The Life Cycle of Family Ownership:
A Comparative Study of France, Germany, Italy and the U.K.

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19 April 2009

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ABSTRACT

Using firm level data for the largest four European economies, this paper analyzes the evolution of the ownership of the top 1,000 companies, both private and listed in France, Germany, Italy and the U.K. over the period 1996-2006. We find that family firms in the U.K. follow a life cycle and evolve into widely held companies as they age, while those in Continental European do not. More generally, we show that ownership of family firms is more stable in Continental Europe than in the U.K. and less likely to be dispersed via the market for corporate control. The stability of family firms may be related to their profitability relative to non family firms: in Continental Europe family firms are more profitable than non family firms (but not in the U.K.). Continental European family firms are older and more likely to be controlled by a non-founding family than their U.K. counterparts. Our analysis highlights the importance of private firms which represent more than two thirds of the top 4,000 companies.

JEL Classification: G32, G34

1. Introduction

This paper studies the evolution of the ownership structure of a large sample of private and listed firms in the four largest European economies—France, Germany, Italy and the U.K.—over the period 1996-2006. Our goal is to analyze the dynamics of family ownership over time and across countries.

Our analysis is based on the traditional view of firm ownership evolving according to a life cycle. According to this view, which can be traced back to Berle and Means (1932), firms start as family-controlled entrepreneurial entities, raise external capital to grow, and as a result dilute founding family ownership. This transition involves the firm becoming a public company with diffused ownership, run by a professional manager and subject to the market for corporate control. There is some existing evidence which is consistent with this life cycle view of ownership: insider ownership is time-decaying in U.S. firms (Helwege, Pirinsky and Stulz (2007) and in the U.K. (Franks, Mayer and Rossi (2008)). However, we do not know if this happens to family firms and how robust this pattern is across countries.

We make it our central question: How does family ownership evolve within different financial systems? We conjecture that the likelihood and speed of transition from family firm to public corporation varies across countries. Families may be more likely to dilute control in outsider systems, where the value of the private benefits of control are lower, new equity is less expensive and the market for corporate control is more efficient. Conversely, families may be more likely to stay in control in insider systems, where the private benefits of control are greater, new equity is more expensive and the market for corporate control is less efficient. Since the U.K. is regarded as an outsider system and France, Germany and Italy as insider systems (see La Porta et al., 1997, Franks and Mayer, 1998, and Dyck and Zingales, 2004), we expect U.K. family firms to follow the life cycle theory of ownership more closely, by diluting control more rapidly than their Continental European counterparts.

Our results are consistent with this prediction. Over the 1996-2006 decade, U.K. family firms have a lower chance of survival as family-controlled firms than French, German and Italian family firms. Only 44% of U.K. family firms survive over the decade as family-controlled firms, compared with 74% in Germany, 64% in France and 78% in Italy. Similarly, we find a strong negative correlation between family control and age in the U.K., whereas we find no correlation between family control and age in the other three countries. A consequence of the lower level of aging in the U.K. is that the probability of observing second- or higher generation family ownership is lower in the U.K. than elsewhere; this is confirmed in separate tests.

These results are based upon the construction of a unique data set with ownership information on both private and listed firms. This data set consists of the largest 1,000 private and listed companies by sales in each of the four countries at the end of 1996. Each firm is followed for the next decade until 2006. The inclusion of private companies is a key feature of our data set, as virtually all previous studies have focused exclusively on listed firms.[1] We select the largest 1,000 firms in each country as our aim is to analyze the economically most important firms and among them the importance of family firms. We find that private companies are more economically important than listed firms: Among the largest 4,000 firms in the four countries more than two thirds are private. Moreover, there are large differences across countries in the importance of listed firms: in Italy only 11 percent of the largest 1,000 companies are listed, in Germany 17 percent, in France 19 percent and in the U.K. 43 percent. Furthermore, representation of family firms among listed companies is considerably lower than in private companies perhaps because of a wish by families to retain private benefits of control. As a result, an analysis of listed companies only cannot adequately and consistently capture the importance of family ownership in the economy.[2]

We find that among the largest 1,000 firms in each country, family controlled blocks are the most important category of ownership in the three Continental countries, as high as 57% in Italy and 43% in Germany. In contrast, it is only 23% in U.K. The counterpart to this is that widely held companies are dominant in the U.K. at 43% whereas they average only about 10% in the other three countries. The differences in family ownership across countries have been previously observed among listed companies (see Faccio and Lang (2002)); less expected is that these differences extend to private companies, where the U.K. also has the lowest proportion of family ownership at 35%.

As discussed above, the life cycle view of ownership suggests two mechanisms that may lead to dilution of family ownership: i) the need to raise external capital to finance growth and ii) the activity of the market for corporate control. We find evidence consistent with both mechanisms.

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[1] For example, La Porta, Lopez de Silanes and Shleifer (1999) sample the largest publicly traded companies in 27 economies, Faccio and Lang (2002) sample 5,232 publicly traded companies in Western Europe, Villalonga and Amit (2006) include all 500 of the Fortune 500 corporations and Anderson, Duru and Reeb (2009) include the largest 2,000 U.S. industrial firms from COMPUSTAT. One exception is the study by Bloom and Van Reenen (2007), which includes 732 manufacturing firms in the U.S., France, Germany and the U.K., of which 442 are private firms from France, Germany and the U.K. A second exception is the study by Almeida et al. (2008) which covers both private and listed firms in Korean chaebol groups.

[2] By selecting the largest 1,000 firms in each country our paper therefore sidesteps any bias due to conditioning on listing status for sample selection. The price of avoiding this bias and conditioning on size only however is to introduce a potential new size bias. Firms are included in our sample only if they are large. Therefore, our results may not hold for firms that are not successfully growing over time.

