identify the initial drivers of regulatory arbitrage in corporate debt issues. Unlike the macro analysis by Eidenmüller et al. (2010b), this article sets out to spot regulatory arbitrage on the micro level (debt security issues and firms). In a second step, it seeks to determine the degree to which regulatory arbitrage is path dependent. Section 6.2. starts by outlining the factors influencing the choice of law and path dependence from a theoretical perspective. Thereafter, the data and methodology are presented in section 6.3. Section 6.4. provides the empirical findings and section 6.5. concludes.

6.2. Choice of law and path dependence in corporate debt issues

If firms resile from issuing additional equity or eating up their financial reserves to finance future operations, they have to rely on external sources of finance. External financing in turn distinguishes between the issue of debt securities and taking out a bank loan.¹⁰⁸ Whether firms prefer the one over the other depends foremost on the costs of the alternative financing sources. Interest rates differentials are only one factor influencing the financing costs and hence a firm’s decision whether to tap the capital market or not. In a world with global and highly integrated capital markets, where firms are able to address banks and investors in multiple countries, interest

¹⁰⁸ Financial institutions face a similar choice with regard to their refinancing activities. They can increase the funds from depositors, obtain finance from other banks, or tap the capital market.

rate differentials may no longer play the most important role. By contrast, due to the globalisation of many business activities, firms encounter more and more possibilities to lower their financing costs by engaging in regulatory arbitrage.¹⁰⁹ While banks mostly dictate the terms and conditions of a loan, the precise design of a debt security depends on the regulatory environment the firm adopts. Some regulatory factors affecting a debt issue include the prospectus requirements and liabilities, corporate taxation, taxation of investors by means of withholding taxes, the bankruptcy regime and accounting practices, to name just a few.

That institutional and regulatory differences are highly relevant in corporate finance indicates the financial structure of European and US companies. Tapping the capital market has traditionally been less popular among European firms. In the year 2003, non-financial companies in the US have issued debt securities worth 22.6 percent of GDP as compared to only 7.2 percent in the Euro area (European Central Bank 2005). This difference can at least partly be traced back to dissimilarities in the banking regulation. The Glass-Steagall Act in the US has traditionally prohibited corporate finance via credit and the simultaneous holding of securities in the very same company. For this reason, corporate finance in the US has essentially been carried out on the capital market (Heine and Kerber 2002). In Germany universal banking system provides that banks can extend credit to a firm while investing in the same company, which allows financial institutions to gain control in the supervisory board. Such a tight relation helps banks to reduce agency costs and provides incentives for prolonged interactions between banks and the industry.

The issue of a corporate debt security touches on various areas of the law. First of all, a debt security constitutes a contractual relationship between the issuer and investors, which is governed by the *contract law* of a jurisdiction. Second, in case the firm undergoes financial distress, the contract might also specify an *international jurisdiction of courts*, which is independent from the applicable contract law and specifies the forum where proceedings may take place. Third, if the security is offered to the public or listed at the stock market, a prospectus must be published and

¹⁰⁹ Dischinger et al. (2010) provide evidence for regulatory arbitrage by means of ‘debt shifting’.

other requirements fulfilled under the *securities regulation* of a particular jurisdiction. Finally, different laws – in particular *tax laws* and *bankruptcy laws* – dependent on the location of the issuing entity may actively be chosen by the corporate parent. The analysis in this paper focuses on two choice of law stages in a debt security issue. Figure 6.1 provides an overview:

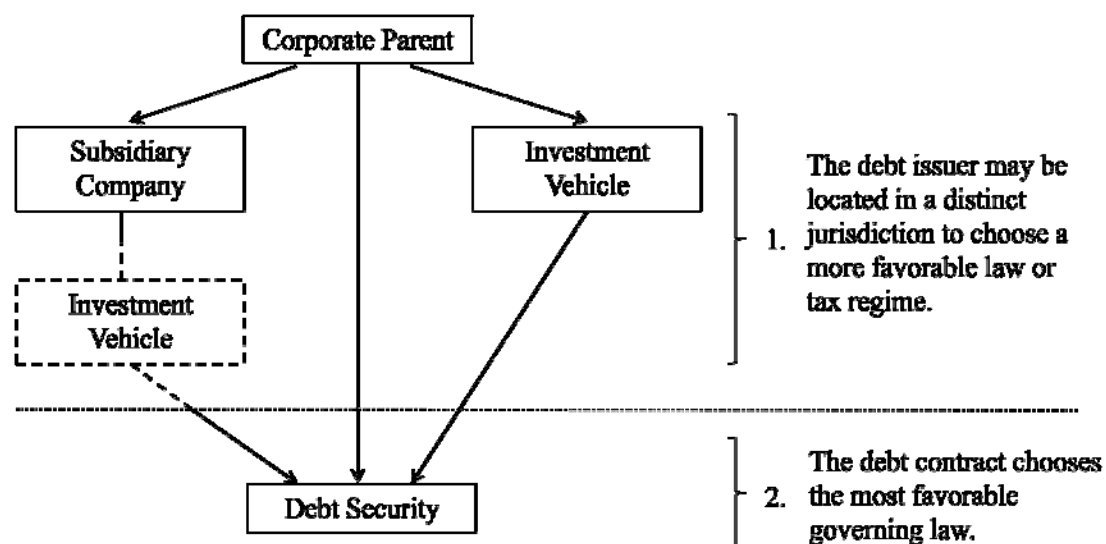


Figure 6.1 Choice of law stages in a corporate debt issue

First, the firm has to decide upon the **jurisdiction** and **corporate entity** issuing the debt security. The issuer can either be the ultimate parent, an operating subsidiary, or a special purpose entity, which is referred to as an ‘investment vehicle.’ If the issuer is a subsidiary or investment vehicle, it can either be located in the same jurisdiction as the ultimate parent or abroad. The decision to use a subsidiary or investment vehicle and where to locate it can be a means of choosing an advantageous tax or bankruptcy law.¹¹⁰ At the same time, there may be reasons for choosing a particular issuer that are unrelated to the applicable law. For example, the firm may want to tap a local capital market or the corporate group financing policies may allow an operating subsidiary to fund its own business activities by issuing debt.

