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ABSTRACT

Where Do Firms Incorporate?*

Over the last few years, a series of rulings by the European Court of Justice (ECJ) has opened up the European Union to cross-border mobility in incorporation. In this paper we explore how deregulation and the costs of regulation have affected the location decisions of firms. Using a newly constructed dataset of companies from around the world incorporating in the U.K. between 1997 and 2005 we find a large increase in new incorporations of limited liability firms from E.U. Member States following the ECJ rulings. We find that incorporation costs, in particular minimum capital requirements, and delays in incorporation are significant influences on firms' location decisions. Our results confirm the relevance of price to firms' choice of legal systems. We also report that cross-border incorporation has prompted regulatory competition between E.U. Member States to provide low-cost corporate law to limited liability companies.

JEL Classification: G38 and K22
Keywords: entrepreneurship, financial regulation, incorporation and regulatory competition

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1 Introduction

Corporate mobility has been the subject of much attention from economists and lawyers. The debate has focused on two questions. The first is the effect of freedom of incorporation on firms' choice of legal form. The second is regulatory competition between jurisdictions for firm incorporations. This study is to our knowledge the first attempt to link this debate with a growing literature on the effect of costs of regulation on entrepreneurial activity. It uses a radical change in E.U. law following a series of rulings by the European Court of Justice (ECJ). These rulings represent one of the strongest attempts ever made to deregulate company law and they therefore provide a natural experiment of the impact of regulation on corporate mobility.

According to one school of thought, the potential revenues from incorporation encourage competition between legal regimes in the design of corporate law that promotes economic efficiency. According to an alternative school of thought, the selection of legal systems is made by self-serving managers that seek legal regimes that are best suited to their own rather than wider shareholder interests. Governments in turn respond by designing laws that appeal to managerial rather than investor interests and economic efficiency suffers as a consequence of "runs to the bottom" in standards of legal protection.[1]

There is an extensive empirical literature on both competition in incorporation and the regulation of product markets. The former has evaluated the effect of competition in incorporation on firm values.[2] The latter has looked at the effect of regulation on economic growth and entrepreneurial activity.[3] But to date there has been very little analysis of the effect of either competition in incorporation or regulation in an international context. Important exceptions are Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) who use data on the costs of entry of firms in different countries to establish the adverse effect of regulation on corruption and informal black economies and Fonseca, Lopez-Garcia and Pissarides (2001), who show a negative correlation

[1] While some authors argue that regulatory competition is actively pursued to create revenue (e.g. Romano (1985)), others argue that there is hardly any competition to speak of (e.g. Kahan and Kamar (2002)). Also, there is considerable disagreement of whether regulatory competition does result in high or low standards of corporate legislation. Recent theoretical contributions have analyzed the choice of legal regimes from a legislator's (Bar-Gill, Barzuza and Bebchuk (2004)) as well as from a company-user's perspective (Fluck and Mayer (2005)), where standards of corporate legislation emerge endogenously. It is probably fair to say that the debate on the causes and effects of corporate mobility based on U.S. evidence remains open, some 100 years after New Jersey started to attract out-of-state incorporations.

[2] Daines (2001), for example, finds significantly higher firm values for firms incorporated in Delaware. Studies such as Subramanian (2004) have shown however that firm value differences disappear once firm size characteristics are controlled for. The empirical evidence is inconclusive because it is confined to intra-state comparisons in the US and changes in corporate law and firms' incorporation decisions are endogenous

[3] Recent contributions include Bertrand and Kramarz (2003), who show that deterrence of entry for firms due to regulation has adverse effects on economic growth in France and Nicoletti and Scarpetta (2003), who show for OECD countries that regulatory reform and increased competition positively correlate with productivity and the entry of firms.

between this cost of entry data on the one hand and the movement between employment and self-employment as well as employment rates across countries on the other.

This paper is in the spirit of the paper by Djankov *et al* in using international data but it does so to answer questions on entrepreneurship and new company formation and competition for incorporations. It is therefore as far as we are aware the first attempt to supply international empirical evidence on the how deregulation and the costs of regulation affect the decisions of firms on where to incorporate. The econometric tests we employ are more powerful than previous cross-sectional correlations because they establish a link between the cost of regulation and the rate of new company formation. They are also free from potential endogeneity bias.

The experiment we focus on is the recent freedom of incorporation rulings by the ECJ. The *Centros*, *Überseering* and *Inspire Art* rulings by the ECJ confirmed freedom of incorporation in the European Union (E.U.), a principle that was agreed in the founding treaties of the E.U., but applied by few Member States in the area of company law.[4] They constitute one of the strongest moves ever to deregulate company law and provide a natural experiment on the impact of regulation on corporate mobility. This paper analyzes the consequences of this development.

The *Centros*, *Überseering* and *Inspire Art* decisions of the ECJ have caused considerable legal debate.[5] There seems to be broad consensus that the decisions of the Court have firmly established the right of firms to choose their legal seat within the E.U., irrespective of the geographic location of their directors, owners or real activities. Prior to the decisions firms in most E.U. countries had to be incorporated where they operated. However, there is no consensus as to what are the practical consequences of being able to freely choose a legal seat. While some authors predicted that companies from other E.U. Member States would move their legal seat to the United Kingdom (U.K.), others argued that there would be no measurable impact of the European Court's decisions.

This study measures the impact of the ECJ's decisions empirically. While this is in itself an important issue, the paper goes further by examining the influence of costs of regulation on corporate behaviour. The paper uses data for 2.14 million private and public limited companies incorporated in the U.K. between 1997 and 2005 and assigns nationalities to all firms that do not have a U.K. origin. The choice of the U.K. follows from the fact that it has the simplest incorporation procedures and the lowest incorporation costs in the E.U. It also has a large number of

[4] See the *Centros* decision (ECJ Case C-212/97, Centros Ltd. v. Erhvervs- og Selskabsstyrelsen, decision of 3/9/1999, E.C.R. I-1459, the *Überseering* decision (ECJ Case C-208/00, Überseering B.V. v. Nordic Construction Company Baumanagement GmbH (NCC), decision of 11/5/2002, referred to the ECJ by the German Bundesgerichtshof (BGH), Resolution of 3/30/2000) and the *Inspire Art* decision (ECJ Case C-167/01, Kamer van Koophandel en Fabrieken voor Amsterdam v. Inspire Art Ltd., decision of 9/30/2003).

[5] Recent overviews are Kieninger (2004), Damman (2003) and Wymeersch (1999, 2003).

incorporations from outside the E.U., our control group, and a central company register. Additionally, contrary to most other E.U. countries, the incorporation principle guaranteeing freedom of incorporation has always applied in the U.K. and it is therefore possible to export U.K. corporate law to other countries. This possibility of exporting corporate law is the pivotal point of our empirical analysis.[6]

We find that the degree of corporate mobility is large and independent of whether we use conservative or broad estimates. We show that the Centros rulings are directly responsible for creating large international flows of companies. Between 2002 and 2005 over 55,000 new private limited companies have been set up from other E.U. Member States in the U.K. In absolute terms the largest flows of companies come from Germany, France, the Netherlands and Cyprus, with over 26,000 firms from Germany alone. Most of the new foreign Limited companies are small, having only one or two directors. Also, migration is legally confined to new incorporations since re-incorporations are still impossible under E.U. law. Migration has been concentrated in private limited companies and we find no evidence that Centros has had implications for incorporation of public limited companies in the U.K. This means that the primary impact of law recorded in this paper is on entry of new firms rather than change in legal status of existing firms.

We provide evidence on the drivers of this new incorporation trend. Using differences-in-differences regressions we show that post-Centros increases in legal migration rates can be directly explained by country-specific variables such as the deadweight cost of incorporation, minimum capital requirements and the waiting time to obtain legal status. Small differences in setup cost and capital requirements between countries have surprisingly large effects on the probability that entrepreneurs will choose not to incorporate in their home country but in the U.K. On the other hand, factors such as legal uncertainty, language barriers and stronger enforcement of disclosure standards seem to be no deterrent to entrepreneurs choosing U.K. company law and incorporation procedures over more expensive alternatives at home. The evidence supports a simple model of choice of legal form dictated by relative costs of comparable jurisdictions rather than a broader set of non-price considerations.

We show that one of the reasons why price is such an important consideration is that the market has been penetrated by a set of intermediaries, registration agents, that minimize the costs of shifting between legal jurisdictions and reducing the significance of non-price considerations in firm choice. These agents reduce the transaction costs of uninformed entrepreneurs taking

[6] Most other E.U. countries prior to the Centros rulings followed the real seat principle, which prohibited and even after the Centros rulings continue to prohibit exporting national corporate law. We address this in much more detail in the following section.

advantage of price differentials between jurisdictions. The agent effect is particularly pronounced in the German and Dutch incorporation markets and therefore seems to emerge endogenously in high-cost jurisdictions.[7] As a result, Germany has experienced the largest absolute outflow of new incorporations and the largest pre- to post-Centros change in the outflow of incorporations. The Netherlands and Norway have experienced the second- and third-largest absolute changes in post-Centros outflows.

In summary this paper provides strong evidence of corporate mobility in Europe: the number of companies operating in one jurisdiction and incorporating in another is substantial. The flow of companies to the U.K. is confined to new incorporations of private limited companies and has been driven by relative costs of regulation.

The rest of the paper documents and estimates these effects. It is organized as follows. In Section 2 we describe the legal and theoretical background to this paper. In Section 3 we explain our empirical methodology. In Section 4 we present our main results and analyze their robustness. We conclude in Section 5.

2 Corporate Mobility and Regulation

2.1 Law and Institutions

The European Court of Justice on 30 September 2003 ruled that *Inspire Art Ltd*.—a private company limited by shares incorporated in Folkstone, England—was right in being incorporated in England while operating entirely within the Netherlands. The ECJ also stated that this was in line with European law even if the only reason for incorporating in the U.K. was to circumvent Dutch minimum capital requirements for limited liability companies, since "the fact that the company was formed in a particular Member State for the sole purpose of enjoying the benefit of more favorable legislation does not constitute abuse even if that company conducts its activities entirely or mainly in that second State". In *Centros, Überseering*, and *Inspire Art* the European Court of Justice therefore established the *incorporation principle* throughout the E.U. and upheld the freedom of firms that incorporate in one Member State of the E.U. to do business in any other Member State of the E.U. The Court has repeatedly emphasized that freedom of incorporation also holds for "round-trip" incorporations, when residents of country A incorporate in country B with the sole purpose of doing business in country A.

[7] The agent market in Germany and the Netherlands is highly concentrated, but entry costs are low and there are no formal barriers to entry. As a result prices are competitive. A typical full incorporation package is available for 600 Euro.

Historically, jurisdictions have tended to follow either the *incorporation principle* or the *real seat principle*, while some countries employ a mixture. Under the incorporation principle firms can freely choose which laws they wish to consume, irrespective of their real seat. The incorporation principle is applied by the U.K., Ireland and most U.S. states. Under the real seat principle firms must consume corporate law at the geographic location of their real seat, otherwise they cannot obtain legal status. The rules of new company formation at the real seat apply. Prior to the ECJ judgements this principle was applied by Germany, Austria, France and most other E.U. countries. Real seat countries cannot export their law, as the main place of real activity and corporate law must coincide. Incorporation countries can have export restrictions, like Ireland.[8] The U.K. does not have any export restrictions.

Along with the (in)ability to opt out of a particular company law, the regulation of registering a new company also varies greatly between jurisdictions. Following a scoring methodology developed by Djankov et. al. (2002), the World Bank compiles annual statistics on the number of regulatory procedures, time and direct cost associated with starting a business in 155 countries. The Bank furnishes an open ended survey to respondents in the different countries, asking them to identify all the procedures an entrepreneur must follow to successfully register a business as well as estimating the required time and cost.[9] The survey responses are indicative of the type of procedures different countries have put in place to protect the public interest, or to further the interests of certain interest groups. There are some procedures that are indispensable and applied by all company registrars, for example a name-check, where the company register must ensure that the name of a new business is not taken already, too similar to an existing name or contains words reserved for particular institutions, like "university" or "bank". Beyond the most basic procedures however, standards and therefore costs of regulation for new company formation vary greatly, for example the requirement to involve a notary in the process of registration of a newly incorporated company.

In terms of the choice of where firms incorporate more generally, there are two important institutional differences between the notion of corporate mobility referred to in the context of the United States and the corporate mobility in new company formation that we analyze here. First, in the U.S. a firm that is incorporated in and operates in State A can reincorporate in State B without winding-up or incurring a tax penalty. Technically, this is performed by incorporating a shell company in State B and merging the reincorporating company from State A into this company.

[8] To register an Irish Limited company the registrant must declare that the company will conduct some real activity in Ireland and that at least one of the directors resides in Ireland. We are grateful to Paul Farrell from CRO Dublin for pointing this out to us.

[9] See www.doingbusiness.org/ExploreTopics/StartingBusiness.

Naturally the company can also choose to incorporate in State B at the time of initial incorporation. In the E.U. a firm cannot leave its country of incorporation without facing mandatory dissolution, taxation, notary and other costs.[10] A draft European Commission Directive is seeking to reduce the cost of exit, but it is uncertain whether the Member States will support complete liberalization of the incorporation market.[11] This seems to effectively limit corporate mobility so far to private limited companies of small size and precludes the owner-manager conflict concerning reincorporation that has been discussed in the context of reincorporation to Delaware.