First, if raising external capital to finance growth is the motive to dilute family ownership, we might expect that family ownership should be concentrated in industries with lower needs for external capital. We find that this is true only in the U.K. One reason for this may be that family firms are economically so important in Continental Europe that they are able to develop institutions that help them overcome financial constraint without relinquishing control (a Coasian view). This may be because either family firms benefit from institutions such as relationship banking or simply because in Continental Europe there are stronger barriers to the market for corporate control. Hence, unlike their U.K. counterparts, family firms on the Continent are able to thrive even in industries with high external financing needs.

Second, relative differences in performance between family and non-family controlled firms suggest that family ownership is also diluted through the market for corporate control. Efficient markets for corporate control facilitate control changes, leading to optimal ownership structures. This in turn should equate profitability across ownership types. We find no difference in profitability between family and non-family companies in the U.K., while family firms are more profitable than non-family ones in Continental Europe. The results are consistent on the one hand with an active market for corporate control arbitraging away profitability differences between ownership types in the U.K.; on the other hand differences in profitability across different forms of ownership may persist in Continental Europe because of more restricted markets for corporate control.

Third, more foreign ownership is a direct indicator of the greater degree of openness of the market for corporate control in the U.K. compared to Continental Europe. Foreign blockholders are much more common in the U.K. than in Continental Europe: 35% of all U.K. firms have a foreign blockholder compared to between 18% and 21% in the other three countries. The difference is particularly striking when we focus on family controlled firms. On the Continent, family firms are overwhelmingly controlled by domestic families: in Italy only 6% of family controlled firms are controlled by foreign families, 8% in Germany and 12% in France. In the U.K. however family-controlled firms are slightly more likely to be controlled by *foreign* rather than by domestic families: 50.4% of U.K. family firms are controlled by foreign families.

Overall, our evidence points both to the need to raise external capital as well as the activity of the market for corporate control as mechanisms responsible for the dilution of family ownership over time in the U.K. In contrast, we find very little evidence that these mechanisms apply in Continental Europe and consequently family ownership does not follow a conventional life cycle there. These results complement those in Foley and Greenwood

(2009), who track a large international sample of IPO firms over time and find that the concentration of direct shareholders declines over time, but only in countries with strong investor protection. Their analysis is based on a very different sample construction—we analyze ultimate ownership rather than direct shareholdings, the majority of our sample are private firms due to the fact that we specifically select the economically most important firms in each country, whereas they consider IPO firms that are by definition listed firms and tend to be smaller. Still, taken together the results from their paper and ours suggest that raising external financing is an important determinant of ownership dilution in outsider systems but not in insider systems.

How do our cross-sectional ownership results compare with previous studies? Villalonga and Amit (2006) report for the U.S. that 12% of S&P 500 firms are family controlled, where control is defined at the 20% threshold. In Claessens et al. (2000) family ownership for listed firms in Asian countries in 1996 ranges between 9.7% for Japan and 66.7% for Hong Kong. If we confine our comparison to the listed firms in our sample, we find families at 8% in the U.K., 35% in Germany, 48% in France and 66% in Italy. Thus, family ownership in France, Germany and Italy is at the high end internationally and family ownership in the U.K. is among the lowest in the world, being lower than in the U.S. and Japan. No other study has provided comparable data on family ownership in private companies.

A distinctive feature of our data set is how we identify *ultimate* controlling shareholders. Previous research has highlighted the importance of differentiating between direct shareholdings and ultimate control, where the latter may have to be traced through multiple control layers, particularly in Continental Europe. We trace ultimate controlling shareholders for all companies in our sample, across both countries and firms. In particular, we trace control through ownership layers and across countries *independently* of whether the *controlled* company or any *controlling* company is public or private.

Our methodological refinement is important because it has a significant impact on the characteristics of the final data set. Further, even when we analyze listed firms only, our refinement leads to very different results from *prior* studies of listed firms. Specifically, we benchmark our classification of family firms against the widely-used data set in Faccio and Lang (2002) [henceforth, F-L]. This sample contains a snapshot of the ultimate ownership of all listed companies in Europe, taken around 1996. From this sample we select all family controlled firms in the four countries and subject them to our method of tracing ultimate ownership.

Our methodology leads to strikingly different results. We reclassify 39% of the firms classified as family controlled by F-L. 28 percent of these 39 percent are attributable to inconsistent classifications related to ultimate ownership. 4.3 percent are attributable to firms that were in fact not publicly traded in 1996 being described as being listed and 7.4% is where the ultimate owner was assumed by F-L but where we cannot be sure of the identity of the ultimate owner. For the 28% of inconsistent classifications we find that almost two thirds are due to the F-L assumption, that firms which are controlled by an unlisted company are family owned. Instead we find that unlisted companies as controlling shareholders are often not investment vehicles of [ultimate] family shareholders.[3] As a consequence our methodology provides significantly lower estimates of the proportion of family firms among listed firms than F-L. The obvious implication for future work is therefore that an analysis of ultimate ownership of listed firms must take into account the true ownership structures of private firms that are involved in controlling these listed firms. We believe that this result is an important issue for empiricists to consider.

Section 2 reviews the existing literature and develops the testable hypotheses. The data set and empirical methodology are described in Section 3. Section 4 analyzes the evolution of ownership over the decade and tests the life cycle hypothesis of family ownership. The focus in Section 5 turns to a sample of family controlled listed companies, for which more data is available to test the impact of family characteristics on the evolution of family control. Section 6 concludes.

2. Overview of the literature and development of testable hypotheses

Most of the empirical literature has focused on comparing the performance of family-controlled and widely-held companies (Morck, Wolfenzon, and Yeung, 2005). The conclusion of this comparison is that the relation between family control and performance depends on the way family firms are controlled. If control is held directly, without the use of cross-holdings, pyramids and non-voting shares, the evidence is that family-controlled firms perform better than non-family ones (Khanna and Palepu, 2000; Anderson and Reeb, 2003; Barontini and Caprio, 2005). However, where families control companies via cross-holdings, pyramids and non-voting shares, performance has been shown to be worse than in widely-held companies (Morck, Strangeland and Yeung, 2000; Claessens et al., 2002). This evidence

[3] One reason for differences in classification could be that the threshold for control is 25% of voting rights throughout our paper and 20% in F-L. We found only a few listed companies where the controlling family owns between 20% and 25% of voting rights.

is attributed to the controlling shareholder's opportunity to extract private benefits of control and tunnel assets out of the firm.