¹¹⁰ See the study of Eidenmüller et al. (2010b) for a detailed theoretical analysis of regulatory arbitrage regarding tax and bankruptcy law.

At the second stage, after the firm has selected the issuer and jurisdiction, the firm chooses a **contract law** to govern the debt security. The debenture may stipulate the domestic law of the issuer jurisdiction, but it can also be the law of any other jurisdiction. It should be mentioned that there is a variety of possible non-legal motives for choosing a (different) contract law, such as the intention to access a particular debt market to issue debt denominated in a foreign currency (e.g. to finance foreign investments). The currency of the debt issue may play a decisive role for the choice of the applicable contract law as for instance the German central bank had required these two decisions to be consistent until the year 1992 (Gruson and Harrer 1996). Of course, the choice of the applicable contract law can also be driven by the substance of the law as well as the quality of legal services and the courts.

When the management has made a choice regarding the applicable law, it may institute this decision in corporate guidelines or implicit procedural rules. Making an informed decision on every occasion a debt security is issued may not pay off, as setting up a new investment vehicle involves the costs of (re-)incorporation, transferring assets and legal advice. In case the debt issue is small, the costs of regulatory arbitrage quickly become exorbitant. Moreover, certain advantages of regulatory arbitrage – as for instance in tax law – only materialise if an operating corporate subsidiary has been set up. The firm will stick to this corporate entity in subsequent debt issues if switching costs are prohibitively high. With respect to the applicable contract law, firms may incur drafting costs as well as the costs of identifying advantageous regulations. Although this type of costs can be considerable as well, they are probably lower as the cost of setting up a new issuer. Drafting costs are particularly low in markets, where financial contracts have undergone a high degree of standardization (e.g. the Eurobond market and the commercial paper market). Some firms may therefore decide upon the contract law each time a debt contract is set up. Others just stick to their initial choices.

Proposition 1: **Path dependence with respect to the issuer location is more intense than path dependence regarding the applicable contract law.**

Whether legal arbitrage perpetuates itself over time or vanishes at some point is *a priori* not clear. It is evident though, that firms may forgo cost saving opportunities if they are not looking for more efficient regulations. Put differently, the probability increases over time that regulations have changed and the company ignores the benefits from engaging in regulatory arbitrage. The management is therefore more likely to revise its initial choice of law as the odds of missing a cost saving regulation increase over time.

Proposition 2: Path dependence fades away as the likelihood of regulatory change and cost saving potentials increase over time.

6.3. Methodology and data

6.3.1. Methodology

The first objective of the empirical analysis is to determine why firms opt out of the domestic legal framework and engage in regulatory arbitrage. Even though firms encounter a variety of options with regard to regulatory arbitrage (i.e. they may adopt one out of multiple contract laws available), the decision can be collapsed to a simple binary choice: The management either sticks to the domestic legal framework or adopts the law of a foreign jurisdiction. A natural estimator to deal with a binary dependent variable is the standard probit model, which can be specified as

$$y_i = \mathbf{x}_i\beta_i + u_i \quad (6.1)$$

where $i = 1, \dots, N$ and \mathbf{x}_i being a vector of explanatory variables influencing firms choice of law. u_i is the usual disturbance term and y_i is the unobserved involvement in legal arbitrage by the management. What is observed then is the realisation of the law the management has agreed upon having followed the decision rule

$$y_i = \begin{cases} 1 & \text{choose a foreign law if legal arbitrage is beneficial} \\ 0 & \text{stick to domestic law if legal arbitrage is too costly} \end{cases} \quad (6.2)$$

It is worth mentioning that the absence of regulatory arbitrage can be interpreted in two ways. Either the management made an informed decision to abstain from regulatory arbitrage because the domestic law was identified as efficient or the management came to the conclusion that regulatory arbitrage *per se* is too costly, which renders it worthless to check for more efficient regulations.¹¹¹

In a second step, the empirical analysis investigates whether and to which degree firms' exposure to regulatory arbitrage depends on previous engagement in such practices. To identify this effect, a dynamic panel data model has to be estimated. Panel data methods not only allow for the incorporation of previous decisions by the management, but also to condition on the unobserved heterogeneity that is likely to be present in the data. Unobserved heterogeneity could, for instance, reflect the ability of a particular lead manager or legal advisor to spot regulatory arbitrage opportunities for the firm. A dynamic panel data model for legal arbitrage can be written as

$$y_{it} = y_{i,t-1} \gamma_i + x_{it} \beta_i + \alpha_i + u_{it} \quad (6.3)$$

where $t = 1, \dots, T$, the coefficient γ_i is a dynamic effect and α_i are the unobserved firm effects. It should be mentioned, however, that γ_i is not a causal effect but constitutes the degree of adjustment of the dynamics. Furthermore, the estimates of γ_i and β_i are calculated using the adaptive Gauss-Hermite quadrature following the method of Naylor and Smith (1982).

¹¹¹ The empirical analysis relies on the simplifying assumption that firms only engage in regulatory arbitrage if they adopt a foreign law. According to a different definition of regulatory arbitrage, some firms choosing the domestic law might not only be subject to a home bias but find the domestic law most attractive being the law of their choice. The data at hand does not reveal whether the domestic law was actively chosen or not. Nevertheless, the adoption of the domestic law may not constitute *regulatory arbitrage*, as any type of arbitrage requires per definition the exploitation of differences among two jurisdictions or market places.