Second, the incentives for Member States of the E.U. and the U.S. for competing for incorporation business differ. Regulatory competition in the U.S. is influenced by franchise tax revenue.[12] In the E.U., a comparable tax does not exist and taxes of this character are explicitly prohibited.[13] E.U. Member States therefore lack the straightforward incentives for competition that, for example, states in the U.S.-focused setup of Bar-Gill, Barzuza and Bebchuk (2004) have.

2.2 Theory

The ECJ decisions provide a unique opportunity to test theories of corporate mobility and costs of regulation empirically. The ECJ has moved the E.U. from a mostly real seat model to a single market for company law operating under the incorporation model. Entrepreneurs can, for the first time, reveal their preferences by choosing among corporate law and regulation regimes.

This paper tests the theory that corporate mobility is driven by costs of regulation. There are four types of costs of incorporation. The first is the setup costs that firms incur at the time of registration. The second is the amount of capital that firms have to put up at incorporation. The third is the delay involved in the incorporation process and the fourth is the ongoing cost of complying with particular regulatory regimes after incorporation. The first cost type is a deadweight cost, the second results from the financing constraints of entrepreneurs, the third cost arises from the personal liability to which entrepreneurs are still exposed for the duration of the incorporation process and the fourth is the present value of ongoing expenses associated with operating a particular legal form over the lifetime of the firm.

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[10] The details differ between Member States. Restrictions on exit where upheld in the *Daily Mail* case that involved a U.K. company wanting to move its real seat to the Netherlands for tax purposes. See the *Daily Mail* case (ECJ Case C 81/87 (27/09/1988), The Queen vs. H. M. Treasury and Commissioners of Inland Revenue, ex parte Daily Mail and General Trust plc).

[11] Public consultation on the 14th Company Law Directive on the cross border transfer of companies' registered offices (European Commission, Press Release, IP/04/270, 26/02/2004).

[12] Romano (1998) shows that the State of Delaware's income from the franchise tax for the incorporation status of companies has amounted to between 10.9 and 24.9 percent of total tax revenue of the state between 1966 and 1996.

[13] See art. 2 (1) and art. 10 lit. a of Directive 69/335/EEC, cited in Kieninger (2004).

Firms should migrate from high to low cost regimes. The first hypothesis that we examine is whether deregulation has had an impact on decisions on where to incorporate. There is a widely held view that companies, in particular small ones, are firmly wedded to their national legal systems and therefore incorporate where they operate. We test this by looking at changes in cross-border incorporation over time, and in particular before and after the deregulation associated with the Centros and other ECJ judgements. If there is a high degree of inertia in companies incorporation decisions then we would expect to find little increase in cross-border incorporation.

We then go on to refine this test by examining whether the cross-border incorporations come from within or outside the E.U.. If deregulation is not a primary influence on decisions on where to incorporate then we would expect to observe little difference in cross-border incorporation from E.U. and non-E.U. countries. If on the other hand, deregulation is significant then we would expect to observe most cross-border incorporation from E.U. countries.

We combine the above two tests in a "difference in difference" test. We examine whether the changes in cross-border incorporation around deregulation come primarily from E.U. as against non-E.U. countries. If deregulation is of little significance then we would not expect to observe such a relation, but if it is then we would.

The second hypothesis that we examine is the impact of costs of regulation on decisions of where to incorporate. We use the above four categories of costs of regulation and examine their relation to cross-border incorporations. If non-price factors, such as language and the quality rather than the price of law, are more important then we would expect to observe little influence of price. We then examine the relation between changes in cross-border incorporations and the costs of incorporation in the countries from which companies originate. If price is important then we would expect that there would be a particularly marked movement from countries with high costs of incorporation.

Finally, the paper considers the policy response to cross-border incorporations. We examine the extent to which competition between national regimes has emerged by reporting the degree to which legislative changes have been enacted or proposed in different E.U. countries. If policymakers are concerned about cross-border outflows of companies from their countries then we would expect to observe policy reactions in those countries experiencing the largest outflows. We would also expect to observe changes in those policy instruments that our analysis suggests have the most effect on cross-border movements. For example, if we find that minimum capital requirements are an important influence on cross-border location decisions then we would expect to observe a significant change in minimum capital requirements in those countries most affected by outflows of companies.

3 Methodology and Data

3.1 Empirical Methodology

3.1.1 Identifying the Nationality of a Firm

We begin by defining empirical measures of nationality for a firm that is mobile between jurisdictions. We also introduce some terminology. What is a German, a Dutch, an Austrian or a Maltese company? Under the real seat principle, a German company is a company that has its directors and owners residing in Germany, its main centre of activity in Germany and is therefore obliged to adopt a German legal form. For a private limited company this would be a *GmbH*, the German equivalent of the U.K. private limited company (Limited), for a public limited company this would be an *AG*, the German equivalent to the U.K. public limited company (Public Limited). In contrast, under the incorporation principle we define a *German Limited* as a company that has its directors and owners residing in Germany, its main centre of activity in Germany but that is incorporated in the U.K. as a private limited company. This *foreign Limited*, with its main centre of activity in a foreign country is therefore different from a normal, or *domestic Limited*, with its main centre of activity in the U.K. This foreign Limited, which we call a *Centros-type* Limited is also very different from a subsidiary of a foreign firm, since while a subsidiary similarly could be incorporated as a Limited in the U.K., it would also have considerable real activities in the U.K. A Centros-type Limited however in most cases will have very little or *no* real activities in the U.K.[14]

To be accurate in explaining the legal status of a foreign Limited and to show why we consequently choose our particular empirical approach, we need to introduce another legal concept, which is *branches* of foreign companies. Generally, a branch is defined as an organizational unit of a founding entity, where the founding entity is a foreign firm. The branch itself does not amount to a separate legal entity but it may coincide with one. Most jurisdictions around the world require that a foreign company must register a branch with local authorities if it engages in real activity in that jurisdiction. Within the E.U. this is handled by the 11th E.U. Company Law Directive (89/666/EEC) on the disclosure requirements regarding branches. Under the 11th Directive, a foreign company must register its real activity in any E.U. State as a branch within that state. A domestic U.K. Limited would therefore have to register a branch in Germany if it were to engage in real activities

[14] Note that Centros-type companies can only incorporate in those E.U. countries which allow the export of company law, i.e. countries which have always applied the incorporation principle, of which the U.K is one. Another such country is Ireland, which however requires companies to have some real activity in Ireland and at least one director to reside in Ireland and therefore effectively bars Centros-type companies. Former real seat countries like Germany prohibit the export of company law even post-Centros. A Polish entrepreneur therefore cannot set up a Polish GmbH in Germany, but can set up a Polish Limited in the U.K. We are grateful to Theodor Baums for pointing this out to us.

within Germany. Note that the branch, as previously stated, is not a separate legal entity and not incorporated in Germany.

It is important to note that in the case of a German Limited this structure is legally identical but the economic implications are then reversed. This is because a German Limited is incorporated in the U.K. and since it has its real activities in Germany it must similarly register as a branch in Germany. However for a Centros-type Limited the *branch* is then the *sole* centre of economic activity, while the parent company—the private limited company incorporated in the U.K.—has *no* real activity. Economically, the branch is therefore the true parent company and the legal parent company is a legal shell without real activity. Since branches are not legal entities their registration typically is not strictly enforced. Casual observation of German Limiteds incorporated in the U.K. and their branch registrations in Germany suggests that only a fraction of companies do in fact register branches. Tentative information from various European business registers suggests that this holds for other European countries as well. The implication of this is that corporate mobility of Centros-type companies has a low probability of detection in home countries, since no information of the incorporation abroad may reach official sources in the respective home countries. In this study U.K. data therefore indirectly reveal far more extensive mobility patterns for all 25 E.U. States than direct data from all States would reveal.

In practice, we devise three measures of nationality. The first and the second measure define nationality through the geographic location of board control - the country of residence of the firms' directors. The first measure states that if a *majority* of the directors of a firm—excluding the company secretary—live in a country other than the U.K. the company is defined as coming from that country. The second measure requires *all* directors of a firm to live in one country other than the U.K.[15]

Obviously these director residence measures do not necessarily capture the centre of real activity of the firms, which is also not disclosed in U.K. Companies House filings. For large firms the place of residence of the directors and the real activities of the firm do not always coincide. All firms in our sample however are new registrations and mostly small firms. For such entities the real centre of activity is close to the place of residence of the directors. As a robustness check we construct a third set of nationality measures which additionally filter out foreign Limited companies that have only "virtual" registered offices in the U.K. These are postal addresses shared by

[15] Incorporation agents do function as company secretaries or as directors, and in some cases as both. By using the 'all director' definition we ex ante exclude all foreign Limiteds which have at least one U.K. director. Since this U.K. director may be an agent we are excluding all foreign Limiteds using a U.K. agent who functions as a director. The 'all director' definition therefore is a lower bound of actual foreign incorporations, as it classifies some companies as domestic although they are foreign. For the bulk of the German and the Dutch Limited companies we were able to establish a link with a German and a Dutch agent, which gives us even more confidence in our methodology and results.

hundreds, often thousands of companies. We propose that the registered offices of firms with real activities in the U.K. would much more likely be located at the place of real activity, not at postal addresses shared with thousands of other companies.[16]

To illustrate our methodology, consider the example of *Munich Stylist Limited*, a hairdresser's in Munich, Germany. The company was incorporated in the U.K. in December 2003.[17] The company has one director, residing in Bavaria and a company secretary based in the U.K. The registered office of the firm is at 59 Greenside Avenue in Huddersfield, one of the addresses used by German registration agents. All of this information is publicly available at Companies House via the company's registration number 04980253. In January 2005, Munich Stylist Limited had not yet registered a branch in the Bavarian company register. Under the directors' country of residence definitions, the virtual U.K. registered office and the formation agent definition we are able to identify *Munich Stylist Limited* as a German Limited.

We can also identify firms who have their real seat in Germany but whose activities are not confined to Germany. Consider, *Aktivplus Limited*, a producer of soy milk extractors. The company maintains a website in five languages but its operational base is Munich and it sells its products under German law. The company has registered a branch in Germany, at the place of residence of its sole director. The U.K. registered office is located at 39/40 Calthorpe Road in Birmingham, along with thousands of other German Limited companies. This address is maintained by the company secretary, *Go Ahead Services Limited*, another German Limited and the market leader in the German registration market. Again, under the directors' country of residence definitions, the virtual U.K. registered office and the formation agent definition we are able to identify *Aktivplus Limited* as a German Limited.

The main drawback of the directors' place of residence definition is that we are unable to make a direct distinction between the German Limited of the *Munich Stylist Limited* or *Aktivplus* variety on the one hand and U.K. subsidiaries of German companies or U.K. Limiteds that operate in the U.K. although the majority of directors live outside the U.K. on the other hand. Fortunately this imperfection has no practical consequences for our results. For one thing, for each Member

[16] As a fourth measure we experimented with telephone books. German Limited companies should have a telephone number in Germany but not in the U.K. Given the size of our dataset and the number of countries and years we cover, this approach was not practical. The most straightforward approach would have been to rely on the provisions of the 11th E.U. Company Law Directive on the disclosure requirements in respect to branches. As previously described, under the 11th Directive a German Limited has to register its real activity in Germany as a branch with the German company register. In practice we could not be sure that the branch was not created by a "real" U.K. Limited with real activity in Germany. Worse, an initial comparison between U.K. branches from the fully electronic Bavarian register and Companies House in the U.K. reveals that only a fraction of German Limited companies from Bavaria follow the provisions of the 11th Directive and register branches in the German register. Data from E.U. Member States' registers therefore again is no alternative to data from Companies House.

[17] The company drew wide attention to the legal migration phenomenon in Germany after being featured in the weekly *Der Spiegel* (27 September 2004).

State we construct time-series of legal migration to the U.K. from 1997 to 2005 and compare migration pre- and post-Centros. If the rate of subsidiary and branch formation in the U.K. has been constant over time, subsidiary formation cancels out in the pre- and post-Centros migration rate comparison. Second, subsidiaries of E.U. companies incorporated as Limiteds in the U.K. have much larger boards of directors than the Centros companies that we are looking at and the majority of directors of these companies operating in the U.K. usually live in the U.K. Our filtering consequently identifies subsidiaries as domestic Limiteds, not as foreign Limiteds. Third, we have direct evidence from the activities of registration agents that confirm the link between the change in registration rates and the ECJ judgements. In particular, the Dutch and German foreign firms use registration agents that do not cater to U.K. firms. It is unlikely that subsidiaries of German firms in the U.K. with real activities in the U.K. would report the "virtual address" of an agent to Companies House and not the physical address of its real seat. Finally, and most importantly, we find that the companies we identify as foreign in the post-Centros period overwhelmingly do not have a physical presence in the U.K. We take this as strong evidence that the economic centre of activity of these companies similarly is not the U.K. but in fact another country. We return to these issues in our discussion of the empirical results.