A particular problem arises in the event of succession. The evidence here is that value is destroyed in the passage of active management from the founder to his/her descendants (Morck and Yeung, 2003; Pérez-González, 2006; Bloom and Van Reenen, 2007; Villalonga and Amit, 2006; Bennedsen et al. 2007). Succession has also been shown to be influenced by country-specific legal institutions such as inheritance tax (Ellul, Pagano and Panunzi, 2008).

We take a more general approach inspired by the life cycle of ownership, a popular concept suggested, among others, by Berle and Means (1932) and Chandler (1977). According to this view, all firms start as family firms founded by entrepreneurs. In their need to grow, they must raise external capital and hence, ownership is diluted. This need for external funds is often accentuated by the entrepreneurs' incentives to diversify their wealth. Because of the combined effect of the firm's need for external finance and of the entrepreneur's desire to diversify wealth, firms become public companies, run by professional managers and owned by dispersed shareholders.

This evolution from family firm to public company with dispersed ownership is not always smooth. Because firms may choose to raise debt rather than issuing equity, growth is not necessarily associated with the evolution of family firms into widely held firms. The choice between debt and equity depends on the relative importance of banks versus stock markets in a financial system (Mayer, 1988). Hence, the type of financial development affects the evolution of family firms. In the U.S. and the U.K., where financial development is high, insider ownership and shareholder concentration has been shown to decay over time (Helwege, Pirinsky and Stulz (2007) and Franks, Mayer and Rossi (2008)). Further, Foley and Greenwood (2009) show that variation in investor protection as a component of financial development influences the decay of ownership concentration in IPO firms across countries. We conjecture that financial development likewise influences the dynamics of family control.

Similarly, the decision to dilute ownership depends on the effectiveness of the market for corporate control. The family's decision to dilute its ownership stake depends critically on the costs and benefits of control. The cost of control is a lack of diversification. As argued by Pagano (1993), this is an increasing function of the degree of development of a country's stock market because large and more liquid stock markets offer greater opportunity to diversify risk.

Entrepreneurs are more likely to sell if the market for corporate control is more efficient as they are likely to receive a better price for their stake. The development of the

market for corporate control varies across countries (Rossi and Volpin, 2004). However, entrepreneurs may resist selling if there is a large private benefit of control due for instance to their ability to use corporate resources for private advantages. As shown by Dyck and Zingales (2004), the private benefits of control are larger in countries with weaker investor protection, poorer accounting rules, lower tax compliance, and less independent press.

The broad classification of *insider* versus *outsider* systems captures the essence of the features discussed above. In "outsider" systems the value of the private benefits of control is lower, new equity is less expensive and the market for corporate control is more efficient than in "insider" systems.

In the early 1990s the U.K. was widely regarded as having the characteristics of an outsider system and France, Germany and Italy as having insider systems characteristics (see La Porta et al., 1997, Franks and Mayer, 1998, and Dyck and Zingales, 2004).[4] To support this claim, in the next section we briefly compare for the four countries corporate governance regulation (shareholder voice, board effectiveness, disclosure and private and public enforcement), financial development (size of stock market, credit to the private sector, number of listed companies and number of IPOs) and market for corporate control (volume of mergers and acquisitions and frequency of hostile takeovers).[5]

2.1. Investor protection, financial development and market for corporate control

Corporate governance regulation was significantly different across the four countries in 1996. Only the U.K. had a corporate governance code of conduct with a comply-or-explain requirement. Since the 1992 Cadbury report, most companies have boards (and audit and compensation committees) with a majority of independent directors and a strict separation of Chairman and CEO. Directors in France, Germany and Italy were not given similar powers.

In the U.K., shareholders have historically enjoyed great power vis-à-vis managers and directors. Shareholders have a final say on a large number of issues, such as share buy-backs, dividend payments and new issues. Even small shareholders have always had the power to set

[4] The phrase of insider versus outsider systems is less widely embedded into the literature than, for example, the classification of market based versus bank based systems. We use it to capture precisely the wider range of financial system differences that shape family ownership.

[5] Over the decade, extensive corporate governance reforms, mainly in Continental Europe, have narrowed the differences between the U.K. on the one hand and France, Germany and Italy on the other hand. For example, the La Porta et al (1997) antidirector rights index increased in Germany and Italy. Stock market capitalization as a percentage of GDP increased in all countries, although most strongly in Italy and France (from 18% to 63% in Italy and from 32% to 80% in France). IPOs as a percentage of listed firms increased from 3% to 4.8% in France and from 4.9% to 6.9% in Italy. Finally, hostile takeovers increased in frequency on the Continent in 2006 from an almost non-existent level in 1996. To the extent that these changes affect ownership structure, they bias our analysis. However, the bias is against detecting differences between systems because of regulatory convergence. Hence, the differences we uncover are likely to be an underestimation of the true magnitude of the effect.

the shareholder meeting agenda (shareholder voice) and bring derivative suits against directors i.e. shareholder actions for damages against directors on behalf of the corporation (private enforcement). Conversely, the costs of voting were high in France, Germany and Italy: the ownership threshold for the right to call a meeting was at 10, 5 and 20 percent, respectively. Derivative suits were not allowed in Germany and Italy and were already allowed although rarely used in France.

Deviations from the one-share-one-vote principle were common in France, Germany and Italy, but were rarely observed in the U.K.[6] All countries but Germany had a "mandatory bid rule": that is, the acquirer of a control block must offer to acquire all the remaining shares at a price usually at the price paid for the block. Executive compensation was disclosed only in the U.K.

As a quantitative characterization of investor protection across countries, Panel A of Table 1 reports the indices for antidirector rights, law and order and anti-self-dealing, as reported by La Porta et al. (1997), the International Country Risk Guide, and Djankov et al. (2008), respectively. For all indicators, the U.K. scores highest, confirming that shareholder protection is far stronger in the U.K. than in the other three countries.