6.3.2. Data

The data on debt security issues was extracted from the Thomson Financial ‘SDC Platinum’ database. The database provides detailed descriptive information on the location of the debt issuer and the corporate parent. Furthermore, the governing law of the debt security, the size, maturity and coupon payment as well as the initial Standard & Poor’s rating, the market place that was targeted and the currency of the issue were obtained from the SDC Platinum (see Table 6.1 for a detailed description). To qualify for inclusion in the sample, debt securities had to have a corporate parent located in France, Germany or Italy, but the issuing entity could have been located anywhere in the world. The analysis consequently draws on 8,776 debt issues, 604 issuers and 106 corporate parents.

To control for scale or network effects, the data was merged with macroeconomic variables such as the size of the international bond market and total GDP. As a measure of country risk, the government bond yield as well as the inflation rate were considered. Finally, as the choice of law may be driven by regulatory arbitrage with respect to bankruptcy rules and tax laws, the data was merged with withholding tax rates, corporate tax rates and the creditor rights index. The creditor rights index was taken from Djankov et al. (2007) and aggregates the rights of creditors in a particular jurisdiction on a scale from 0 to 4 (with 4 indicating the highest degree of creditor protection). To capture the effect of regulatory arbitrage, all variables were specified as the gap between the jurisdiction of the corporate parent and the jurisdiction of the issuing entity (that is the value of the corporate parent’s jurisdiction minus the value of the issuer’s jurisdiction). For instance, the corporate tax gap measures the comparative tax advantage the corporate parent obtains from issuing the debt security in a foreign jurisdiction.

Finally, to investigate whether firms’ financing decisions are path dependent, the data on debt issues was aggregated on the firm level. To qualify for inclusion in the panel analysis, the corporate parent did not only have to be located within France, Germany or Italy, but also had to be part of the leading stock market indices CAC-

40, DAX-30 or MIB-30. This refinement was necessary as the data was merged with balance sheet information (debt-equity-ratio), which can be obtained from the AMADEUS and Hoppenstedt databases. The analysis was consequently reduced to 84 corporate parents. Finally, to investigate whether regulatory arbitrage is subject to path dependence, two new dependent variables were created: First, the percentage of debt issues of an issuer that is subject to a foreign contract law (in a given year) and second the percentage of debt securities of a corporate parent that was issued by foreign corporate entities (in a given year). As a robustness check, the two variables were weighted with the transaction volume of the respective debt issues.

Table 6.1 Variable descriptions

Variable	Description
Transaction	
<i>issuer location</i>	The nation where the corporate entity issuing the debt security is located (0 = equivalent to the location of the corporate parent, 1 = foreign).
<i>governing law</i>	The applicable governing law as specified in the debt contract (0 = equivalent to the location of the issuing entity, 1 = foreign).
<i>amount prospectus</i>	The total amount specified on the prospectus in million US dollar.
<i>Maturity</i>	The years to final maturity as specified in the debt security.
<i>S&Ps rating</i>	The initial Standard & Poor's rating.
<i>Coupon</i>	The coupon payment in percent.
<i>Marketplace</i>	The target market of the debt issue.
<i>Currency</i>	The currency under which the debt security is issued.
Firm	
<i>debt-equity-ratio</i>	The debt-equity-ratio of the firm using consolidated balance sheet data. Source: AMADEUS and Hoppenstedt.
Macro Economy	
<i>international bond market gap</i>	International debt securities by nationality of issuer (in billions of US dollars) for each year from 1998 to 2008. Source: BIS Quarterly Review Statistical Appendix Table 15B: International bonds and notes: Amounts outstanding all issuers.
<i>GDP gap</i>	Gross domestic product based on purchasing-power-parity (PPP) valuation of country GDP from 1998 to 2008. Source: World Economic Outlook.
Risk	
<i>government bond yield gap</i>	Average government bond yield to maturity (in percent per annum) for each year from 1998 to 2007. Source: IMF International Financial Statistics Yearbook.
<i>inflation gap</i>	Average consumer prices (Index, 2000=100, annual percent change) for each year from 1998 to 2008. Source: IMF World Economic Outlook Database.

table continues on the next page

Law

<i>withholding tax gap</i>	Withholding tax rates on cross-border interest payments for each year from 1998 to 2008. Source: Zentrum für Europäische Wirtschaftsforschung (ZEW).
<i>corporate tax gap</i>	Tax rate for the basic central government statutory (flat or top marginal) corporate income tax (including surtax if applicable) for each year from 1998 to 2008. Source: OECD tax database: Taxation of corporate and capital income Table II.1 and KPMG Corporate and Indirect Tax Rate Survey.
<i>creditor rights index gap</i>	An index aggregating creditor rights, following La Porta et al. (1998). The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights) and is constructed as of January for each year from 1998 to 2003. Source: Djankov et al. (2007).

6.4. Empirical findings

6.4.1. Descriptive statistics

The underlying economic structure of corporate debt securities in France, Germany and Italy appears to be largely identical (see Table 6.2). The average size of a debt issue in the overall sample is 212 million Euros, the maturity 6.4 years, the offering yield 4.9 percent and the Standard & Poor's rating AA. Italian deals are slightly larger and have a longer maturity, while the offering yield in France is 0.3 percent below the sample average. Nevertheless, country specific differences seem to affect the economic structure of corporate debt only marginally.