3.1.2 Timing of the Experiment

To analyse the impact of the ECJ econometrically, the timing of the Court's decisions is crucial. Table 1 provides an overview of the relevant ECJ rulings. As shown in Figure 1, we identify three periods relevant to our study: During the *pre-Centros* period (1997-1999) the real seat principle applied in most E.U. countries. During the *interim* period (2000-2002) it was not clear if the *Centros* decision was effective. Germany for example ignored the Court's decision and other countries, like the Netherlands, continued to impose restrictions on the registration of branches. Legal uncertainty was substantial. Finally, the post-*Überseering* period (2003-2005) begins after the ECJ confirmed that foreign Limited companies could operate freely in all 25 Member States and its position was widely recognized by courts in all Member States, including Germany and the Netherlands. The company registers in all E.U. countries received explicit instructions that branches from other E.U. countries should be registered unconditionally. After *Überseering* and *Inspire Art* the freedom of branching was firmly established.[18]

We therefore argue that the ECJ Centros ruling in 1999 did not have immediate impact on corporate mobility since it left many legal questions unresolved, for example whether the ruling

[18] In the case of Germany, from 2003 onwards we also observe an explosion in the number of local registration agents and aggressive media advertising citing the ECJ decisions.

would similarly apply to a company incorporated in a real seat country, such as Germany. Further, the ECJ decisions translated into national court rulings with a considerable time lag. With the ECJ's stance towards corporate mobility confirmed in the *Überseering* ruling in 2002 however, entrepreneurs and investors were finally assured that incorporating companies in one E.U. country while operating in another would not consequently be declared illegal by national courts. We would therefore expect a regulation effect on corporate mobility for the post-Centros period from 2003 onwards, but not for the pre-Centros period.

3.2 Sample Construction and Summary Statistics

We study all new incorporations of limited liability companies in the U.K. between 1997 and 2005. We choose the U.K. because it has always applied the incorporation principle, because it has the simplest incorporation procedures and the lowest cost of incorporation in the E.U. The U.K. also has a large number of incorporations from outside the E.U., our control group, and a central company register.

All U.K. firms are required to file information at a central depository called Companies House in Cardiff, Wales. Companies House, an executive agency of the U.K. government, retains complete records on all firms that are still in existence but over time discards information on most but not all dead companies. Companies House is also responsible for enforcing the filing requirements of firms. The raw data distributed by Companies House is transformed into machine readable format by Jordans, a commercial data vendor in Bristol. The Jordans data are further processed and distributed by Bureau van Dijk in Brussels through its FAME database.

Using back issues of FAME we construct a panel of all limited liability firms incorporated in the U.K. between 1997 and 2005. The procedure we use is described in detail in the Appendix and summarized here. We construct a series of cross-sections of firms that are or were registered at Companies House from nine consecutive issues of FAME. For a number of reasons the FAME disks do not contain the population of newly incorporated firms for each year. Individual FAME issues contain only data on certain years, there is an inclusion delay, some newly registered companies are never included, companies that do not file accounts start getting excluded after 22 months and for some companies data is simply missing. We close the gap by computing correction factors based on a comparison between FAME and total incorporation numbers from Companies House assuming the FAME data is missing at random.[19] The database construction is documented in detail in Appendix A.

[19] Exclusion is very likely not to be random, but since we consider companies at the time of their incorporation this is not a serious concern. It does mean, however, that we cannot perform a meaningful survival analysis.

The range of countries reported in director home addresses is large. For practical purposes we limit the number of nationalities for our limited liability companies to 139 by working downwards though a country list sorted by GDP at current dollar prices in 2004. The remainder is pooled under one country code "rest of the world".

Financial accounts are not available for most of our sample firms. This is because Companies House requires the first accounts of companies to be filed within 22 months of incorporation for private companies and 19 months for public companies. Since our data is truncated in December 2005, financial reports are truncated roughly in March 2004 and the majority of our sample firms have not yet filed their first accounts. We find however that even among those companies that would have had to file, financial reports are usually not available from FAME. Unfortunately the data do not allow us to systematically verify whether this violation of the filing provision results in the company being struck of the company register, as it should according to U.K. regulations.

To estimate the impact of the costs of regulation on corporate mobility we also collect data on the different types of incorporation costs for all 25 E.U. countries. We collect information about minimum capital requirements, setup costs, setup times and the number of incorporation procedures for the 25 E.U. countries from a number of European law firms, the World Bank Doing Business database (2005), which extends the data provided by Djankov et al (2002), the EVCA (2004) European Business Environment study and relevant web pages. We record minimum capital requirements as well as minimum paid-up capital—the minimum capital necessary to be paid in at time of incorporation—in all E.U. countries for the smallest possible private limited company. Regarding deadweight setup costs, we use two alternative measures. First, we use the upper bound of setup costs reported in EVCA (2004), which are typical setup costs for private limited companies resulting from taxes, duties and notary fees. Second we use official setup costs scaled over income per capita as reported in the World Bank database. Regarding the delay of the incorporation process, we again use two alternative measures. First, we use the upper bound of the time to complete the incorporation process reported in EVCA (2004). Second, we use the mean time to complete all procedures necessary for incorporation reported in the World Bank database. We also use the number of procedures itself, that an entrepreneur has to complete to incorporate a firm. Finally, we use GDP and population data from the United Nations National Accounts Main Aggregates Database as scaling variables.

Table 2 reports summary statistics for the sample. In total there are 2.14 million newly incorporated limited liability firms in our final sample, with 4.25 million directors and 3.09 million company secretaries (Table 2, Panel A). This yields a total of 2.81 million addresses. We process all addresses as much as possible automatically to determine the country of residence from the

information provided in the address. If country information is missing we use city names or postcodes to determine the country. We apply this manual approach to every single unidentified address in the sample. In return we are able to determine the country in 99.85 percent of all cases, leaving only 3,934 out of 2.81 million addresses unidentifieable.

Not surprisingly, most directors reside in the U.K., followed by Germany, the US, France, the Netherlands and Cyprus. The number of new public limited companies is 7,667 and very small compared to the number of new private limited companies.

The median private limited company is small and has two directors and one company secretary residing in the same country (Table 2, Panel B). Public limited companies have slightly larger boards, with the median Public Limited having 3 directors and one company secretary, who again typically reside in the same country.

4 Empirical Results

In this section we report the empirical results of our study. We begin by reporting raw counts of Centros-type incorporations in the U.K. from other E.U. Member States between 1997 and 2005 for private limited companies and confirm the robustness of our company nationality definition. We then perform three sets of econometric tests. The first set compares mean and median incorporation rates for the same country of origin for the pre- and post-Centros periods. We expect to find a significant change in the incorporation rates in the U.K. from E.U. countries, but not from other countries. While informative, these tests cannot distinguish between global changes in Limited incorporation in the pre- and post-Centros periods and changes that were induced by the ECJ rulings. The second set of tests addresses this problem by comparing the difference in E.U. incorporation rates to the difference in non-E.U. incorporation rates, a differences in differences test with an untreated comparison group (Meyer (1995)).[20] The third set of tests relates minimum capital, setup costs and other incorporation parameters to changes in corporation rates.

4.1 The Evolution of Corporate Mobility

We begin the analysis by reporting the best estimate we can provide of the actual number of foreign Limiteds that were newly incorporated in the U.K. between 1997 and 2005 from all E.U. Member States. As defined in the previous section, we consider a company to originate from a particular Member State if the majority or all of its directors reside in that Member State. Throughout this

[20] Previous applications in the law and in the finance literature are for example Kortum and Lerner (1999) and Garvey and Hanka (1999). An overview of applications is provided by Bertrand, Duflo and Mullainathan (2004).

section we report the results for all 24 E.U. countries, including the ten Accession Countries that joined the E.U. effective on 1 May 2004, plus Norway.[21]

Table 3 reports the results for new foreign private limited companies. Correction factors using Companies House aggregate data are applied as previously described. The table shows that private limited companies exhibit a high degree of corporate mobility and firms from other Member States are incorporated in the U.K. in large numbers, with pronounced yearly increases mostly from 2002 onwards. Absolute numbers are largest for Germany, the Netherlands and France. For example, using the majority of directors definition, in 1997 only 258 German Limiteds were incorporated in the U.K., rising to 950 in 2002 and sharply increasing to 9,618 in 2004 and over 12,000 in 2005. In contrast, while absolute numbers in France are high, the increase is much less pronounced. As we explain in more detail later, France undertook a reform of its private limited company act in 2003. The dampened growth in the incorporation flow from these countries to the U.K. may therefore be evidence of the effects of regulatory competition, a hypothesis we address later.

In contrast, our evidence shows that Public Limiteds are not subject to corporate mobility. A table similar to Table 3 but for public limited companies is available from the authors. It shows that no E.U. Member States incorporates significant numbers of public limited companies in the U.K., with an average of 1.3 companies per year per country. In most years all countries report zero public limited companies incorporated in the U.K. Also, incorporations do not change over time. The small numbers of observations preclude any meaningful statistical analysis and we therefore limit our analysis mostly to private limited companies.[22]

4.2 Robustness

The previous analysis shows significant outflows of private limited companies to the U.K. from a number of E.U. Member States. We previously defined a foreign Limited as a company that has its directors and owners residing in a country other than the U.K., its main centre of activity in that country but is incorporated in the U.K. as a private limited company. One possible objection to the analysis is that we are placing considerable weight on the physical location of directors. It could be that our methodology is picking up significant numbers of firms where the directors do not live in

[21] The accession process has extended the applicability of the Centros decisions to the new Member States. The ten accession countries are the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia. The accession treaty was signed in Athens on 16 April, 2003. Norway is included due to its European Economic Area country status, which makes the Centros rulings similarly applicable.

[22] One explanation for this could be that the U.K. does not offer attractive terms for incorporating a public limited company. As Table 6 shows, for example minimum capital requirements are high compared to other countries, making Cyprus or Luxembourg more cost effective countries of incorporation. We cannot test this proposition as we do not have comparable firm-level incorporation data for these countries.

the U.K. but the firm still has its main centre of activity in the U.K. These would most likely be subsidiaries of foreign firms which are not the Centros-type companies we are interested in. We resolve this by showing in the following that the vast majority of foreign firms incorporated in the U.K. following the Centros rulings in fact do not have a physical presence in the U.K.

We verify whether the companies we identify as foreign Limiteds in fact have a physical presence in the U.K. as follows. Our approach is a purely mechanical one of identifying clustering. Independently of how conservatively we define address clusters, the analysis yields the result that the foreign Limiteds we previously identify as coming from E.U. Member States indeed are Centros-type firms and overwhelmingly lack a physical presence in the U.K.

We analyze all sample firms by their primary address. We find that firm addresses are not unique, but instead often are used by hundreds, if not thousands of other firms as well. While it is of course possible that two firms in our sample have exactly the same address—for example, if a firm died and another firm moved into the offices later or if the address signifies a business park or large commercial estate—it is very unlikely that if more than a dozen or even hundreds of firms have the identical primary address, that these addresses correspond to businesses with real economic activity. Our initial and very conservative definition therefore is that a firm lacks a physical presence if its primary address is an address used by at least 100 firms with different registration numbers. We reduce the necessary cluster size to 50 and 20 firms at the same address consequently. We then condition identifying an E.U. Limited not just on the directors place of residence but additionally on being incorporated at an address cluster.

In a further step we manually look up who is behind the largest address clusters and find that in most cases the addresses belong to incorporation agents. To illustrate this approach, we produced a frequency table of all registered office address in our database (approximately 2.2. million). The most common address was "Ground Floor Broadway House, 2-6 Fulham Broadway, Fulham, London, SW6 1AA". After taking into account spelling mistakes and shorter versions, this is the registered office address for 23,273 companies in our sample and belongs to the incorporation agent 1st Contact.[23] The addresses "39/40 Calthorpe Road, Birmingham, West Midlands, B15 1TS" and "69 Great Hampton Street, Birmingham, West Midlands, B18 6EW" are used by the leading German incorporation agent, Go Ahead Limited. Table 8 provides an overview of large incorporation agents that we identify in this way.

[23] The largest address cluster in our sample is "Gabem Group, Waterside, Petworth, West Sussex, GU28 9BP". This address belongs to the company *Gabem Group* which is not an incorporation agent and has registered 46,847 firms at this address. We exclude Gabem Group from the sample in the clustering analysis as it distorts the true concentration measure of U.K. firms.

The results reported in Table 4 show yearly percentages of foreign private limited liability companies that are located at address clusters. The first three columns use the "majority of directors" criterion for identifying the nationalities of companies, the last three columns use the "all directors" criterion. Panel A reports yearly cross-sectional averages for E.U. countries plus Norway, Panel B reports domestic U.K. firms. Panels C and D report pre-and post-Centros averages. To illustrate reading the table, the first line in the first column in Panel A shows that of all those private limited companies incorporated during the year 1997 in the U.K. and identified as coming from an E.U. country using the majority of director criterion, 37.25 percent had firm addresses which were used by at least 19 other firms in the sample.

The results from Panel A show a very consistent pattern, independent of which of the six possible combinations of criteria we use. It is that pre-Centros the *majority* of E.U. companies incorporated in the U.K. do have a physical presence in the U.K. Post-Centros however, there is strong evidence of the reverse, i.e. only a *minority* of E.U. companies incorporated in the U.K. have a physical presence in the U.K. The test statistics in Panel C show that using specifications there is always a highly significant increase in the percentage of firms that do not have a physical address in the U.K. from the pre-Centros to the post-Centros period.