In Panel B we report measures of financial development. These are stock market capitalization, domestic credit, number of listed firms and number of IPOs. The U.K. scores highest on all four measures, indicating the much higher degree of financial development in the U.K. compared with France, Germany and Italy.

An important dimension of an outsider system is the presence of an active and unobstructed market for corporate control. In such a market, private benefits of control should be small and hostile takeovers should be frequent. Panels C and D report measures on the activity of the market for corporate control and proxies for the private benefits of control. The differences between the U.K. and the Continental European countries are again clear-cut: hostile takeovers are virtually non-existent in Continental Europe while voting premia (and to a less extent block premia) are large; conversely, in the U.K. hostile takeovers arise and voting premia are small.

2.2. Testable hypotheses

Because of the above discussion, we expect that the life cycle view of ownership applies to outsider systems but not to insider ones. This implies the following testable prediction on the evolution of family ownership across countries:

[6] This statement refers to mechanisms such as dual class voting shares. It does not include preference shares.

H1) Survival of family firms: *Family firms have a lower chance of survival as family-controlled firms in outsider compared to insider systems.*

A second implication of the life cycle view of ownership is that older firms are less likely to be family controlled. However, we expect this to be true only in outsider systems. Hence, we will test the following prediction:

H2) Age as a determinant of family control: *Firm age is more negatively correlated with family control in outsider systems than in insider systems.*

Furthermore, as discussed above, the life cycle view of ownership suggests two mechanisms for the dilution of family ownership: i) the need to raise external capital; and ii) the market for corporate control. To try and assess the explanatory power of these two mechanisms, we consider two additional hypotheses.

If raising external capital to finance growth is the motive to dilute family ownership, family firms should be concentrated in industries with lower external financing needs. However, it is possible that when family businesses are dominant in the economy, Coase's theorem will operate and institutions will adapt to the needs of family ownership. This may be because family companies benefit from relationship banking or are able to erect pyramidal business groups or simply because in Continental Europe there are stronger barriers to the market for corporate control.[7] In that case, family businesses will not be at a disadvantage over widely held companies even in sectors with high dependence on external capital. In contrast, when family businesses are not dominant, such as in the U.K., family firms will not be able to shape institutions to their benefit and therefore will be disadvantaged over widely held companies in sectors that are more dependent on external capital. Hence, we predict:

[7] There are three indicators for stronger barriers in the market for corporate control in Continental Europe relative to the U.K.. First, due to the much higher incidence of block shareholders the market for corporate control by definition is more restricted in Continental Europe. Second, in an unobstructed market private benefits of control should be small and hostile takeovers should be frequent. As shown in Table 1, hostile takeovers are virtually non-existent in Continental Europe and voting premia are large, while in the U.K. hostile takeovers arise and voting premia are small. Third, in Continental Europe government intervention in this market is much more likely than in the U.K. Prominent examples of such interventions are France announcing the protection of 'national champions' against foreign takeover attempts in May 2004 ("Creating Euro gians", The Economist 20 May 2004), the repeated provision of state aid to Alitalia, the main Italian airline, between 1998 and 2008 to avoid bankruptcy and the 'Volkswagen Law', protecting Volkswagen AG, a large automobile manufacturer in Germany, against hostile takeovers since 1960. In the cases of Alitalia and Volksagen the European Court of Justice ruled that government intervention violated European law.

H3) Need for external financing: *Family ownership will be concentrated in industries with lower need for external capital in outsider systems, but not in insider systems.*

This discussion has implications for the profitability of family firms relative to non-family firms in insider versus outsider systems. If institutions are shaped to cater to the dominant form of ownership, there is a relative advantage in the cost of capital for widely-held firms in outsider systems and for family firms in insider systems. These differences may be reflected in differences in profitability for the two types of ownership in the two systems. However, these differences may disappear if an efficient market for corporate control arbitrages away differences in profitability. Given that the market for corporate control operates with few restrictions in outsider systems, we expect to find little difference in the profitability of family firms versus widely-held firms in the U.K.[8] Given the more severe restrictions to the market for corporate control in insider systems, we expect to find that family firms may be more profitable than widely-held firms in France, Germany and Italy. Hence, we predict:

H4) Differences in profitability: *There is less difference in profitability between family firms and non-family firms in outsider systems than in insider systems. We expect the difference to favor non-family firms in outsider systems and family firms in insider systems.*

3. Data collection and empirical methodology

We have constructed two unique data sets. The main data set includes the largest 1,000 firms by sales in France, Germany, Italy and the U.K., independently of whether they are listed or not. The second data set covers all family-controlled listed firms in each country. Both data sets contain financial and ownership information for 1996 and for 2006 if the company survived or information until the time of death (if the company died before 2006). We describe the two data sets below.

The first data set, our main sample, will be used to test the hypotheses listed in Section 2 on the life cycle of ownership in private and public companies. The rationale for constructing this data set of the largest 4,000 firms in the four countries is to analyze the economically most important firms and among them the importance of family firms. By

[8] Differences in profitability are expected to disappear in outsider systems if measured in terms of market values. Differences may however persist in terms of book values.

selecting the largest 1,000 firms in each country we overcome the concerns that the likelihood of a firm being listed varies strongly between countries and that listed firms are not necessarily economically important. In fact, only one third of the firms in the sample are listed. When we compare the sample with the population of listed firms it transpires that many listed firms fall *below* the top 1,000 on a country basis and as a result the majority of listed firms are excluded.

Because of this we also use a second data set, that covers all family-controlled *listed* firms, independent of size. We do this for three reasons. First, we can check whether our top 4,000 firm results are in any way biased due to size. For this we compare the results from the first data set selected by size with the results from the second data set selected by listed status. Second, we wish to benchmark our results against previous studies. These however cover listed firms only. Finally, we want to explore the evolution of family firms and the characteristics of the family *within the family firm*, such as board membership and effects of generational change over time. It is only for listed firms that sufficient information on these variables is available.