Considering the first step in the corporate decision-making process (see Figure 6.1), regulatory arbitrage with respect to the issuer location appears to be intense, with around one third of the issues being conducted by a corporate entity abroad. The most popular offshore locations are the Netherlands and Ireland (see Table 6.3), which provides a first hint that tax law arbitrage is an important factor driving this particular choice of law.¹¹² Even though the German central bank did not require the issuer of *Deutsche Mark* (DM) denominated debt to be located within Germany, only

¹¹² Ireland had a statutory corporate tax rate of only 17.7 percent over the period from 1998 to 2008, while the average corporate rate in the EU-27 and EFTA was 27.7 percent (Eidenmüller et al. 2010b).

14 percent of DM denominated debt securities were in fact issued by a corporate entity abroad. Issues by a foreign subsidiary were mostly denominated in *Swiss franc* (SFR). Furthermore, debt securities that were traded in France are more frequently issued by a foreign corporate entity, while the Euromarket shows the most pronounced home bias concerning the issuing corporate entity (i.e. the jurisdiction of the corporate parent and the jurisdiction of the issuing corporate entity are identical).

Table 6.2 Economic and legal structure of corporate debt issues in France, Germany and Italy 1998 - 2008

	France	Germany	Italy	Average
UK Contract Law	62%	46%	80%	58%
Foreign Contract Law	78%	53%	92%	68%
UK Issuer	2%	6%	0%	4%
Foreign Issuer	29%	37%	15%	31%
ø Amount in Prospect (Mill. €)	214	203	236	212
ø Maturity (Years)	6.3	6.2	7.5	6.4
ø S&P Rating	AA	AA-	AA	AA
ø Yield	4.6	5.1	5.1	4.9
Observations	3236	4320	1220	8776

Table 6.3 Location of corporate entity issuing the debt security 1998 - 2008

	France	Germany	Italy	Total
Netherlands	163	506	29	698
Rep. Ireland	82	385	71	538
United Kingdom	72	240	3	315
Luxembourg	73	203	20	296
Jersey	120	84	-	204
Belgium	115	52	-	167
Germany	124	-	22	146
Italy	135	-	-	135
Austria	-	58	31	89
France	-	66	-	66
Switzerland	23	2	4	29
Greece	12	-	-	12
Poland	-	5	-	5
Other	3	6	3	12

Table 6.4 *Contract law governing the debt security 1998 - 2008*

	France	Germany	Italy	Total
United Kingdom	1,947	1,677	972	4,596
United States	51	32	17	100
Switzerland	52	44	-	96
Luxembourg	8	69	1	78
France	15	17	-	32
Hong Kong	11	17	2	30
Japan	10	18	1	29
Rep. Ireland	-	25	-	25
Netherlands	1	11	-	12
Australia	5	2	-	7
Canada	3	1	-	4
Germany	3	-	1	4
Singapore	1	2	-	3
Other	2	5	-	7

When it comes to the choice of contract law, which is the second step in the corporate decision making process (see Figure 6.1), there are significant differences among debt issues in the jurisdictions under consideration. Although a majority of debt issues specifies a foreign contract law in all three countries, Italian (92%) and French (78%) firms make more extensive use of it. The most popular contract law appears to be the law of the UK (58%), followed with some distance by the US, Swiss and Luxembourgian law (see Table 6.4). Further, the evidence shows that the choice of contract law depends on the currency in which the debt security is issued. The fact that very few DM denominated debt securities have been subject to a foreign contract law demonstrates the impact of path dependence. When the requirement to specify German contract law for DM denominated debt securities was finally abolished by the German central bank, investment bankers and lawyers were still reluctant to adopt foreign law to govern these debt contracts (Gruson and Harrer 1996). This assumption is impressively confirmed by the data. In the period under consideration, only 3 percent of DM denominated debt issues were subject to a

foreign contract law.¹¹³ At the same time, 93 percent of *Yen* (¥) denominated debt specified a non-domestic contract law. Regarding the marketplace where the debt security is traded, debt securities on the Italian market are most likely to specify foreign contract laws, while on the Euromarket most debt issues stick to a contract law identical to the jurisdiction of the issuing entity (see Table 6.6).

Table 6.5 Currency in which the debt securities was issued and choice of law 1998 - 2008

	Issuer location (in %)		Contract law (in %)		Issues
	Foreign	UK	Foreign	UK	
EUR	29	2	70	66	4,850
US	37	5	80	43	1,468
DM	14	1	3	3	394
HK	23	8	87	55	367
STG	35	13	71	68	350
SFR	43	4	81	46	348
Y	39	6	93	81	286

¹¹³ The DM was available as currency for debt issues until the year 2001.

Table 6.6 *Marketplace in which the debt securities is traded and choice of law 1998 - 2008*

	Issuer location (in %)		Contract law (in %)		Issues	
	Foreign	UK	Foreign	UK		
Marketplace	Germany Public	20	14	65	69	340
	France Public	43	0	86	72	310
	Italy Public	34	0	89	71	213
	Euro Public	29	3	65	55	3,370
	Euro Private	28	3	48	39	1,157
	EURO/144A	16	2	27	21	252
	Foreign Public	36	2	75	62	562
	Foreign Private	36	4	84	73	321
	US Private	38	8	75	67	507
	US Public	25	4	56	47	237

6.4.2. Results of a multivariate analysis on the choice of law

Before the article sets out to investigate the role of path dependence in regulatory arbitrage, the factors influencing firms' choice of law will be analysed in a multivariate context. Table 6.7 and Table 6.8 present the results of the simple probit model as laid out in equation 6.1. The model respectively estimates the probability that the corporate entity issuing the debt security is located abroad or the debt security specifies a foreign contract law. In what follows, all estimates are reported as marginal effects as they can conveniently be interpreted in this way. Moreover, since the overall sample consists of a broad array of debt securities, a subsample of straight bonds was constructed to check for the robustness of the findings. In a second step, the analysis specifies dummy variables for the legal advisor accompanying the debt issue.