As a further robustness test, we report similar clustering results in Panels B and D for *U.K.* Limiteds, i.e. firms which we identify as being of British nationality with our methodology. The pattern differences are striking. While U.K. Limiteds similarly use clustered addresses, they do so to a much lower extent and, although significant, the increase in non-physical addresses over time is much less pronounced.

A direct confirmation of the robustness of our method for the Netherlands and Germany comes from the incorporate agent analysis. Table 8 shows that the U.K. based agents were active well before 2003. The German and Dutch agents only entered the incorporation market in 2002/2003. In addition, U.K. agents like Formationshouse offering services in several languages experienced a significant increase in incorporation numbers in the post-Centros period. The final confirmation comes from the agents' web-sites. The agents from outside the U.K. explicitly refer to the ECJ rulings. The domestic U.K. agents do not.

4.3 Corporate Mobility Pre- and Post-Centros

In the following we analyze whether the Centros rulings have had a significant impact on incorporations. We address several questions. First, is there a significant increase in the outflow of

companies from E.U. Member States to the U.K. following the Centros rulings? Second, is this increase actually caused by Centros, i.e. is the change confined to countries to which the Centros ruling applies? Third, are these results economically significant and statistically robust? We provide answers by using a differences-in-differences approach and determine the outflows of foreign Limiteds to the U.K. pre- and post-Centros from around the world and contrast the E.U. with the rest of the world. We break down the sample into the three time periods described in the previous section, and compare the pre-Centros and the post-Centros cohorts of firms from around the world. We expect a regulation effect for the post-Centros period, but not for the pre-Centros period.

Figure 2 reports cross-sectional averages and medians by year of incorporation for E.U. Limiteds and Limiteds from the 30 largest non-E.U. economies. Both graphs show that while there is a positive time trend in foreign Limiteds both from the E.U. and other countries, the E.U. States show a strong growth pattern beginning in 2002, which is not experienced by other countries. If we use all countries in our sample as the benchmark for the E.U., the differences in time trends become even larger.

We estimate formal differences in differences as

$$\log(y_{it}) = \beta_0 + \beta_1 EU25 + \delta_0 PostCentros + \delta_1 EU25 \cdot PostCentros + \gamma_0 Accessioncountry + \varepsilon_{it}, \quad (1)$$

where the dependent variable y_{it} is one of six different measures of the annual number of incorporations from any country. We use a log-level functional form. EU25 is a dummy variable which equals 1 for all E.U. Member States and 0 for all other countries, excluding the U.K. PostCentros is a dummy variable which equals 1 for the post Centros period (2003-2005) and 0 for the pre-Centros period (1997-1999), accession country is a dummy variable and equals 1 if the origination country became a E.U. Member in 2003, 0 otherwise.

The results of the formal regression analysis are shown in Table 5. In columns (1) to (3) the dependent variable is the mean number of incorporations calculated both pre- and post-Centros for every country. In column (1) this variable is used unscaled, in columns (2) and (3) it is scaled over GDP (in billions of USD) and population figures (in millions) for all years, respectively. Columns (4) to (6) use the median instead of the mean number of incorporations but are otherwise identical. Means and medians are calculated for the Pre-Centros (1997-1999) and the Post-Centros (2003-2005) period. Countries of origin are identified both by the "majority of directors" (Panel A) and the "all directors" criterion (Panel B). All country means and medians are based on adjusted panel observations using correction factors as in Table 4. The coefficient for the interaction term, $EU25 \cdot PostCentros$, is an estimate of the change in incorporations experienced by an E.U. country as a difference from the change for all countries around the world, i.e. the differences-in-differences

estimate. The non-E.U. country group is sufficiently large to be a valid benchmark in this specification as the sample consists of roughly 40 percent non-E.U. companies.

The analysis yields two main results. First, incorporations from E.U. countries are higher than incorporations from the rest of the world. The difference is always significant at the 1 percent level or better, with the exception of the GDP-scaled specifications. Second, and more importantly, incorporations from E.U. countries *increase* significantly *more* post-Centros than incorporations form the rest of the world. The difference always has the expected positive sign and is significant in six cases. The second result clearly confirms the deregulatory effect of Centros on cross-country incorporations. E.U. Member States incorporate significantly larger numbers of Limiteds in the U.K. following the ECJ rulings, while a similar effect cannot be detected for countries to which the Centros rulings do not apply.[24] The Centros effect on E.U. incorporations is also economically significant. Coefficient estimates for the interaction term range between 0.144 and 1.028. Therefore incorporations from all E.U. Member States, for example in column (1) of Panel A, increase by 69.8 percent from the pre-Centros to the post-Centros period.

4.4 The Determinants of Corporate Mobility

What drives corporate mobility in the E.U.? In this section we begin by providing an overview of what should *not* drive mobility, namely all parameters of a Centros-type Limited which do *not* change upon incorporation in the U.K. We then identify the motives that seem to be driving entrepreneurs from the E.U. to incorporate Centros-type Limiteds in the U.K.

To begin with, corporate mobility of the Centros type generally has no tax consequences. An E.U. Limited becomes liable to tax in the U.K. with its worldwide income upon incorporation. Double taxation agreements between the U.K. and all E.U. countries however rule that if the permanent establishment of the firm is in its home country and it generally has no economic contact with the U.K., the firm is taxed in its home country only. The firm has to file a zero tax return in the U.K. or to apply for exemption from filing for having a non-resident status. For example, a German Limited is therefore taxed identically to a German GmbH company and subject to corporate tax, business tax and value added tax in Germany. Using a German Limited there has no tax consequences. On the other hand, it is plausible that foreign Limiteds are precisely set up to circumvent tax payments in both countries. More generally, it is plausible and confirmed by

[24] We do not exclude Norway, Liechtenstein and Iceland from the analysis and treat them as "rest of the world". Since these countries belong to the European Economic Area and the Centros rulings apply to them identically, the results are, if anything, biased *against* detection of an E.U. effect.

anecdotal evidence that foreign Limiteds may be incorporated in the U.K. for purposes of fraud and tax evasion.[25]

Similar rules apply in cases of insolvency or personal liability. That is, incorporation in the U.K. does not generally change the fact that legislation of the jurisdiction in which the company operates applies. According to the European Insolvency Regulation, foreign Limiteds have to file for insolvency in their home country. A company without economic activity in the U.K. therefore will not fall under U.K. insolvency regulations. For example, insolvency of a French Limited would be handled according to French insolvency law.

Also, country-specific regulation of firms cannot be easily circumvented by using a foreign Limited. For example, most relevant codetermination rules in Germany apply to all companies with a permanent establishment in Germany, independently of how or where the company is incorporated.[26]

We show that what *does* matter for corporate mobility are the large differences regarding minimum capital requirements, setup costs, time to obtain legal status and potentially similar variables. We test the hypothesis that corporate mobility is driven by these variables.

The differences in minimum capital requirements and typical setup costs are considerable between E.U. Member States. Table 6 reports minimum capital requirements and paid-up capital requirements (the amount of capital that must be paid up upon registration of the company) as well as typical setup costs for private and public limited company types for E.U. Member States. For private limited companies, the countries with the highest minimum capital requirements are Austria, Belgium, Denmark, Germany, Greece and the Netherlands. No minimum capital requirements on the other hand exist in Cyprus, France, Ireland, and the U.K. Setup costs for private limited companies are highest in Austria, Denmark, Italy, Luxembourg and Slovakia, and lowest in Finland, France, Hungary and the U.K. Setting up a private limited company in Austria therefore requires 38,500 Euro, of which 3,500 are a deadweight loss of incorporation. Achieving the same legal structure in the U.K. just requires 427 Euro, of which only 425 are deadweight incorporation costs. The only other similarly inexpensive country is France, where 451 Euro are required to achieve

[25] For example, Dutch incorporation agents' websites seem to suggest that tax payments can be reduced for incorporations of Limiteds via Cyprus.

[26] There are two parts of codetermination in Germany, usually confused in the literature. A-type codetermination ("betriebliche Mitbestimmung") is tied to having a permanent establishment in Germany with more than 5 employees. Centros does not affect A-type codetermination. B-type codetermination ("unternehmerische Mitbestimmung") is tied to the legal form of a company and the number of employees. A GmbH company with more than 2000 employees has to admit half of all supervisory board members from the ranks of employees. Whether a Centros-type German Limited would still be subject to B-type codetermination is currently unresolved.

legal status of limited liability. In summary, cross-country differences in incorporation costs are large even within the E.U. This confirms previous evidence by Djankov et al (2002).

For public limited companies a different ranking emerges. High minimum capital requirements exist for companies in Finland, Hungary, Italy, Poland and the U.K., low minimum capital requirements exist in Cyprus, Estonia, Luxembourg, Slovakia, Slovenia. The U.K. therefore is a relatively unattractive country for incorporating a public limited company. Our result of essentially no foreign public limited company incorporations in the U.K. confirm this.

To assess the importance of these incorporation variables on the mobility of firms we re-run the regressions from Table 5. We now however decompose the Centros effect into two components. The first component is the difference in differences due to the Centros rulings which applies to all E.U. countries. The second component is the difference *between* high- and low-cost countries, which we determine using incorporation cost data on the country level. In other words, we test whether the post-Centros increase of foreign Limiteds that we detect among E.U. countries is conditional on whether the originating country is a low-cost or high-cost jurisdiction. If the ECJ rulings have induced a shift in new incorporations towards low incorporation cost countries, we would conversely expect the post-Centros increase to be higher for high-cost countries than for low-cost countries. Our previous sets of tests already have established that incorporation rates from E.U. countries increase following Centros while they do not for other countries. In this step we now verify whether the magnitude of the Centros effect is attributable to the various incorporation cost variables.

To do this we divide foreign Limiteds from the E.U. into whether they originate in high- or low cost countries. High-cost countries are defined as countries, were incorporation costs are above the E.U. median for the eight cost variables we consider—minimum capital requirements *(min cap)*, minimum paid-up capital *(cap paid)*, incorporation costs from EVCA (2004) *(cost1)*, incorporation costs scaled by income per capita from World Bank (2005) *(cost2)*, minimum capital plus incorporation costs *(min cap+cost1)*, time to obtain legal status from EVCA (2004) *(time1)* and from World Bank (2005) *(time2)* as well as the number of procedures an entrepreneur must complete to obtain legal status of the firm *(procedure)*. For all eight cost variables we estimate the following specification:

$$\begin{aligned}\log(y_{it}) = \beta_0 \quad & + \beta_1 HIGH + \delta_0 PostCentros \cdot HIGH \\ & + \beta_2 LOW + \delta_1 PostCentros \cdot LOW + \gamma_0 Accession\,country + \varepsilon_{it}\end{aligned} \tag{2}$$

The dependent variables in the regressions again are the six different measures of foreign Limiteds from around the world incorporated in the U.K. pre- and post-Centros. The HIGH (LOW)

dummy variable equals 1 if the respective cost variable is above (below) the E.U. median of that cost variable. The regressions include two interaction terms of Centros with the HIGH, LOW dummies. The base case is therefore pre-Centros incorporations from non-E.U. countries. The results are reported in Table 7. Panels A to C use the "majority of directors" criterion, Panels D to F use the "all directors" criterion. To illustrate reading the table, in the first column, the HIGH dummy is equal to one for firm observations originating from a E.U. country where minimum capital requirements are higher than the E.U. median. The LOW dummy is equal to one for firm observations originating from a E.U. country where minimum capital requirements are lower than the E.U. median. In the second column the HIGH, LOW dummies refer to paid-up capital and so on.

If corporate mobility is indeed driven by cost of incorporation considerations, we would expect the interaction term *(Centros) x (HIGH)* to be significantly different from zero but not the interaction term (*Centros*) x (*Low*). In other words, following the Centros rulings we expect high outflows of firms from those countries where local regulations require high minimum and paid-up capital, where setup costs are high, where the waiting time to obtain legal status is long and the number of procedures is high. Conversely, we expect only small or no increases in outflows of firms from those countries where local regulations regarding minimum capital are low, where setup costs are reasonable and where the waiting time to obtain legal status is short. Of course, entrepreneurs will consider other variables such as legal uncertainty, language barriers or possibly the scope for going under the radar screen of local tax authorities and the like when deciding where to incorporate. Further, these considerations will very likely vary substantially between countries and firms. We can therefore think of a number of reasons why this analysis could be a relatively weak test.

The results however show that in almost all specifications the coefficient for the *(Centros) x (HIGH)* interaction term is larger than the (*Centros*) x (*LOW*) term and the first term is usually significant while the second is not, although an F-test (not reported) cannot reject the hypothesis that the coefficients have the same size in most regressions, indicating the lack of power of the test. The *HIGH* coefficient on the other hand usually is smaller than the *LOW* coefficient. This suggests that while incorporations from high-cost countries pre-Centros are actually *lower* than from low-cost countries, they rise to *higher* levels post-Centros. The stronger increase to higher levels exactly confirms the predictions of higher outflows from high-cost countries following the Centros rulings. The exception is the sorting on incorporation costs, which is almost always insignificant for high- as well as for low-cost countries. This suggests that either formal incorporation costs do not explain the decision to incorporate in a foreign jurisdiction or that our cost variables are too noisy to capture

the true monetary deadweight costs of incorporation.[27] Still, the results for the combined variable of minimum capital plus setup costs are in line with the previous results. The results hold even if we use country medians scaled by GDP or scaled by population and for both the "majority of directors" and the "all directors" criteria. Finally, we also run all regressions using country means instead of medians. The results (not reported) are very similar, i.e. although we lose significance for some of the *HIGH* interaction term estimates due to greater standard errors, the size of the coefficient estimates for the interaction term in almost all cases again is larger for high-capital, high-cost and long-waiting time countries.