3.1. Main sample

We collected data on the largest 1,000 firms in 1996 in each of the four largest economies in Western Europe (France, Germany, Italy and the U.K.), using sales as our measure of size. Our starting point is the universe of companies covered by AMADEUS, a data set which covers over 250,000 listed and private firms in Europe, as of December 1996. From this data set, we obtain basic financial information for each of the 4,000 companies and ownership information. We then trace whether the company survived from 1996 until 2006. If it did, we record its ownership and financial information in 2006, otherwise we record the reason for non-survival. Thus we record ultimate ownership at two points in time—in 1996 and 2006.

Generally, we find that ownership data in AMADEUS is of poor quality in 1996, but data quality improves greatly until 2006. Available data items also improve over time: In 1996 AMADEUS provides data on direct and some indirect shareholdings only, and no data on ultimate ownership of firms. From 1997 onwards it starts to provide some data on ultimate owners, from 2000 onwards it provides basic information on the type of the ultimate owner (companies or individuals), and from 2002 onwards it provides detailed information on ultimate owners, including a detailed breakdown of different types of ultimate owners, such as families, financial investors and non-financial investors. For the initial classification of ultimate ownership of all firms in 1996 we use the direct and total shareholding information

from AMADEUS as a starting point and correct and supplement it with hand-collected information from a large number of sources as described below, in order to trace control of every firm to the ultimate owner.

We classify a company's ultimate ownership into six categories depending upon whether the company was (i) widely-held, or had as a controlling shareholder comprising either (ii) a family, (iii) the State, (iv) another widely held company (v) several non family shareholders (referred to as a 'multiple block') or (vi) a foreign blockholder. Foreign blockholders are further broken down by foreign family, a foreign State, or a foreign widely held company.

A widely held company is defined as one where there is no ultimate owner (or in the case of families, no group of family members) with 25 percent or more of voting rights. This definition of a controlling stake is used by AMADEUS in 2006. Where there are two shareholders with individual blocks of 25% or more, this is counted as two controlling stakes. In the event that one of the two stakeholders is a family we classify the company as family-controlled. If neither blocks are family-controlled we describe the company as controlled by multiple stakes. We trace controlling stakes through all layers of ownership until we identify the ultimate owner; a controlling stake is defined by the ownership of the voting rights of the ultimate owner.

Where there are multiple stakes held by individuals (or investment vehicles traced to individuals), we aggregate those stakes across individuals within the same family. If there is more than one family we similarly aggregate across all families. This is important because individual family members frequently hold small equity stakes, even though the aggregate family stake is above 25 percent. Our approach therefore distinguishes firms that are widely held from family controlled firms where individual family members hold non-controlling stakes but the aggregate stake constitutes a controlling stake.

We use these categories of ownership and the 25 percent threshold of voting rights for tracing ownership through all control layers that may exist between a firm and the ultimate owner in a pyramid structure. For example, if a family owns 25% of the voting rights of Firm A that owns 30% of the voting rights of Firm B, then we regard Firm B (and Firm A) as family controlled. If instead Firm A owns just 15% of Firm B, then we regard Firm B as controlled by a widely held parent firm (and Firm A still as family controlled). As expected, the largest challenges in identifying ultimate controlling shareholders exist for private firms rather than for public firms.

We have made considerable efforts to ensure the accuracy of all data. The 1996 AMADEUS data does not contain any information on ultimate ownership, therefore all information on ultimate controlling shareholders for 1996 has been hand-collected by us. From 2002 onwards data on ultimate ownership is available from AMADEUS in good quality. Therefore constructing ultimate ownership in 2006 requires less manual work. Still, even for 2006 a considerable number of further adjustments have been made both in ownership levels and the identification of ultimate owner. We describe below four important adjustments that we make to the 1996 and the 2006 data.

First, for a large number of firms in each country (roughly one quarter of all firms in the sample) AMADEUS does not contain information about the ultimate owner even in 2006. In most cases this does not mean that the firm is widely held, but that ultimate ownership is unknown according to the database. Not surprisingly, unknown ownership is more frequent for private than for listed firms. For all these firms, i.e. for the whole sample in 1996 because there is no AMADEUS data on ultimate ownership and for roughly 25 percent of the sample in 2006, we trace controlling stakes through all layers of ownership until we identify the ultimate owner. To do this we use alternative sources, including Wer gehoert zu Wem for Germany, the London Share Price Data Base for the U.K., Consob for Italy, and DAFSA for France, with the complete list of data sources provided in Appendix A.

Second, where one company has a block in another, that company may be classified [by the database] as the ultimate owner. This is clearly not the ultimate owner, unless the holding company is widely held itself. We identify the *true* ultimate owner by tracing the controlling stake to the final ownership layer, using the described alternative sources.

Third, wholly-owned subsidiaries are frequently identified as separate companies even when consolidated into the accounts of the holding company. If we did not exclude subsidiaries it is likely that they would appear twice in our sample, first as a separate company and second as part of the consolidated company of the parent. To avoid this double counting, we identify and exclude wholly-owned subsidiaries of firms already included in the sample. In addition, we treat as wholly-owned subsidiaries those companies where a blockholder owns at least 95% of the share capital. There are a considerable number of companies in this category: about 290 in Germany, 320 in France, 380 in the U.K. and 260 in

Italy. The exclusion of subsidiaries explains a large part of the reduction in the size of our sample and is documented in later tables.[9]