Regarding the location of the debt issuer, only one deal specific variable turns out to be highly significant. As in the descriptive analysis, the currency of a debt issue is strongly related to the location of the debt issuer. The size and maturity of the debt

security fail to be statistically significant, which is also true for the risk, coupon payment and marketplace in which the debt contract is traded. However, the probit model supports the more pronounced wanderlust among Italian and French issuers as compared to German issuers. The empirical evidence also reveals that firms prefer to locate debt issuers in larger economies, which could be due to legal or economic network effects.

Regarding the legal factors driving the choice of the issuer location in multinational firms, Eidenmüller et al. (2010b) have found low withholding taxes to attract more cross border debt issues. This result is somewhat puzzling for Germany, as the country traditionally had no withholding taxes on debt securities, but local firms have issued a large number of debt securities by corporate entities abroad. It is hence not surprising that withholding taxes were not found to be a significant predictor for regulatory arbitrage in the subsample at hand. While low withholding taxes may generally attract debt issues, firms in some jurisdictions may simply use different channels to engage in regulatory arbitrage. Two important channels might be corporate taxes and creditor rights.

While Eidenmüller et al. (2010b) could not disentangle whether regulatory arbitrage with respect to corporate taxation confirms the profit shifting or the tax shield hypothesis, the evidence at the micro level clearly supports the assumption that firms engage in profit shifting (see Table 6.7). The empirical findings show that the larger the (positive) gap in the statutory corporate tax rates between the location of the corporate parent and the issuing entity, the higher the probability that the debt issue is placed abroad.¹¹⁴ Debt issuers can benefit from such tax differentials by overcharging other affiliates for an intra-group loan, thereby effectively siphoning off profits from a high tax jurisdiction (Eidenmüller et al. 2010b). Furthermore, by exploiting the information on the debt security level, the probit estimates reveal that firms preferably choose venues with stronger creditor rights. This result can be traced

¹¹⁴ The tax gap was calculated by subtracting the tax rate of the subsidiary from the tax rate the corporate parent is subject to. A positive effect hence indicates that a higher tax rate at the corporate parent's location and low tax rates at the subsidiary's location attract more debt issues in the latter.

back to the fact that stronger creditor rights mitigate the principal agent problem between debt holders and managers, thereby reducing agency costs, which in turn increases the expected return of the investor. Finally, it is worth mentioning that all of these findings are robust for the subsample of straight bonds and the specification of legal advisor dummies.

With regard to regulatory arbitrage in contract law, section 6.4.1. already revealed that the choice of a foreign law is almost identical to the choice of UK law. For this reason, a subsample of debt contracts specifying UK contract law was constructed as a robustness check. The multivariate probit regression confirms that French and Italian issues specify foreign contract laws more frequently. Unlike regulatory arbitrage with regard to the issuer location, deal specific characteristics play an important role for the choice of contract law. Larger deals are less likely to be governed by foreign or UK law, while debt contracts with a longer maturity more often specify UK law (though not foreign law in general).

Moreover, the risk of the debt security and the interest payment turn out to be highly significant predictors of the applicable contract law. Riskier debt securities are less likely to specify foreign or UK contract law, while firms apparently compensate investors for the adoption of foreign contract law with higher coupon payments. Finally, debt issues in foreign currencies are positively correlated with the adoption of foreign law, but not UK law in particular. As regards the unreported legal advisor dummies, the only statistically significant dummy is the in-house legal counsel, which indicates that in-house legal departments have a more pronounced home bias regarding the applicable contract law.¹¹⁵

¹¹⁵ This finding is consistent with the answers of expert interviews, which had been carried out as a pretest to this study.

Table 6.7 *Multivariate probit model estimates for foreign corporate debt issuers*

	all debt issues		straight bond issues	
Transaction Variables				
Amount in Prospect * 10 ³	0.055 (0.579)	0.073 (0.469)	0.115 (0.280)	0.139 (0.189)
Maturity (Years)	-0.002 (0.508)	-0.001 (0.723)	-0.002 (0.595)	-0.001 (0.731)
S&P Rating	0.005 (0.585)	0.006 (0.519)	0.016 (0.251)	0.017 (0.216)
Coupon	-0.022 * (0.075)	-0.021 * (0.094)	-0.023 (0.162)	-0.021 (0.181)
Marketplace	0.001 (0.437)	0.001 (0.498)	-0.001 (0.715)	-0.001 (0.744)
Currency	-0.010 *** (0.000)	-0.013 *** (0.000)	-0.007 *** (0.000)	-0.008 *** (0.000)
France	0.147 *** (0.000)	0.155 *** (0.000)	0.149 *** (0.001)	0.155 *** (0.001)
Italy	0.259 *** (0.007)	0.276 *** (0.005)	0.300 *** (0.008)	0.313 *** (0.006)
Macro Economy				
GDP	0.002 ** (0.012)	0.002 ** (0.011)	0.002 *** (0.000)	0.002 *** (0.000)
Int. Bond Market * 10 ³	-0.281 (0.498)	-0.228 (0.579)	-0.565 (0.225)	-0.516 (0.243)
Risk				
Inflation	0.396 (0.251)	0.399 (0.249)	0.282 (0.190)	0.248 (0.206)
Government Bond Yield	2.316 (0.547)	2.849 (0.472)	0.184 (0.596)	0.049 (0.881)
Withholding Tax	-0.034 (0.292)	-0.038 (0.265)	-0.020 * (0.069)	-0.017 (0.144)
Corporate Tax	0.012 *** (0.001)	0.012 *** (0.001)	0.012 ** (0.023)	0.012 ** (0.030)
Creditor Rights	-0.577 *** (0.008)	-0.616 *** (0.007)	-0.449 *** (0.000)	-0.434 *** (0.000)

table continues on the next page

Legal Advisor Dummies	-	Y	-	Y
Observations	1489	1470	970	946
Log Pseudolikelihood	-183	-179	-108	-106
Pseudo R ²	78.4	78.5	81.3	81.1
SEs	robust	robust	robust	robust

marginal effects, p-values in parentheses

Table 6.8 *Multivariate probit model estimates for the contract law specified in the debt contract*