4.5 Regulatory Responses

We find evidence of regulatory competition. Germany and the Netherlands, the two countries with the largest outflows, are responding to the U.K. Limited challenge: the German government is preparing to reform German company law to allow founders to set up companies under German law on U.K. limited terms. Similarly in the Netherlands a fundamental review of the private limited (B.V.) law is under way in its Parliament. The Dutch consultation documents explicitly state the necessity to compete with more attractive U.K. company law and incorporation procedures: "the [reformed] Dutch private limited company must take on the competition with foreign legal forms." [28] In contrast, France dropped minimum capital requirements in 2003 and has experienced much lower outflows. A 2003 corporate law reform allows entrepreneurs to freely choose the minimum capital of a French limited company (SARL).[29] The previous requirement was €7,500. As a result, the number of new SARL with less than €7,500 in the Paris area increased from 1.69% of new SARL registrations in August 2003 to 31.1% in August 2004, or 20.9% over the year. In the calendar year 2005 the rate was 36.6%. Interestingly only 4.9% of these SARL were set up with a minimum capital of €1; the vast majority was set up with a capital of €501-1000 (25.7%), €1001-

[27] It is frequently argued that the costs of the initial incorporation process—which are used in the analysis—are only a small fraction of the present value of all expenses related to maintaining the legal status of a firm over its lifetime. Our results suggest that this may be true. Although meaningful estimates of the total costs of formally maintaining a company over its lifetime do not exist for any country, the result of little or no explanatory power of initial incorporation costs may indeed result from their small size relative to the total present value of "company maintenance" costs.

[28] See www.justitie.nl/themas/wetgeving/dossiers/BVrecht/Information_in_English.asp (consulted on 6 November 2005).

[29] *Loi pour l'Initiative économique* of 1 August 2003.

3000 (27.4%) or €3001-7500 (28.8%).[30] Notwithstanding the fact that member states do not levy franchise fees on incorporations, they are responding to corporate mobility by lowering the costs of incorporation. Domestic incorporation is *per se* perceived to be important even if it does not bear directly on government revenues or the location of production or control.

5 Conclusions

This paper analyzes the effects of deregulation on corporate mobility within Europe. Using data on over 2.14 million newly incorporated U.K. companies it provides evidence of a significant inflow of private limited companies from all E.U. Member States into the U.K.

The paper shows that the ECJ rulings have had a dramatic effect on the legal geography of new company formation, as the number of private limited companies from all Member States incorporating in the U.K. per year has increased from 3.460 firms pre-Centros to 22,970 firms post-Centros, an increase of 560 percent. Between 1997 and 2005 almost 78,000 of these foreign private limited companies were incorporated in the U.K., of which Germany alone accounts for 26,700 firms, where aggressive marketing by registration agents continues to emphasize the comparative benefits of incorporation in the U.K.

What are the benefits of incorporating in the U.K. and what drives corporate mobility within Europe? We find that minimum capital requirements specific to the individual Member States directly influence the outflow of companies from that country to the U.K. In particular, using a cross-sectional model we find that much of the variation in the change between pre- and post-Centros flows of firms from Member States to the U.K. is explained by direct and indirect costs of national incorporation procedures. The stronger enforcement and disclosure standards in the U.K. as well as potential legal uncertainty and language barriers seem to be unimportant in comparison for the large numbers of firms utilizing the freedom of incorporation within Europe provided by the ECJ rulings. Corporate mobility is mostly confined to the smallest companies. Paradoxically, it is therefore companies with a largely domestic outlook in their real activities that choose to be internationally mobile.

Our findings are consistent with micro-evidence from the entrepreneurship literature suggesting that financing constraints are a major impediment to small business formation. In support of this hypothesis we find that for example relatively small differences in minimum capital requirements make a large differences in the rate of new company formation. The transaction costs associated with foreign incorporations are substantially reduced by intermediary agencies and

[30] See *Création et pérennité des SARL à libre capital à Paris Août 2003-août 2004 : le greffe tire le bilan, Tribunal de Commerce de Paris,* and *Observatoire des SARL « Initiative économique ». Bilan de l'année 2005, Tribunal de Commerce de Paris 2005.*

indirect costs of incorporation such as the number of procedures to be completed and the time to obtain legal status similarly drive the decision to incorporate abroad.

Countries are responding to the migration of new incorporations to the U.K. by lowering or abolishing minimum capital requirements and the cost of setting up a domestic limited liability company more generally. This race to match U.K. standards seems to have characteristics of the regulatory competition that the U.S. corporate mobility literature has been emphasising, although the phenomena that this paper documents are very different from corporate mobility and the competition for corporate charters within the US. First, the corporate mobility that we observe relates to new company formation, not to established companies and, second, entrepreneurs are not seeking to take advantage of specific features of U.K. company law, as seems to be the case when companies migrate to Delaware from other U.S. states. Instead, the formation agents used by Centros-type companies offer boiler plate contracts and migration is driven by differences in the regulation of new company formation rather than by specific differences in company law.

The motivation of E.U. national governments also differs from the motivation of Delaware in the U.S. E.U. Member States are not reforming company law and the rules governing domestic company formation to avoid the loss of franchise tax or related revenues to the U.K. Rather, the governments of France, Germany and the Netherlands are either implementing reform because they want to stimulate small business formation and entrepreneurship in their respective countries or to avoid the loss of jurisdictional control of substantial parts of their economies. Furthermore, U.K. rules of incorporation were implemented pre-Centro so that they initially just affected domestic entrepreneurs and not those in other E.U. Member States.[31] Since the U.K. has no obvious reason to compete for incorporations with other E.U. Member States, our analysis therefore suggests that new incorporations from Germany and the Netherlands in the U.K. should decline once equivalent regulation is introduced in those countries.

[31] There is a concern however, that there are institutions outside the scope of corporate law that are essential for the U.K. system to work but are absent from other Member States. If this is the case there could be a regulatory gap and market failure.

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Table 1. Timeline of European Court of Justice Decisions on Corporate Mobility

Label	Date	Case	Content
"Daily Mail"	27 Sep 1988	Case 81/87, The Queen v. H. M. Treasury and Commissioners of Inland Revenue, ex parte Daily Mail and General Trust plc.	Freedom of establishment has no influence on the applicability of the Member States' company law.
"Centros"	09 Mar 1999	Case C-212/97, Centros Ltd. v. Erhvervs- og Selskabsstyrelsen	Centros Ltd., incorporated in the U.K., cannot be denied registration in the Danish Business Register on the grounds that the company operates entirely within Denmark and is incorporated in the U.K. only to circumvent stricter Danish incorporation requirements. ECJ rules that a branch office must be allowed to register in Denmark even if the branch amounts to the complete operation of the firm, without the firm having to incorporate in Denmark. That the legal arrangement is intended to circumvent Danish minimum capital requirements is not relevant.
"Überseering"	05 Nov 2002	Case C-208/00, Überseering B.V. v. Nordic Construction Company Baumanagement GmbH (NCC)	Überseering B.V., incorporated in the Netherlands, operates in Germany and is rejected as a plaintiff by German courts on the grounds that a Dutch company lacks legal capacity in Germany. BGH referred the company's appeal to the ECJ for guidance. ECJ rules that the company must not be denied legal capacity when the only possible forum is a German court.
„Inspire Art"	30 Sep 2003	Case C-167/01, Kamer von Koophandel en Fabrieken voor Amsterdam v. Inspire Art Ltd.	Inspire Art Ltd. is incorporated in the U.K., but operates in the Netherlands. The Dutch Government upholds that while the company can legally operate in the Netherlands, it must adhere to legislation in place for formally foreign companies, which among other requires that directors are personally liable if the firm has minimum capital below the minimum capital requirement for Dutch firms.

Table 2. Summary Statistics, 1997-2005

Panel A summarizes characteristics of the total sample on the level of individual directors and company secretaries. Panel B summarizes characteristics of the total sample on the level of firms. Sample size (N) differs between directors and company secretaries on the firm level due to the exclusion of individual directors and company secretaries where the individual (i) has not been appointed in the year of incorporation or (ii) has resigned in the year of incorporation.

Panel A: Total sample characteristics	
Total number of individuals (in million)	7.346
of which directors (in million)	4.253
of which company secretaries (in million)	3.093
Total number of addresses (in million)	2.809
Country unidentifiable from address data	3,934 (0.14%)
Number of countries	139
Ten most frequent countries (descending)	United Kingdom, Germany, United States, France, Netherlands, Cyprus, Norway, Republic of Ireland, Norway, Switzerland, Italy
Ten least frequent countries (ascending)	Brunei Darussalam, Trinidad and Tobago, Anguilla, El Salvador, Kazakhstan, Mozambique, Guatemala, Myanmar, Angola, Honduras
Total number of limited liability firms (in million)	2,137,562
of which public limited firms (in thds)	7,667

Panel B: Firm characteristics

	Private limited companies					Public limited companies				
	N	**Mean**	**p50**	**Min**	**Max**	**N**	**Mean**	**p50**	**Min**	**Max**
No of directors	2,097,399	2.014	2	1	80	7,465	3.832	3	1	23
No of company secretaries	2,062,948	1.49	1	1	8	6,949	1.556	1	1	6
No of director nationalities	2,097,399	1.036	1	1	10	7,465	1.186	1	1	5
Director nationality Herfindahl index	2,097,399	0.9841	1	0.125	1	7,465	0.935	1	0.22	1

Table 3. New Private Limited Companies By Country

This table reports new incorporations of private limited companies in the U.K. from all 25 E.U. Member States except the U.K. Firm observations satisfy the requirements described in Table A1. Incorporations from country *x* count the number of firms where *the majority* of directors resides in country *x*. Incorporations in parentheses from country *x* count the number of firms where *all* directors reside in country *x*. Observations for individual directors satisfy the requirements described in Table A2. Correction factors for sample attrition and truncation are applied as described in Table A3.

Year	Majority of directors from country *x*	All directors from country *x*	Majority of directors from country *x*	All directors from country *x*	Majority of directors from country *x*	All directors from country *x*	Majority of directors from country *x*	All directors from country *x*	Majority of directors from country *x*	All directors from country *x*
	Austria		Belgium		Cyprus		Czech Republic		Denmark	
1997	31	(22)	116	(85)	144	(120)	22	(9)	59	(26)
1998	19	(13)	144	(87)	194	(154)	15	(8)	42	(31)
1999	43	(30)	169	(109)	673	(568)	32	(19)	71	(54)
2000	31	(15)	121	(56)	936	(657)	39	(17)	60	(20)
2001	77	(11)	199	(13)	864	(353)	33	(5)	201	(5)
2002	99	(21)	219	(57)	985	(422)	38	(8)	515	(259)
2003	142	(75)	282	(124)	872	(452)	54	(31)	957	(896)
2004	371	(292)	330	(204)	801	(519)	67	(33)	196	(97)
2005	609	(514)	458	(346)	959	(646)	89	(63)	248	(179)
	Estonia		Finland		France		Germany		Greece	
1997	0	(0)	9	(4)	1,061	(805)	258	(169)	72	(50)
1998	4	(0)	23	(8)	1,337	(1,042)	279	(179)	121	(94)
1999	0	(0)	11	(2)	1,431	(1,031)	277	(165)	120	(88)
2000	5	(5)	7	(3)	1,342	(764)	233	(104)	78	(37)
2001	6	(0)	23	(4)	1,175	(212)	516	(100)	74	(6)
2002	6	(0)	11	(2)	1,235	(241)	950	(354)	105	(23)
2003	9	(2)	21	(12)	1,269	(400)	2,516	(1,753)	113	(36)
2004	14	(6)	11	(7)	1,378	(682)	9,618	(8,702)	91	(35)
2005	27	(16)	21	(12)	1,666	(937)	12,019	(11,035)	120	(76)
	Hungary		Ireland		Italy		Latvia		Lithuania	
1997	2	(0)	188	(96)	427	(302)	4	(0)	7	(7)
1998	4	(2)	296	(160)	433	(279)	0	(0)	0	(0)
1999	7	(2)	410	(210)	513	(334)	7	(6)	2	(2)
2000	2	(0)	264	(106)	419	(199)	9	(5)	2	(0)
2001	18	(2)	257	(49)	319	(50)	13	(0)	13	(1)
2002	6	(2)	287	(67)	348	(46)	16	(4)	18	(2)
2003	31	(18)	330	(81)	405	(121)	13	(8)	25	(23)
2004	33	(26)	365	(105)	408	(168)	16	(6)	24	(20)
2005	63	(43)	328	(110)	538	(278)	31	(13)	13	(8)
	Luxembourg		Malta		Netherlands		Norway		Poland	
1997	59	(55)	11	(9)	381	(274)	103	(74)	31	(20)
1998	60	(29)	27	(17)	400	(292)	85	(56)	27	(19)
1999	105	(75)	21	(9)	440	(309)	111	(56)	39	(22)
2000	58	(31)	22	(12)	380	(192)	107	(34)	20	(14)
2001	55	(7)	15	(0)	477	(117)	91	(10)	24	(4)
2002	49	(9)	11	(3)	560	(213)	105	(8)	30	(7)
2003	33	(7)	19	(3)	637	(338)	315	(233)	292	(271)
2004	87	(45)	23	(9)	1,506	(1,185)	1,220	(1,080)	113	(50)
2005	111	(72)	23	(9)	2,127	(1,770)	2,328	(2,163)	136	(85)
	Portugal		Slovakia		Slovenia		Spain		Sweden	
1997	53	(28)	15	(7)	0	(0)	243	(151)	166	(114)
1998	67	(42)	6	(2)	4	(2)	237	(140)	258	(158)
1999	54	(28)	4	(4)	6	(4)	300	(169)	247	(159)
2000	44	(24)	7	(3)	2	(0)	271	(117)	233	(107)
2001	45	(5)	8	(1)	11	(4)	273	(42)	131	(10)
2002	26	(3)	11	(1)	7	(3)	370	(71)	204	(80)
2003	52	(18)	12	(8)	9	(4)	269	(79)	238	(109)
2004	53	(16)	13	(11)	18	(8)	376	(144)	241	(112)
2005	66	(35)	16	(12)	32	(16)	539	(309)	406	(288)

Table 4. Centros-Type E.U. Private Limited Companies Incorporating in the U.K.