Fourth, to study the evolution of ownership, we have traced the history of all our companies for a decade, from 1996 to 2006. Many companies that are present in 1996 are not present in 2006 because the data base has incorrectly assumed that the company has died. The incorrect classification is due to reasons such as changes of name, of address of incorporation and of control. Such changes usually trigger a new company identifier in electronic databases which creates incorrect classification of death. To amend incorrect classifications we manually determine the reason for the disappearance for each company recorded in 1996 that does not reappear in AMADEUS in 2006. Incorrect classification of death has additional implications for identifying ownership of related firms; that is, if a company that is a shareholder of another company is reclassified then that reclassification may affect the related company. Where there are ownership connections between companies, reclassification presents complex challenges in data collection. With the exception of identifying ownership of private firms, this tracing of public and private firms over time is the most time-consuming and challenging part of data collection for the paper. To achieve this, we combine the 1996 and 2006 AMADEUS databases with virtually all the databases listed in Appendix A.[10]

3.2. Listed family firms and the F-L sample

The most widely used sample of family controlled companies is that of F-L (2002). This sample is a snapshot of the ultimate ownership of all *listed* companies in 13 European countries, taken around 1996. The F-L data set contains information on the type of ultimate controlling shareholders. From the F-L data set we selected all firms classified as family-controlled and subject them to our methodology of tracing control through both public and private entities to identify the ultimate controlling shareholder.

We do this for two purposes: First we wish to use our methodology for classifying family controlled companies to determine if our profile of family controlled companies is similar to the one in F-L. Second, we wish to study the evolution of family firms and the characteristics of the family *within the family firm*, such as board membership and effects of

[9] AMADEUS does not cover most listed banks and financial companies. We therefore also exclude subsidiaries of banks and financial companies that due to their size would be among the TOP 1,000 for sales, even if their parents were not in the original AMADEUS sample.

[10] We also account for a possible contraction in size of the company, i.e. we search among *all* companies in AMADEUS in December 2006 (not only the largest 1,000). In many cases we find that companies have survived, but have diminished considerably in size relative to other firms.

generational change over time. It is only for listed firms that sufficient information on these variables is available.

The sample of companies identified as family controlled companies by F-L includes two types of family firms, one where the ultimate shareholder is identified as being unequivocally a family, and the other where the ultimate owner is a private company whose shareholders are unknown and which they classify as being family controlled. Because our methodology traces the shareholders of private companies we are able to refine the classification of family controlled firms with respect to F-L.

Using F-L's (1996) list of 1,359 family controlled companies in 1996 for our four countries we find that our methodological refinement of tracing ultimate ownership by including also private ownership is important. Our classification of family ownership is different from the F-L classification in 32% of all cases. The differences in classification mainly relate to companies that are controlled by a private company, which are assumed to be family firms by F-L. We make comparisons between F-L and our results in Section 5 below.

To study the evolution of family ownership, we collect information for this sample over the subsequent decade, tracing changes in ownership, board membership, control transfers to other shareholders outside the family (both to other family and non family firms), survival, and effects of generational change. We use these data to determine if management succession and the dispersion of ownership and control within a family affect the probability of survival.

4. Evolution of ownership

In this section we begin by reporting summary statistics on ultimate ownership, listed status and size for the cross-section of firms in each country. Then, we analyze the evolution of ownership over the period 1996-2006 and test the predictions of the life cycle theory of family ownership. First, we consider the survival of family firms in outsider versus insider systems. Second, we examine firm age as the determinant of family control. Third, we assess the explanatory power of external financing needs for family control and the differences in profitability between family and non-family firms, in outsider versus insider systems.

4.1. Descriptive statistics

In Table 2 we report the landscape of ultimate ownership for 1996 for the top 1,000 companies in each country. While the ownership categories in the table are many, in the discussion here we focus mostly on family-controlled and widely-held companies. Also, as

we move through the table from Panel A to Panel C, we apply stricter sample inclusion criteria and show different types of ownership aggregation. The final panel, Panel C, describes the sample we will use for the remainder of the paper.

In Panel A we report data on the full sample, i.e. the largest 1,000 firms after excluding the few firms for which ultimate ownership cannot be identified. The actual numbers are 923 firms in Germany, 970 in France, 980 in the U.K. and 954 in Italy. Among these, family ownership is highest in Italy at 47.9% and lowest in the U.K. at 10.9%. Conversely, the percentage of widely held companies is highest in the U.K. at 27.4% and lowest in Italy at 5.6%. State ownership is significant and about 10% in all countries except the U.K. where it is 1%. A noticeable fact is that foreign control is the second most prevalent form of ownership in France, Germany and Italy at between 18 and 28 percent. In the U.K. foreign shareholders play the most significant role: a striking 34% of firms are controlled by a foreign blockholder. Finally, the fraction of companies which have a widely held parent is also significant, although we show in Panel B that many of these companies are wholly owned subsidiaries, particularly in the U.K.

In Panel B, we exclude from the sample wholly owned subsidiaries (as well as those where the parent has 95% or more of the shares) of companies where the holding company is included in the sample. We also split the category of firms with a foreign controlling shareholder into three subcategories – foreign families, foreign states and foreign parent firms that are widely held. The result of the exclusion of wholly owned subsidiaries is that the proportion of companies classified as block controlled with a widely held parent declines significantly in all countries, except Italy; in the case of the U.K. the decline is from 24 to 6 percent and for both France and Germany there is a fall of about 7 percent. The split of foreign controlling shareholders into foreign families, foreign states and foreign widely held parent firms shows that foreign ownership in the U.K. is not only more prevalent than in the other three countries, its composition is also different. In the U.K., foreign blockholders control 35% of all firms compared with domestic blockholders who control only 21.8%. Thus, there are more foreign blockholders in the U.K. than domestic ones. Of the total of 35% of foreign ownership, 22.8% are controlled by widely held parents, and 11.7% are controlled by foreign families. Thus, foreign families control about the same proportion of U.K. firms as domestic families.

Conversely, for the Continental countries the pattern is reversed; domestic blockholders are much more prevalent than foreign blockholders. In Germany, France and Italy domestic blockholders control about 70% of all firms compared with foreign

blockholders who control only about 20%. Of the 20%, most are controlled by widely held parents (13.6% in Germany, 13.4% in France and 17.7% in Italy). Foreign families control much smaller numbers of firms in the three countries than in the U.K. - 3% of firms in Germany, 6% in France and 4% in Italy.