	Foreign	UK	Foreign	UK
<i>Amount in Prospect</i> * 10 ³	-0.191 *** (0.001)	-0.146 ** (0.016)	-0.205 *** (0.001)	-0.116 * (0.064)
<i>Maturity (Years)</i>	0.001 (0.731)	0.005 ** (0.018)	0.001 (0.534)	0.006 *** (0.011)
<i>S&P Rating</i>	-0.018 *** (0.000)	-0.012 *** (0.006)	-0.017 *** (0.000)	-0.011 ** (0.010)
<i>Coupon</i>	0.019 *** (0.000)	0.018 *** (0.000)	0.018 *** (0.001)	0.015 *** (0.002)
<i>Marketplace</i>	0.001 (0.322)	0.001 (0.390)	0.001 (0.292)	0.001 (0.447)
<i>Currency</i>	0.004 *** (0.000)	-0.002 *** (0.000)	0.004 *** (0.000)	-0.002 ** (0.012)
<i>France</i>	0.210 *** (0.000)	0.144 *** (0.000)	0.222 *** (0.000)	0.151 *** (0.000)
<i>Italy</i>	0.296 *** (0.000)	0.268 *** (0.000)	0.295 *** (0.000)	0.297 *** (0.000)
Legal Advisor Dummies	-	-	Y	Y
Observations	1560	1721	1524	1681
Log Pseudolikelihood	-912	-1127	-887	-1085
Pseudo R ²	9.7	4.9	10.1	6.2
SEs	robust	robust	robust	robust

marginal effects, p-values in parentheses

6.4.3. Results of the panel data analysis on path dependence

Table 6.9 and Table 6.10 present the results of a dynamic panel data model. They originate from the structural equation as set out in equation 6.3. The estimates confirm the hypothesis that regulatory arbitrage in corporate debt issues is path dependent. The lagged dependent variables for the year t minus 1 are highly significant for both stages of the corporate decision-making process, i.e. the location of the debt issuer and the choice of contract law. Except for one specification, all findings stay robust if the data is weighted with the transaction volume of the debt issue.

All but one specification confirm *proposition 1* stating that path dependence is more pronounced for the issuing corporate entity than regarding the applicable contract law. This finding is supported by the overall fit of the model as measured by the Pseudo- R^2 . Apparently, the lagged issuer location variables have much more explanatory power than the lagged contract law variable. This result may be due to the switching costs stemming from the incorporation of an investment vehicle, which can involve the costs of transferring assets or engaging in real business activities to obtain the desired benefits from regulatory arbitrage.

Unlike path dependence with regard to technical standards, legal arbitrage does not intensify over time. In all specifications, irrespective of the field of the law, only the first lag is a significant predictor for the choice of law. The empirical evidence thus confirms *proposition 2* indicating that firms trade off the administrative costs of deciding upon each debt issue and the potentially foregone costs of not checking for advantageous regulations. Interestingly, if one considers the count data specification, there is weak evidence that regulatory arbitrage regarding the debt issuer is not only more pronounced but also more persistent over time (the lagged variables t minus 2 and t minus 3 are significant at the 10 percent level). Finally, the debt-equity-ratio never turns out to be significant, which indicates that financial leverage is *per se* no reason to issue debt securities abroad.

Table 6.9 *Dynamic probit model estimates for path dependence in regulatory arbitrage (percentage of debt securities issued by foreign corporate entities)*

	Foreign Issuer Location			
	Counts		Volume	
	Pooled	Panel	Pooled	Panel
Lag1	1.066 *** (0.000)	2.847 *** (0.001)	0.460 ** (0.022)	1.355 * (0.060)
Lag2	0.465 (0.129)	1.240 * (0.096)	0.124 (0.533)	-0.159 (0.831)
Lag3	0.493 * (0.084)	1.309 * (0.085)	0.230 (0.223)	0.558 (0.378)
Debt / Equity Ratio	0.001 (0.248)	0.002 (0.481)	0.000 (0.794)	0.001 (0.875)
Firm FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
SEs	r	-	r	-
Pseudo R ²	49.1	-	24.2	-
Log Pseudolikelihood	-39.10	-38.64	-51.80	-45.60
Observations	118	118	103	103

p-values in parentheses

Table 6.10 *Dynamic probit model estimates for path dependence in regulatory arbitrage (percentage of debt securities adopting foreign / UK contract law)*

	Foreign Contract Law				UK Contract Law			
	Counts		Volume		Counts		Volume	
	Pooled	Panel	Pooled	Panel	Pooled	Panel	Pooled	Panel
Lag1	0.194 *** (0.002)	2.088 *** (0.003)	0.130 ** (0.011)	1.535 ** (0.024)	0.210 *** (0.002)	1.831 *** (0.003)	0.102 (0.140)	0.757 (0.179)
Lag2	-0.089 (0.183)	-0.953 (0.280)	0.015 (0.808)	0.173 (0.809)	-0.059 (0.470)	-0.512 (0.499)	-0.027 (0.736)	-0.203 (0.771)
Lag3	0.080 (0.193)	0.863 (0.262)	-0.080 (0.266)	-0.947 (0.259)	0.070 (0.330)	0.607 (0.362)	0.164 (0.046)	1.223 (0.061)
Debt / Equity Ratio	0.000 (0.584)	0.002 (0.593)	0.000 (0.271)	0.004 (0.270)	0.000 (0.669)	0.001 (0.668)	0.001 (0.268)	0.004 (0.275)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SEs	r	-	r	-	r	-	r	-
Pseudo R ²	28.2	-	23.8	-	25.4	-	19.2	-
Log Pseudolikelihood	-20.94	-20.94	-18.22	-18.22	-25.69	-25.69	-27.01	-27.01
Observations	98	98	82	90	98	98	90	90