This table reports percentages of foreign private limited liability companies incorporating in the U.K. from E.U. countries registered at address clusters. A firm is identified as using an address cluster if the primary address of the firm is an address used by at least 100, 50, or 25 firms with different registration numbers. Nationalities of firms are identified using the "majority of directors" or "all directors" criterion. Panel A reports yearly cross-sectional means for E.U. countries plus Norway, Panel B reports domestic U.K. firms. Panels C and D report pre and post-Centros averages. To illustrate reading the table, the first column in Panel A shows that of all those private limited companies incorporated during the year 1997 in the U.K. and identified as coming from an E.U. country using the majority of director criterion, 37.25 percent had firm addresses which are used by at least 19 other firms in the sample. *** denotes that pre and post-Centros means are statistically different from each other at the 1% level.

	Majority of directors						All directors					
Year	Cluster size n=20		Cluster size n=50		Cluster size n=100		Cluster size n=20		Cluster size n=50		Cluster size n=100	
Panel A: Yearly Percentages of Clustered Firms from E.U. Countries												
1997	37.25		22.40		14.20		40.98		23.20		13.81	
1998	36.91		24.62		15.10		39.18		24.19		12.59	
1999	42.26		29.19		18.91		46.60		30.40		17.54	
2000	48.87		35.95		25.54		52.29		34.57		23.96	
2001	49.69		37.50		28.42		53.86		44.83		38.88	
2002	66.84		57.62		48.15		74.47		68.73		63.27	
2003	80.89		74.64		68.77		89.65		86.69		80.44	
2004	83.86		79.68		73.82		89.83		86.97		80.78	
2005	85.66		81.13		75.98		89.65		85.13		80.87	
Panel B: Yearly Percentages of Clustered Firms from the U.K.												
1997	18.53		9.77		4.88		18.10		9.34		4.57	
1998	19.94		10.78		5.77		19.49		10.29		5.40	
1999	21.60		11.66		5.98		21.10		11.06		5.55	
2000	23.56		13.48		7.74		22.80		12.72		7.13	
2001	22.11		13.17		8.26		20.64		11.85		7.23	
2002	29.74		19.46		12.06		28.42		17.98		10.78	
2003	31.73		21.47		13.92		30.83		20.45		13.02	
2004	27.53		19.07		13.78		26.65		18.16		12.93	
2005	29.01		21.68		16.66		28.27		20.86		15.95	
Panel C: Pre- and Post-Centros Mean Percentages of Clustered Firms from E.U. Countries												
Pre-Centros	38.81		25.41		16.07		42.25		25.93		14.65	
Post-Centros	83.47		78.48		72.86		89.71		86.26		80.69	
t-stat	20.14	***	18.93	***	22.03	***	21.21	***	25.96	***	44.2	***
Panel D: Pre- and Post-Centros Mean Percentages of Clustered Firms from the U.K.												
Pre-Centros	20.02		10.74		5.54		19.57		10.23		5.17	
Post-Centros	29.42		20.74		14.79		28.59		19.82		13.97	
t-stat	6.19	***	10.02	***	9.28	***	6.04	***	9.83	***	8.46	***

Table 5. Incorporations of Private Limited Companies in the U.K. Pre and Post Centros

This table reports differences in differences estimates of changes in incorporations of foreign private limited companies in the U.K. The dependent variable is the log of the mean or median annual number of incorporations from any country. Means and medians are calculated for the Pre-Centros (1997-1999) and the Post-Centros (2003-2005) period. Country identification is based on the "majority of directors" or the "all directors" criterion. Post Centros is a dummy variable which equals 1 for the post Centros period, 0 otherwise. The table reports results for adjusted panel observations using correction factors as in Table 4. The E.U. 25 dummy variable equals 1 for Norway and all E.U. Member States, excluding the U.K. Centros x E.U. is the interaction term. Standard errors robust to heteroskedasticity are reported in brackets. *, **, and *** denote the parameter is significantly different from 0 at the 10%, 5%, and 1% level, respectively.

Panel A: Country identification based on majority of directors						
	Pre- and Post Centros Country Means			Pre- and Post Centros Country Medians		
	Maj	Maj / GDP	Maj / Pop	Maj	Maj / GDP	Maj / Pop
Post Centros	0.37	0.039	0.118	0.452*	0.004	0.236
	[0.233]	[0.158]	[0.263]	[0.242]	[0.061]	[0.262]
E.U. 25	2.918***	-0.092	1.394***	3.028***	0.034	1.525***
	[0.314]	[0.170]	[0.327]	[0.326]	[0.077]	[0.324]
(Centros) x (EU)	0.698	0.203	0.802*	0.649	0.144	0.703
	[0.439]	[0.268]	[0.474]	[0.447]	[0.112]	[0.472]
Accession country	-2.291***	0.222	-0.946**	-2.402***	0.05	-1.032**
	[0.382]	[0.255]	[0.434]	[0.385]	[0.105]	[0.432]
Constant	1.965***	0.634***	1.252***	1.813***	0.365***	1.089***
	[0.160]	[0.104]	[0.180]	[0.170]	[0.042]	[0.177]
Observations	274	274	274	274	274	274
R-squared	0.292	0.005	0.099	0.29	0.018	0.109
RMSE	1.674	1.117	1.877	1.733	0.437	1.868
F-statistic	39.573	0.538	14.386	40.18	2.023	15.822
Panel B: Country identification based on all directors						
	Pre- and Post Centros Country Means			Pre- and Post Centros Country Medians		
	All	All / GDP	All / Pop	All	All / GDP	All / Pop
Post Centros	0.048	-0.083	-0.125	0.092	-0.059	0.013
	[0.212]	[0.142]	[0.238]	[0.217]	[0.057]	[0.230]
E.U. 25	2.817***	-0.083	1.227***	2.883***	0.029	1.352***
	[0.328]	[0.154]	[0.323]	[0.339]	[0.073]	[0.322]
(Centros) x (EU)	1.028**	0.292	0.994**	0.916**	0.194*	0.777*
	[0.457]	[0.248]	[0.472]	[0.461]	[0.110]	[0.460]
Accession country	-2.350***	0.142	-0.960**	-2.388***	0.019	-0.971**
	[0.412]	[0.238]	[0.438]	[0.410]	[0.105]	[0.427]
Constant	1.620***	0.509***	1.057***	1.467***	0.289***	0.861***
	[0.149]	[0.100]	[0.170]	[0.156]	[0.040]	[0.164]
Observations	274	274	274	274	274	274
R-squared	0.325	0.006	0.106	0.316	0.025	0.111
RMSE	1.559	1.006	1.726	1.59	0.408	1.668
F-statistic	35.519	0.578	11.539	33.595	2.288	12.097

Table 6. Minimum Capital Requirements and Incorporation Costs in the E.U.

This table reports minimum capital requirements for private and public limited liability companies in the 25 E.U. Member States and Norway. Typical setup costs are the upper bounds of figures reported in EVCA (2004) and checked against estimates of law firms based in various Member States. A contact list is available from the authors. All reported figures are in Euro.

Country	Private limited company					Public limited company			
	Local name	Abbreviation	Minimum capital	Paid-up capital	Typical setup costs	Local name	Abbreviation	Minimum capital	Typical setup costs
Austria	Gesellschaft mit beschränkter Haftung	GesmbH	35,000	17,500	3,500	Aktiengesellschaft	AG	70,000	7,000
Belgium	Besloten vennootschap met beperkte aansprakelijkheid or Société responsabilité limitée	BVBA or SPRL	18,550	6,000	980	Naamloze vennootschap or Société anonyme	NV or SA	61,500	1,798
Cyprus	Private company limited by shares	Ltd	2	2	n.a.	Public company limited by shares	Plc	8,850	n.a.
Czech Republic	Společnost s ručením omezeným	s.r.o.	6,700	3,350	1,234	Akciová společnost	a.s.	67,000	1,234
Denmark	Anpaartsselskap	ApS	16,800	16,800	6,715	Aktieselkab	A/S	67,200	6,715
Estonia	Osaühing	OÜ	2,560	2,560	n.a.	Aktsiaselts	AS	25,560	n.a.
Finland	Osakeyhtiö	Oy	8,000	8,000	285	Julkinen osakeyhtiö	OYJ	80,000	285
France	Société à responsabilité limitée	SARL	1	1	450	Société anonyme	SA	37,000	550
Germany	Gesellschaft mit beschränkter Haftung	GmbH	25,000	12,500	1,000	Aktiengesellschaft	AG	50,000	1,500
Greece	Eteria periorismenis efthynis	E.P.E.	18,000	18,000	1,500	Anonymos eteria	A.E.	60,000	3,000
Hungary	Korlátolt felelősségű társaság	Kft	12,170	12,170	430	Részvénytársaság	Rt	81,150	2,443
Ireland	Private limited liability company	Ltd	1	1	1,500	Public limited liability company	Plc	38,092	5,000
Italy	Società a responsabilità limitata	S.r.l.	10,000	2,500	2,750	Società per azioni	S.p.A.	120,000	2,750
Latvia	Sabiedriba ar ierobežotu atbildibu	SIA	2,880	2,440	n.a.	Akciju sabiedriba	AS	35,950	n.a.
Lithuania	Uždaroji akcine bendrove	UAB	2,900	2,900	n.a.	Akcine bendrove	AB	43,440	n.a.
Luxembourg	Société à responsabilité limitée	SARL	12,500	12,500	2,300	Société anonyme	SA	31,000	2,500
Malta	Private limited liability company	Ltd	1,160	232	n.a.	Public limited liability company	Plc	46,400	
Netherlands	Besloten vennootschap	B.V.	18,000	18,000	1,750	Naamloze vennootschap	N.V.	45,000	1,750
Norway	Aksjeselskap	AS	11,913	5,957	1,787	Allmennaksieselskap	ASA	119,130	1,787
Poland	Spólka z ograniczona odpowiedzialnoscia	SP.Z.O.O	12,460	12,460	650	Spólka akcyjna	S.A.	124,580	3,500
Portugal	Limitada	Lda.	5,000	5,000	650	Sociedade anónima	S.A.	50,000	830
Slovakia	společnost s ručením omezeným	s.r.o.	5,230	4,230	4,000	Akciová společnost	a.s.	26,140	5,000
Slovenia	Druzba z omejeno odgovornostjo	d.o.o.	8,780	4,180	n.a.	Delniska druzba	d.d.	25,090	n.a.
Spain	Sociedad de responsabilidad limitada	S.L.	3,010	3,010	600	Sociedad anónima	S.A.	60,100	1,200
Sweden	Privat aktiebolag	privat AB	10,650	10,650	2,210	Publikt aktiebolag	publikt AB	53,240	2,210
United Kingdom	Private limited company	Ltd	2	2	425	Public limited company	Plc	75,450	779

Table 7. Determinants of the Inflow of Foreign Limiteds

This table reports differences-in-differences regressions similar to Table 5. Panels A to F use six different dependent variables, within each panel all eight regressions have the same dependent variable. The dependent variable is the log of the median annual number of incorporations from any country around the world in the U.K. Panels A to C use the "majority of directors" criterion, Panels D to F use the "all directors" criterion. The column titles indicate eight different incorporation cost variables (*min cap, cap paid, cost1, cost2, mincap+cost1, time1, time2,* and *procedure*). The two dummies HIGH, LOW indicate whether a company is from an E.U. Member State where the cost-related measure indicated in the respective column is above or equal to the median of that measure within the E.U.. Centros is a dummy variable that equals 1 for post-Centros observations, 0 for pre-Centros observations. The regressions include two interaction terms of Centros with the HIGH, LOW dummies. The base case are therefore pre-Centros incorporations from non-E.U. countries. All regressions include a constant (not reported). The control variables are defined as follows. Min cap is the legal minimum capital requirement. Cap paid is paid-up capital, i.e. the minimum capital necessary to be paid in at time of incorporation. Cost1 is typical setup costs from EVCA (2004). Cost2 is typical setup costs scaled by income per capita from World Bank (2005). Time1 is the upper bound of typical waiting time from application to obtaining legal status as a private limited company from EVCA (2004). Time2 is the mean time to complete all procedures necessary to incorporate a standardized private limited company from the World Bank (2005). Procedure is the number of procedures an entrepreneur must complete to obtain legal status of the firm from the World Bank (2005). Accession country is a dummy variable that equals 1 for all Member States that joined the E.U. in 2003. To illustrate reading the table, in the first column, the HIGH dummy is equal to one for firm observations originating from a country where minimum capital requirements are higher than the E.U. median. The LOW dummy is equal to one for firm observations originating from a country where minimum capital requirements are lower than the E.U. median. In the second column the HIGH, LOW dummies refer to paid-up capital and so on. Standard errors robust to heteroskedasticity are reported in brackets. *, **, and *** denote the parameter is significantly different from 0 at the 10%, 5%, and 1% level, respectively.