We attribute differences in the influence of foreign control across countries to the degree of openness of capital markets in the U.K. relative to the three Continental European countries, that is, the difference between insider and outsider systems.

Finally, in Panel C we report the ownership types that we will use for the remainder of the paper. In this panel we combine domestic and foreign firms across ownership types. We do so first to increase the statistical power of out tests and second because the difference across ownership types (family, state, widely held parent firm) is likely to be more important that the distinction between domestic and foreign firms. This raises the percentage of family controlled firms in the U.K. from 11.5% in Panel B to the final 23.2% in Panel C, half of which are foreign controlled.

Table 3 partitions the companies described in Panel C of Table 2 into listed and private firms. Panel A shows that 43% of U.K. companies are listed. The proportion of listed companies is much lower in the other three countries, about 17% in Germany, 19% in France and 11% in Italy. The higher proportion of U.K. listed firms in part reflects the size and importance of the country's stock market.[11]

In Panel B we describe the ownership characteristics of the sample of listed companies only. As documented by Barca and Becht (2001), listed firms in France, Germany and Italy are much less likely to be widely held than firms in the U.K. As many as 87% of U.K. listed companies are classified as widely held, compared with only 23% of German, 21% of French and 3% of Italian companies. The large controlling blocks in countries like Italy are held mainly by families, where 66% of all listed companies have a family blockholder; the corresponding proportions are 48% in France, and 35% in Germany. In the U.K. only 8% of listed companies are controlled by families.

In Panel C, we describe the sample of private firms. Particularly for the U.K. we expected the proportion of family controlled family firms to be much higher in private firms than in listed firms, because both mechanisms of dispersion of family control—the raising of external finance and the market for corporate control—are expected to be less effective for private firms. The results show that the proportion of family firms is strikingly similar to

[11] The number of listed companies on the main board in the U.K. exceeds 2,000 firms compared with less than 1,000 in each of the other three countries.

those for listed firms, at 45% in Germany, 47% in France and 56% in Italy. However, in the U.K. the proportion of family [private] firms is 35%, much lower than in Continental European countries, although considerably higher than for U.K. listed companies. This number declines to less than half if only domestic families are considered.

What explains the low proportion of family controlled private companies in the U.K.? One explanation is that in the U.K. there is a more active market for corporate control among both private and listed companies and one which is open to foreign investors. This is not the same for Continental Europe which has a less active market for corporate control and where there are likely to be barriers to foreign ownership.

In Table 4 we compare the size of companies by sales in the four countries. Among listed firms, the median firm size is highest in the U.K. at 1.42 billion Euro. For listed firms French and Italian firms are much smaller than U.K. firms. Further, private companies are smaller than listed ones in all four countries (medians are significantly different in all countries except Germany) and the differences are largest in the U.K. and Italy.

Table 4 shows that for the three Continental countries the size of family and non family firms is remarkably similar. Only in the U.K. are family firms much smaller than non family firms. Thus, for the U.K. family firms are not only less prominent in both the listed and private company sectors but they are also smaller.

4.2. Evolution of ownership from 1996 to 2006

Having established differences between family firms in outsider versus insider systems, we now examine the evolution of ownership structures to test the first hypothesis: Do family firms have a lower chance of survival in outsider compared to insider systems?

For this purpose, we track the history of each company from 1996 to 2006. We first determine whether a firm still exists in 2006 (‘survivors’) or whether the firm has exited (‘exits’). In our classification of firms as survivors we do not require them to stay within the top 1,000 firms. For survivors we determine whether ownership has changed as of December 2006. If it has, we (re)classify companies into the ownership categories previously defined in Section 3. For exits the reasons for non survival include: i) bankruptcy or liquidation and ii) dissolution of the legal entity, for example through acquisition.

In Panel A of Table 5 we show that survival patterns are similar between countries. The proportion of companies in our 1996 sample that survived as independent entities in 2006 was 55% in Germany, 70% in France, 63% in the U.K. and 63% in Italy. Of those that

survived 37% remained in the top 1,000 in Germany, 51% in France, 43% in the U.K., and 36% in Italy.

Panel B reports the transition matrix from 1996 to 2006, conditional on the firm surviving as an entity. For tractability we aggregate ownership categories into family controlled, widely held, state controlled, and others. The main conclusion is that, with the exception of family firms in the U.K., there is considerable stability of ownership across time in all countries. Stability of control means that firms do not switch from one form of control to another over the decade. In the table, stability of control translates into high percentages on the matrix diagonals.

The largest change in family ownership occurs in the U.K. Of all family controlled firms in 1996 that survived until 2006, only 44% remained family firms in 2006. The remaining 61% have become non-family firms. Family ownership in the Continental European countries on the other hand is much more stable than in the U.K. By 2006 74% of German family firms had survived and 64% and 78% in France and Italy, respectively. Family control in Continental Europe therefore is 20 to 33 percent more stable than in the U.K.

The story for widely held is somewhat different. In all four countries widely held firms predominantly stay widely held. The likelihood of remaining widely held in 2006 is lowest in Germany at 56%, and it is highest in Italy at 81%. Of the 44% that did not survive as widely held in Germany, one fifth were acquired by families and four fifths were acquired by other block holders, including private equity.

In summary, we find evidence in favour of the hypothesis that family firms have a lower chance of survival as family-controlled firms in outsider compared to insider systems. Conditional on survival, a U.K. family firm is roughly half as likely to remain under family control as a family firm in Continental Europe.

4.3. Determinants of family control

Our second hypothesis is that, as they age, firms are less likely to be family controlled in outsider systems versus insider systems. We therefore expect firm age to be negatively correlated with family ownership in the U.K., but not in Continental Europe.