p-values in parentheses

6.5. Summary and conclusion

Regulatory arbitrage has become an integral part of the corporate decision-making process. This article has investigated regulatory arbitrage in the context of corporate debt issues. It has thereby focused on the legal rules governing the debt issuer as well as the contract law stipulated in the debenture. The analysis applied a discrete choice model to identify the regulatory and deal specific factors which are associated with a particular choice of law. In a second step, it applied a dynamic panel data model to study the intensity and persistence of regulatory arbitrage.

The data on 8,776 debt issues revealed that French and Italian firms engage more frequently in regulatory arbitrage regarding both, the contract law and the location of the debt issuing corporate entity. In comparison, German managers are more reluctant with respect to such practices. Moreover, the evidence shows that regulatory arbitrage concerning the issuer location is less intense (31 percent located abroad) than with respect to the applicable contract law (68 percent under foreign contract law). While the most popular offshore locations are the Netherlands and Ireland, the absolute majority of debt issues specified the contract law of the UK (58 percent). The credit rating and the coupon payment are important factors regarding the choice of the contract law. The currency in which the debt security is issued is strongly related to the contract law and the location of the debt issuer.

Regulatory arbitrage with respect to the debt issuer was found with regard to tax law and bankruptcy rules. Debt issuers that are located abroad often target a jurisdiction with low corporate tax rates. By overcharging inter-firm loans, firms may use such tax differences to reduce their profits in high tax jurisdictions. Finally, the empirical findings support the assumption that better creditor rights save firms financing costs. Stronger creditor protection rights attract significantly more debt issuers.

In the second part of the analysis, the article has set out to investigate the intensity of path dependence in regulatory arbitrage. With regard to both – contract law and the issuer location – path dependence is present over a period of one year. During this period, path dependence with regard to the location of the debt issuer appears to be

stronger than with respect to the applicable contract law. However, there is weak evidence that path dependence is more persistent regarding the debt issuer.

There are straightforward policy conclusions that can be drawn from these findings. While Eidenmüller et al. (2010b) found withholding tax arbitrage to be an important driver in cross-border debt issues, countries like Germany do not raise withholding taxes but loose debt issuers nevertheless. The evidence shows that better creditor rights and lower corporate tax rates can stop debt issues from moving out of the country. Moreover, regulatory reforms are only effective if firms take new regulations into account. With regard to debt issues there is evidence of path dependence in the corporate-decision making process over the period of at least one year. Switching firm's decisions is more difficult with regard to the location of the debt issuer than regarding the applicable contract law. If governments want to encourage firms to respond to regulatory changes, they have to reduce the search costs of identifying advantageous regulation and make firms aware of new legal rules.

Chapter 7

Conclusion

7. Conclusion

Regulatory competition has become an inherent feature of the European legal environment. As in the United States, such competition appears in various fields of law and very prominently in company, contract and bankruptcy law. The impact of regulatory competition on economic welfare is not homogenous. Its desirability depends on the rationale of the legal rules, which were initially implemented by the state.¹¹⁶ If the legislator intervened in the market to successfully correct for its malfunction, the emergence of regulatory competition has adverse effects on economic welfare (Sinn 1997, 2003). In stark contrast, if the legislator implemented regulation to provide rents for market participants, regulatory competition enhances economic welfare because incumbents are no longer protected by national legislation. In some fields of the law it is hard to disentangle whether regulation works (effectively) against market failure or whether it serves as a rent-seeking device in the sense of Tullock (1967, 1971) or Stigler (1971). In those cases, it is necessary to look at the specific legal factors which are subject to regulatory competition to provide informed policy guidance to the national and supranational legislator. This dissertation presented new insights regarding the drivers and impact of regulatory competition in two important areas of business law: corporate law and the legal rules governing corporate debt securities.

Corporate charter competition is still a very recent phenomenon in Europe. It started roughly a decade ago when the ECJ held that the real seat doctrine violates the freedom of establishment laid down in the TFEU. The analysis in chapter 2 revealed that shortly after the ECJ opened the market for corporate law European governments have been extremely keen to attract incorporations of start-up firms. Corporate charter competition was accelerated by the (initial) success of the UK *Limited*, which has been the most popular foreign legal form among European start-ups until now. Abolishing or reducing the minimum capital requirement for the private LLC was identified as the crucial element in national company law reforms. The time it takes to incorporate a company as well as the availability of an online incorporation procedure were of minor importance.

¹¹⁶ In a second step, its desirability also depends on the effectiveness of the legal rules.

Which impact European corporate charter competition has on economic welfare is not clear by now. Streamlining administrative procedures is obviously desirable as they represent per definition a deadweight loss to the economy. Lowering the minimum capital requirement has allowed additional ventures to engage in business activities. At least some of these ventures would not have been established under the prior regulatory environment.¹¹⁷ As most of these new firms have a relatively low equity base (Niemeier 2009; Bayer and Hoffmann 2009), they impose a negative externality on vendors and other business partners. For instance, while previously business partners were familiar with the financial minimum standards of the LLC (e.g. € 25,000 in case of the German GmbH), they now have to reveal the capitalisation of every firm which is incorporated under a foreign or one of the new domestic legal forms before they engage in business transactions. If creditors or suppliers decide to abstain from obtaining this information they may incur additional costs due to reduced recovery rates in case a business partner enters bankruptcy.¹¹⁸ One could therefore argue that the minimum capital requirement served as a soundness check signalling the seriousness of business ventures and that corporate charter competition in Europe reduces economic welfare by diluting this test. On the other hand, the minimum capital requirement had also imposed a barrier to firm entry (Djankov et al. 2002), which allowed wealthy entrepreneurs among others to obtain limited liability while poorer entrepreneurs were personally liable for their venture or had been excluded from business activities altogether. Wealthier entrepreneurs could hence earn economic rents due to reduced economic competition as a result of keeping some entrepreneurs out of the market. By reducing the minimum capital requirement, regulatory competition eliminates such rents and increases economic welfare. Whether corporate charter competition generates an overall net welfare gain is left to future theoretical and empirical research.