Panel A. **Dependent Variable**: Pre-and post-Centros country medians, country identification based on majority of directors								
	min cap	*cap paid*	*cost1*	*cost2*	*min cap+cost1*	*time1*	*time2*	*procedure*
HIGH dummy	2.797***	2.588***	2.563***	2.159***	2.595***	2.159***	1.340**	2.456***
	[0.284]	[0.311]	[0.392]	[0.484]	[0.288]	[0.473]	[0.592]	[0.491]
LOW dummy	2.720***	3.266***	2.206***	2.272***	2.144***	2.652***	2.860***	1.859***
	[0.542]	[0.450]	[0.567]	[0.544]	[0.642]	[0.460]	[0.489]	[0.543]
(Centros)x(HIGH dummy)	1.305***	1.252**	0.868	1.117**	1.377***	1.085	1.246***	1.111**
	[0.418]	[0.525]	[0.542]	[0.482]	[0.506]	[0.700]	[0.472]	[0.530]
(Centros)x(LOW dummy)	0.881	0.938*	1.097	1.218*	0.532	0.857	1.063	1.253*
	[0.633]	[0.522]	[0.808]	[0.734]	[0.789]	[0.635]	[0.721]	[0.649]
Accession country	-2.296***	-2.681***	-0.229	-1.360**	-0.151	-0.221	-0.841	-1.443**
	[0.410]	[0.385]	[0.475]	[0.663]	[0.442]	[0.446]	[0.727]	[0.682]
Observations	274	274	274	274	274	274	274	274
R-squared	0.281	0.282	0.243	0.212	0.25	0.243	0.228	0.214
RMSE	1.747	1.745	1.793	1.829	1.784	1.792	1.81	1.826
F-statistic model	35.98	41.721	26.914	22.815	32.711	24.335	22.716	20.988
Panel B. **Dependent Variable**: Pre-and post-Centros country medians scaled by GDP on the country level, country identification based on majority of directors								
HIGH dummy	-0.177	-0.163	0.007	-0.493***	-0.121	-0.387***	-0.727***	-0.462***
	[0.143]	[0.137]	[0.174]	[0.180]	[0.154]	[0.127]	[0.246]	[0.175]
LOW dummy	0.101	0.123	-0.417***	-0.287	-0.275	0.025	-0.16	-0.291
	[0.249]	[0.254]	[0.138]	[0.195]	[0.193]	[0.190]	[0.160]	[0.226]
(Centros)x(HIGH dummy)	0.355**	0.332*	0.178	0.225	0.417**	0.239	0.233	0.257*
	[0.178]	[0.179]	[0.227]	[0.156]	[0.209]	[0.158]	[0.167]	[0.154]
(Centros)x(LOW dummy)	0.147	0.172	0.218	0.314	-0.047	0.15	0.304	0.281
	[0.386]	[0.386]	[0.171]	[0.238]	[0.185]	[0.253]	[0.223]	[0.278]
Accession country	0.102	0.057	0.292	0.418	0.29	0.279	0.621**	0.419
	[0.216]	[0.218]	[0.253]	[0.284]	[0.253]	[0.251]	[0.314]	[0.290]
Observations	274	274	274	274	274	274	274	274
R-squared	0.007	0.007	0.009	0.013	0.01	0.008	0.02	0.012
RMSE	1.11	1.11	1.108	1.106	1.108	1.109	1.102	1.107
F-statistic model	1.121	1.138	2.701	1.97	2.273	2.724	2.386	1.877
Panel C. **Dependent Variable**: Pre-and post-Centros country medians scaled by population on the country level, country identification based on majority of directors								
HIGH dummy	1.315***	1.245***	1.562***	0.309	1.311***	0.358	-0.325	0.338
	[0.319]	[0.324]	[0.423]	[0.406]	[0.412]	[0.355]	[0.544]	[0.394]
LOW dummy	1.503***	1.739***	0.195	0.843*	0.475	1.550***	1.211***	0.901*
	[0.494]	[0.474]	[0.391]	[0.467]	[0.485]	[0.481]	[0.388]	[0.546]
(Centros)x(HIGH dummy)	1.131***	1.076**	0.785	0.920**	1.244**	0.900*	0.995**	0.943***
	[0.407]	[0.445]	[0.606]	[0.378]	[0.566]	[0.497]	[0.401]	[0.362]
(Centros)x(LOW dummy)	0.731	0.79	0.862	1.065*	0.353	0.734	0.975*	1.061
	[0.689]	[0.656]	[0.525]	[0.593]	[0.567]	[0.683]	[0.554]	[0.696]
Accession country	-1.027**	-1.219***	0.408	-0.056	0.402	0.354	0.46	-0.031
	[0.414]	[0.409]	[0.505]	[0.636]	[0.505]	[0.502]	[0.693]	[0.645]
Observations	274	274	274	274	274	274	274	274
R-squared	0.106	0.107	0.083	0.051	0.083	0.078	0.067	0.051
RMSE	1.874	1.873	1.899	1.931	1.898	1.903	1.915	1.931
F-statistic model	13.229	12.362	8.197	6.327	9.254	7.259	8.025	6.142

Panel D. **Dependent Variable**: Pre-and post-Centros country medians, country identification based on all directors

	min cap	*cap paid*	*cost1*	*cost2*	*min cap+cost1*	*time1*	*time2*	*procedure*
HIGH dummy	2.881***	2.625***	2.689***	2.247***	2.710***	2.196***	1.475**	2.485***
	[0.285]	[0.329]	[0.384]	[0.482]	[0.284]	[0.479]	[0.587]	[0.514]
LOW dummy	2.643***	3.224***	2.175***	2.209***	2.121***	2.725***	2.768***	1.861***
	[0.585]	[0.487]	[0.610]	[0.590]	[0.680]	[0.499]	[0.582]	[0.530]
(Centros)x(HIGH dummy)	1.238***	1.240**	0.712	0.894*	1.339**	1.023	1.062**	1.020*
	[0.475]	[0.589]	[0.562]	[0.508]	[0.572]	[0.724]	[0.452]	[0.586]
(Centros)x(LOW dummy)	0.758	0.757	1.076	1.345*	0.379	0.73	1.145	1.238*
	[0.659]	[0.549]	[0.866]	[0.790]	[0.786]	[0.699]	[0.828]	[0.659]
Accession country	-2.213***	-2.579***	-0.217	-1.347**	-0.125	-0.22	-0.865	-1.430**
	[0.437]	[0.410]	[0.470]	[0.667]	[0.437]	[0.444]	[0.757]	[0.687]
Observations	274	274	274	274	274	274	274	274
R-squared	0.319	0.317	0.278	0.239	0.289	0.278	0.255	0.241
RMSE	1.59	1.591	1.636	1.68	1.623	1.636	1.663	1.678
F-statistic model	33.461	34.556	25.798	19.242	33.114	22.357	19.797	18.836

Panel E. **Dependent Variable**: Pre-and post-Centros country medians scaled by GDP on the country level, country identification based on all directors

	min cap	*cap paid*	*cost1*	*cost2*	*min cap+cost1*	*time1*	*time2*	*procedure*
HIGH dummy	-0.084	-0.078	0.062	-0.364**	-0.034	-0.285***	-0.550**	-0.354**
	[0.134]	[0.128]	[0.153]	[0.160]	[0.146]	[0.108]	[0.222]	[0.160]
LOW dummy	0.1	0.111	-0.308**	-0.238	-0.204	0.081	-0.139	-0.222
	[0.217]	[0.218]	[0.121]	[0.164]	[0.156]	[0.169]	[0.143]	[0.176]
(Centros)x(HIGH dummy)	0.279	0.272	0.11	0.139	0.344	0.194	0.146	0.218
	[0.176]	[0.176]	[0.209]	[0.138]	[0.209]	[0.149]	[0.136]	[0.147]
(Centros)x(LOW dummy)	0.079	0.086	0.173	0.311	-0.088	0.079	0.302	0.217
	[0.348]	[0.349]	[0.163]	[0.216]	[0.132]	[0.233]	[0.219]	[0.237]
Accession country	0.089	0.069	0.246	0.345	0.252	0.235	0.508*	0.342
	[0.193]	[0.192]	[0.230]	[0.265]	[0.230]	[0.229]	[0.301]	[0.270]
Observations	274	274	274	274	274	274	274	274
R-squared	0.006	0.006	0.008	0.011	0.011	0.007	0.018	0.01
RMSE	0.969	0.969	0.968	0.966	0.966	0.968	0.963	0.967
F-statistic model	0.724	0.738	2.154	1.579	3.167	2.305	1.869	1.381

Panel F. **Dependent Variable**: Pre-and post-Centros country medians scaled by population on the country level, country identification based on all directors

	min cap	*cap paid*	*cost1*	*cost2*	*min cap+cost1*	*time1*	*time2*	*procedure*
HIGH dummy	1.290***	1.195***	1.550***	0.336	1.311***	0.358	-0.24	0.329
	[0.323]	[0.336]	[0.412]	[0.383]	[0.410]	[0.328]	[0.512]	[0.386]
LOW dummy	1.349***	1.575***	0.178	0.733	0.441	1.522***	1.064***	0.824*
	[0.483]	[0.450]	[0.373]	[0.451]	[0.460]	[0.483]	[0.406]	[0.494]
(Centros)x(HIGH dummy)	1.023**	1.011**	0.63	0.670*	1.176**	0.786	0.767**	0.795**
	[0.450]	[0.491]	[0.613]	[0.390]	[0.597]	[0.497]	[0.368]	[0.395]
(Centros)x(LOW dummy)	0.537	0.551	0.753	1.091*	0.146	0.58	0.975	0.979
	[0.668]	[0.634]	[0.529]	[0.592]	[0.502]	[0.700]	[0.606]	[0.660]
Accession country	-0.903**	-1.050***	0.37	-0.047	0.379	0.313	0.424	-0.026
	[0.407]	[0.397]	[0.473]	[0.606]	[0.474]	[0.473]	[0.676]	[0.614]
Observations	274	274	274	274	274	274	274	274
R-squared	0.113	0.112	0.091	0.053	0.096	0.085	0.069	0.052
RMSE	1.67	1.67	1.69	1.725	1.685	1.696	1.711	1.726
F-statistic model	10.513	10.006	7.381	4.999	8.101	6.337	6.039	4.942

Table 8. Incorporation Agent Clusters

The table reports the uncorrected raw frequency counts for each address linked to a specific registered office address cluster for domestic or foreign Limited companies. The count was computed without correction factors.

Agent	Web-site	Provenance	1997	1998	1999	2000	2001	2002	2003	2004	2005	Total
1st Contact	http://www.1stcontact.co.uk	UK*	0	0	14	2,471	5,349	4,056	5,239	3,518	2,626	23,273
Go Ahead	http://www.go-limited.de/	D	36	23	40	60	49	46	1,029	6,251	8,817	16,351
L4You	http://www.limited4you.de	D	0	0	2	0	0	121	833	2,558	4,058	7,572
Formationshouse	http://www.formationshouse.com	UK**	4	3	2	12	54	822	2,117	2,403	1,899	7,316
York Place Companies	http://www.yorkplace.co.uk/	UK	0	0	0	0	0	0	0	3,259	2,806	6,065
Brighton Formations	http://www.brightonformations.co.uk/	UK	2	9	27	23	23	398	1,242	842	1,848	4,414
Haags Juristen Colleg	http://www.hjc.nl	NL	77	141	269	344	284	533	484	928	1,236	4,296
Incorporate Online	http://www.incorporateonline.co.uk	UK	134	190	277	798	697	707	582	509	393	4,287
Stanley Davis	http://www.sdgonline.com/	UK	81	139	139	231	237	329	526	841	1,004	3,527
Westbury	http://www.westbury.co.uk/	UK	0	0	0	0	0	0	0	576	2,732	3,308
Companea GmbH	http://www.limited24.de/	D	3	0	2	3	5	15	487	1,100	1,386	3,001
Chettleburgh	http://www.chettleburghs.co.uk/	UK	0	0	137	699	266	725	1,138	0	0	2,965
Hanover	http://www.hanovercompanyservices.com/	UK	5	7	18	146	145	311	570	565	469	2,236
Swift Formations	http://www.swiftformations.com/	UK	85	152	258	311	276	235	398	221	289	2,225
Duport	http://www.duport.co.uk/	UK	2	2	2	3	2	91	269	408	1,431	2,210
National Business Register	http://www.start.biz	UK	74	107	110	192	144	299	496	420	331	2,173
Appleton	http://www.appleton.co.uk/	UK	109	81	163	256	247	390	248	276	257	2,027
FCLS Limited	http://www.fcls.co.uk/	UK	4	6	19	135	149	107	276	181	190	1,067
Companies24	http://www.companies24.com	D	8	31	25	25	41	34	81	171	541	957
ADCOMP.de	http://www.adcomp.de	D	6	4	15	9	13	64	89	321	407	928
Chalfen	http://www.chalfen.com/	UK	0	0	0	1	0	129	180	324	249	883
Ashburton	http://www.arcorporateservices.com	UK	23	39	49	49	61	104	139	173	213	850
UK Data	http://www.ukdata.com	UK	0	1	1	2	4	23	119	305	118	573
Interlimited	http://www.companyregistrations.co.uk/	UK	2	0	0	2	0	11	50	246	253	564
Europe Consulting	http://www.eurogmbh.ch/	CH	0	0	0	0	0	46	94	348	40	528
Hager Consult	http://www.hagerconsult.com/	D	27	41	45	55	41	66	68	43	25	411
ADCOMP Groep	http://www.adcomp.nl	NL	24	7	7	11	23	12	29	96	22	231

*Web-site also in Polish

**Web-site also in German, Italian, French and Russian

Figure 1. European Court of Justice Rulings Timeline

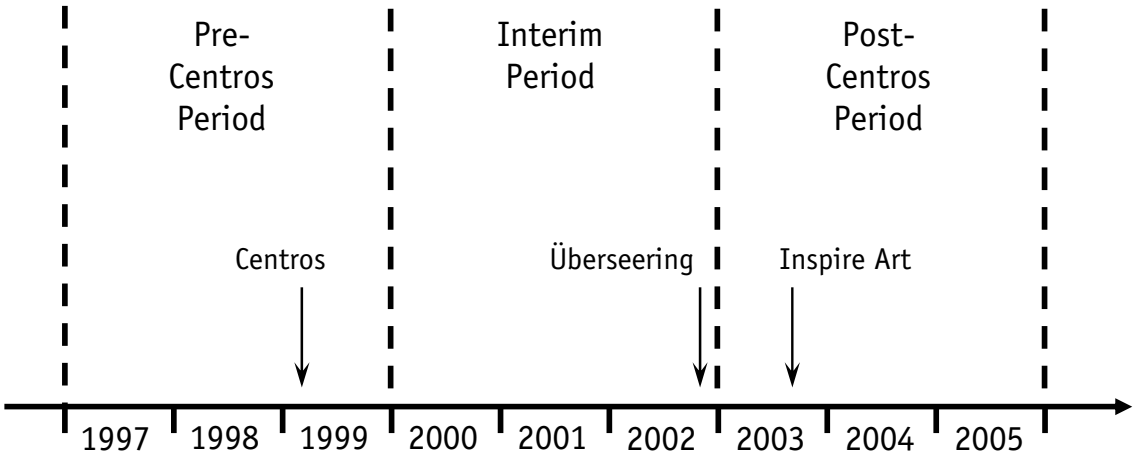
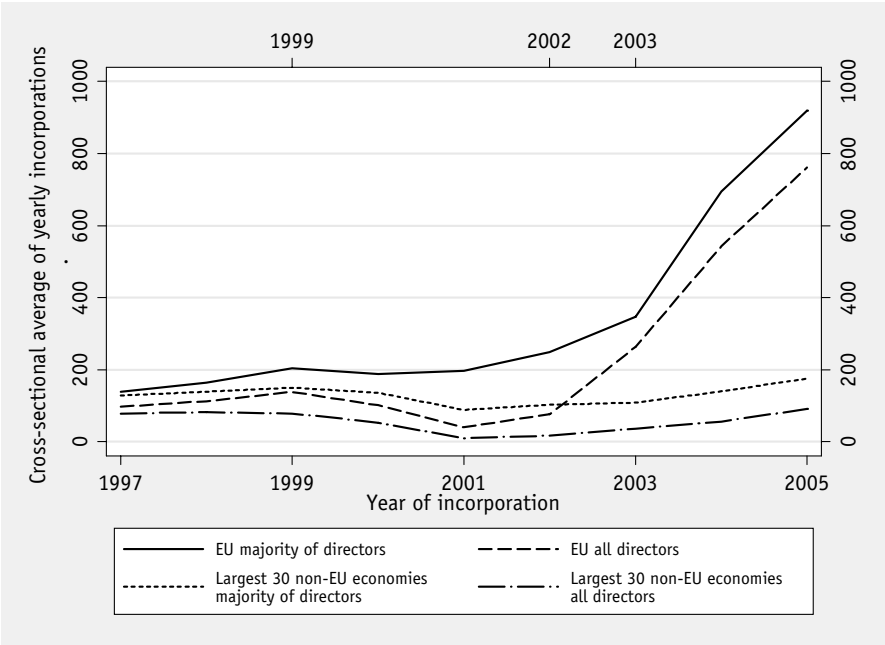
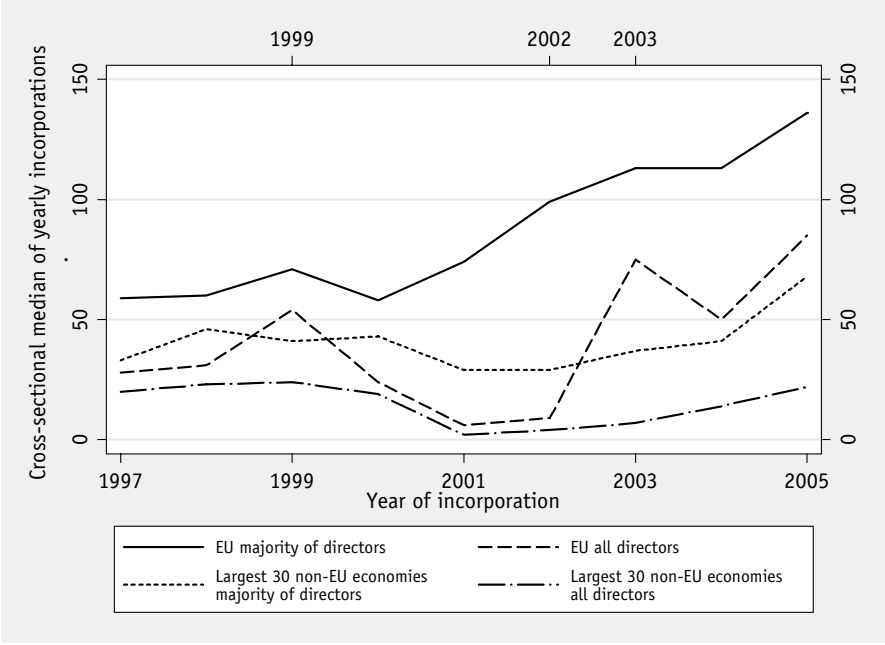


Figure 2. Foreign Private Limited Company Incorporations in the U.K. 1997-2005

(a) Cross-sectional averages



(b) Cross-sectional medians



Appendix A. Database Construction

The database construction is performed in six steps, described in Tables A1 to A3. One, from each FAME disk we export the identification number of firms with limited liability that were newly incorporated in the U.K. between 1 January 1997 and 31 December 2005. From these records we identify the FAME disks with the largest coverage for a particular year. Two, from these disks we extract all relevant data, including company name, registered address, the name and home address of each director, the name and home address of each company secretary, the incorporation date and the current status of the company (alive, dormant or dead). Three, we exclude companies with partial director records.[32] Four, we drop directors who were not appointed in the year of incorporation. This step is necessary because FAME contains complete director histories. We keep only the snapshot of directors at the time of incorporation. This step also excludes nominee directors with appointment dates earlier than the year of incorporation, for example from "shelf registrations". Five, we determine the nationality of the new firms using the director home address methodology described earlier in this section. It should be noted that applying the nationality definitions increases as well as decreases the number of useable firm observations slightly. The number of observations increases since companies may have two nationalities and are therefore counted for two countries under the majority of directors nationality definition. For example, a company with two directors living in the U.K. and two directors living in the U.S. would have both 50 percent or more of U.K. and U.S. directors and would therefore count once as a British company and once as a U.S. company. The number of observations on the other hand decreases because companies may either not have a nationality—because director nationalities are dispersed—or because director nationality cannot be identified from address data. In the final step we scale the raw data with the correction factors reported in Table A3. To do this we use the total number of private limited companies derived via Steps 1 to 5 and subtract observations due to double nationality counting and add companies without nationality or unidentified country. This yields the total number of real firms for which we have data. We then divide the total number of incorporations of private limited companies reported in the annual reports of Companies House by the number of real firm observations we have. This yields a correction factor, which we consequently multiply with the number of observations we have for all countries and for all years.

[32] As discussed before we use director data to identify the nationality of a company. We exclude companies with missing address data for one or more directors. This ensures that a company is not wrongly classified as having a majority or all directors from one particular country since the missing entry or entries could be a different country. We also exclude companies that do not report having a company secretary. This ensures that we do not classify foreign companies as domestic. Since Limiteds by law must have at least one company secretary and company secretaries for foreign Limiteds tend to be based in the U.K., *not* excluding companies that do *not* report a company secretary could therefore bias the nationality identification based on a mix of director and company secretary address data, since at least one of the directors most likely *is* in fact a company secretary.

Table A1. Dataset Construction on Firm Level

Step 1. Firm data availability on FAME

The firms observations available on FAME shown in this panel satisfy the following requirements:
(1) The company is incorporated as a public limited company in the U.K. (including England, Northern Ireland, Scotland, Wales, the Channel Islands and the Isle of Man).
(2) The firm is listed as alive or dead on the FAME issue providing the most complete coverage of firms incorporated in the year in which that particular firm is incorporated.

FAME Issue	Year of incorporation								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Oct 1998	103	-	-	-	-	-	-	-	-
Apr 1999	1,115	29	-	-	-	-	-	-	-
Apr 2000	4,327	1,587	22	-	-	-	-	-	-
Apr 2001	6,584	4,512	1,867	53	-	-	-	-	-
Apr 2002	128,071	155,558	200,151	237,233	217,801	62,239	-	-	-
Apr 2003	117,252	139,906	166,682	229,629	217,756	285,236	76,984	-	-
Apr 2004	114,185	133,788	148,773	175,577	189,180	286,291	390,061	82,752	-
Apr 2005	113,714	132,963	146,582	168,048	165,630	261,005	389,787	325,162	76,190
Apr 2006									349,871

Step 2. Useable firm observations

For every incorporation year the FAME issue with the maximum coverage is selected. The 2002 issue does not contain director address information.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005
Observations	117,252	139,906	166,682	229,629	189,180	286,291	390,061	325,498	349,871

Step 3. Reductions on firm level

On the firm level, firm observations must satisfy the following conditions
(3) Home address data is available for all directors and company secretaries.
(4) The firm has at least one company secretary identifiable by job title.
This yields the final sample of firms:

	Year of incorporaton								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Private limited companies	90,930	105,348	119,393	140,605	186,285	283,675	384,684	321,554	346,106

Table A2. Dataset Construction on Individual Director Level

Step 4. Reductions on firm level
Director observations for individual firms must satisfy the following director-level requirements:
(i) The directors has been appointed in the year of incorporation.
(ii) The director has not resigned in the year of incorporation.

Step 5. Determine nationality of firms
Two measures of the nationality of a firm are defined as follows
Majority of directors (MAJ): Incorporations from country x count the number of firms where the majority of directors resides in country x.
All directors (ALL): Incorporations in parentheses from country x count the number of firms where all directors reside in country x.
This leads to changes in the sample size on the firm level as follows.
a) Companies may have two nationalities and may therefore be counted for two countries under the MAJ definition.
b) Companies may not have a nationality under the MAJ or the ALL definition. Companies have no nationality under the ALL definition if they do not have a nationality under the MAJ definition.
c) Directors with unidentifiable country of residence are only excluded after calculating MAJ and ALL definitions.

Table A3. Step 6.Calculation of Correction Factors for Panel Attrition

Data for newly incorporate firms in 2005 is available for the first two quarters and extrapolated for the full year. We assume that panel attrition is identical for foreign and domestic companies and that attrition rates are constant across E.U. Member States. The table uses the MAJ nationality definition, the total number of real firms (5) would by definition be identical under the ALL nationality definition.

Year of incorporation	1997	1998	1999	2000	2001	2002	2003	2004	2005
Nationality definition	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ	MAJ
(1) Total number of private limited company observations derived through Steps 1-5	91,622	106,324	120,582	142,353	190,235	288,561	389,310	326,413	349,154
(2) Observations due to double nationalities	1,000	1,358	1,668	2,209	4,473	5,499	5,430	5,737	2,526
(3) No majority country	58	70	88	135	269	291	246	265	116
(4) All directors from unidentified country	250	312	391	326	254	322	558	613	243
(5) Number of real firms (1)-(2)+(3)+(4)	90,930	105,348	119,393	140,605	186,285	283,675	384,684	321,554	346,987
(6) Total incorporations of limited liablity companies reported by Companies House	199,000	202,600	223,700	239,400	222,000	293,200	396,700	332,500	357,582
(7) Correction factor to account for panel attrition and truncation	2.18850	1.92315	1.87364	1.70264	1.19172	1.03358	1.03124	1.03404	1.03053