With the introduction of the legal form SE, charter competition has been extended from the horizontal level (nation states vs. nation states) to the vertical level (nation states vs. supranational institution EU). Moreover, the SE allowed *existing* European firms which were previously subject to the real seat doctrine for the first time to

¹¹⁷ This argument assumes that entrepreneurs would not have entered business as sole proprietors.

¹¹⁸ Further costs can occur due to the necessity to evaluate and specify collateral in business contracts as well as to buy insurance against default.

depart from the legal rules of their home country. Because the SE has created certain legal differences in relation to national companies it has made legal arbitrage opportunities available, which have evidently been utilised. The analysis in chapter 3 showed that managers have chosen the SE because of its European image, the choice it offers between the one-tier and the two-tier board structure, to accomplish a cross-border merger¹¹⁹ or to shop for a more favourable corporate law. The possibilities to abolish or freeze mandatory worker co-determination and to reduce the size of the supervisory board have been the two most disputed legal features of the SE. With respect to worker co-determination, the virtues of the SE and regulatory competition remain ambiguous. While scholars have found that the reduction of board level co-determination from parity employee representation to one-third employee representation may in fact increase firm value (Gorton and Schmid 2002), eliminating worker co-determination completely may accomplish the opposite (Fauver and Fuerst 2006). Moreover, negotiating worker co-determination only once by means of the special negotiations body during the incorporation process can impose a time inconsistency problem. While firm owners, managers and current employees can benefit from the abolition of worker co-determination, the interests of future workers may not be considered in the co-determination agreement. Here again, more research has to be conducted. Nevertheless, even though worker co-determination in the SE is highly disputed in the literature, the abuse of the legal rules appears not as relevant in legal practice. The empirical evidence in chapter 3 has shown that less than 1 percent of currently incorporated SEs has in fact brought worker co-determination to an end. Another stakeholder group that is affected by an SE incorporation are shareholders. Chapter 4 provided some initial evidence that incorporating under the legal form of the SE can unleash additional value benefiting this interest group.

With regard to the location of corporate debt issues regulatory competition is mostly driven by tax legislation. The data in chapter 5 supported the prediction that within the EEA debt issuers are attracted by a low withholding tax rate. Corporate taxation is relevant as well, but here the motives why firms engage in regulatory arbitrage are

¹¹⁹ Meanwhile, re-incorporations among the EEA Member States should also be possible by means of a cross-border merger into a shell company of the target jurisdiction under the Cross-Border Merger Directive 2005/56/EC.

less clear. While firms in some jurisdictions may use out-of-state debt issues as a tax shield by issuing more debt locally in high-tax jurisdictions, others issue debt securities in low-tax jurisdictions to benefit from profit shifting opportunities. Creditor rights were generally not identified as an important driver for regulatory competition in Europe, although they have been statistically significant in a subsample of multinational corporations located in France, Germany and Italy. Countries that have had traditionally no withholding tax on debt issues (e.g. Germany) may thus improve their competitive stance by implementing better creditor rights in bankruptcy.

The reduction or abolishment of withholding taxes as a result of regulatory competition can decrease national tax revenues. Obviously, if tax revenues are reduced in the course of tax competition and governments hence become unable to provide for public infrastructure, this type of regulatory competition is indeed harmful. Nevertheless, withholding taxes may be a comparatively inefficient way to collect tax revenues, because multinational firms manage to circumvent these taxes easily and tax law arbitrage is costly. Moreover, withholding taxes may introduce economic distortion if transactions between companies of different Member States are subject to less favourable tax conditions than those applicable to the same transactions carried out between companies of the same Member State. This is because withholding taxes on interest and royalties can result in costly double taxation or burdensome administrative formalities. The European legislator has therefore aimed to eliminate such unfavourable tax conditions for multinational firms in the directive on the taxation of cross-border interest and royalty payments. Regulatory competition in corporate debt securities could thus indirectly support the efforts of the EU to abolish withholding taxes on interest. However, eliminating the distortion from tax law arbitrage may not be easy since regulatory arbitrage is subject to path dependence as the analysis in chapter 6 has shown. Regulatory reforms will therefore face some degree of sluggishness in the choice of law and may not become effective in the short run.

To put it in a nutshell, regulatory competition in business law has the potential to increase as well as to reduce economic welfare in Europe. The lessons that can be learned from other regions of the world are limited since the drivers of the

competition process are not identical. While in the United States corporate charter competition is mostly concerned with corporate governance regulation, the ease of incorporating a business has been in the centre of the European reform agenda. Moreover, even though the United Kingdom quickly gained considerable shares in the market for corporate charters, Europe has not seen a runaway winner comparable to Delaware in the United States so far. The drivers of the competition process which were identified in this dissertation may change over time, as for instance the minimum capital requirement for private LLCs has already been abolished or reduced in many European jurisdictions in the recent past. Empirists must therefore keep track of these developments, while legal scholars and economists alike should in particular consider the normative aspects regarding the various fields of regulatory competition.

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