The results show strong support for the hypothesis. Table 6 reports probit regressions where the dependent variable is whether the firm is controlled by a family in 1996. The

regressions control for industry fixed effects by including industry dummies for the Fama and French 48 industries.[12]

The regression results show that firm age is a significant determinant of the probability of family ownership. We measure firm age both by number of years since incorporation and by its age cohort, where we divide companies into age deciles, with cohort 1 being the youngest and cohort 10 being the oldest. The results show that there is an important difference between the U.K. and Continental Europe. While in the U.K. older firms are less likely to be family controlled, there is no effect of age in Continental Europe. This is demonstrated by the interaction of both age variables with the U.K. dummy variable being negative and significant. Age on its own is not significant and not an explanatory variable for the probability of family control in Continental Europe.[13]

We now examine what is the mechanism that may lead to dilution of family ownership in outsider systems. We consider two mechanisms, the need to raise external capital to finance growth and the activity of the market for corporate control.

4.4. Can external financing requirements explain family ownership?

If raising external capital to finance growth is the motive to dilute family ownership, family firms should be concentrated in industries with lower external financing needs.

In this section we first describe the industry composition and concentration in each of the four countries. We then test the hypothesis that families are concentrated in industries which rely less on external finance than other industries where ownership is typically non family. In doing so, we measure external dependence using the proxies developed by Rajan and Zingales (1998). Using U.S. firm level data they measure the ratio of capital expenditure financed by newly issued debt—including bank debt—and equity. This measure is then aggregated at the industry level and used across countries as a measure of the natural level of dependence on external finance of the industry.

In Table 7 we find that there is significant industry concentration among family companies. Panel A reports the number of family firms in each industry as a percentage of all firms in that industry, for the 20 industries with the largest numbers of family controlled firms in our sample. Panel B reports two concentration measures. C5 measures the number of family firms that are concentrated in the five industries with the highest number of family

[12] Fama and French industry statistics for the whole sample are provided in Appendix B.

[13] This also rules out the possibility that the life cycle of family firms in Continental Europe may simply be longer than in the UK. Even if a longer life cycle applied in Continental Europe, age would then be an explanatory variable for family control in Continental Europe. We allow for a different life cycle length by interacting U.K. with age, i.e. we allow for a different slope dummy.

firms as a percentage of all family firms. C20 is a similar measure to C5 but is based upon the twenty industries with the highest number of family firms. C5 shows that 48% of all family companies are concentrated in five of the 48 Fama French industries: wholesale, business services, retail, financials and consumer goods. However, there are differences in industry concentrations across countries. For example, in Italy only 36% are in the top five industries compared with 63% in France, 59% in Germany and 55% in the U.K. The industry concentration of family firms in the four countries seems to be broadly in line with industry concentration of family firms in the U.S., as reported by Villalonga and Amit (2008).

Under the traditional view we would expect family firms to be more common in sectors that depend less on external finance. To mitigate concerns over endogeneity we use COMPUSTAT data for the U.S. from 1987 to 1996 and calculate the Rajan and Zingales external dependence measure for all 48 Fama and French U.S. industries. We include a control for industry composition in the different countries, as measured by the relative proportion of firms in each industry in each country.

In Table 8, we test whether family firms are more likely to survive in industries with lower dependence on external finance. There are two ways in which we can analyze this relationship. First, we can look at the determinants of family ownership in the 1996 snapshot and check whether family ownership is more common in sectors that are more dependent on external capital. This is done in columns (1) and (2). Alternatively, we can look at the evolution of family controlled firms over the 1996-2006 decade and test whether family firms are more likely to survive over the decade in sectors that are less dependent on external finance. This is done in columns (3) and (4).

In columns (1) and (2), the dependent variable is a dummy for whether the firm is family controlled or not in 1996. We find that in the U.K. external dependence is negatively correlated with family control, while there is no such correlation in the other three countries. This can be seen from the coefficient of the interaction between the U.K. dummy and external dependence, which is negative and strongly significant. The probit regressions include industry and country fixed effects. These results are confirmed by regressions reported in columns (3) and (4), where the dependent variable is a dummy for survivorship over the 1996-2006 decade. In this case we restrict the sample to family firms to focus on the survival of family firms. and show that the probability of survival is lower in sectors that have higher dependence on external capital in the U.K., but not in the other three countries. The relevant coefficient is again the interaction between the U.K. dummy and external dependence, which is statistically difference from zero and negative.

These results suggest that the external financing hypothesis only applies to the U.K. One reason might be that family businesses are so important on the Continent that they are able to create institutions that help them overcome financial constraints. This may be either because family companies benefit from relationship banking, business groups, and political power; or simply because in Continental Europe there are stronger barriers to the market for corporate control. Hence, unlike their U.K. counterparts, they are able to thrive even in industries with high external financing dependence.

4.5. Performance

We now turn to the analysis of firm performance and hypothesis H4 in Table 9. The hypothesis states that the markets for corporate control will equate profitability across ownership types in outsider systems, but not in insider systems. Therefore no difference in profitability should exist between family and non-family firms in outsider systems, but we may observe a difference in profitability in insider systems. That difference is likely to be in favour of family firms.

The results in Table 9 confirm these predictions using a variety of performance regression. The dependent variables are operating profit in regressions (1) to (3) (scaled by assets, sales and book equity), sales growth in (4), book leverage in (5) and labor costs in (6).

First, we find that family firms are marginally more profitable than non-family firms in Continental Europe, while we find no difference between family and non-family firms in the U.K. The performance difference between family and non-family firms in Continental Europe can be seen from the coefficient of the interaction of a family firm dummy with a non-U.K. dummy, *(Non U.K.) x (Family firm)*, which is positive and significant in (1) and (2) and positive but not significant in (3) and (4). The lack of a performance difference between family and non-family firms in the U.K. can be seen from the corresponding interaction for U.K. family firms, *(U.K.) x (Family firm).* The interaction term coefficient is negative in (1) to (4), but not significantly different from zero (with the exception of return on sales in column (2), where the difference is significant at the 5% level). Therefore, consistent with an efficient working of the market for corporate control in hypothesis H4, family firms in the U.K. are as profitable as U.K. non family firms. Note that the U.K. dummy on its own is also positive and significant suggesting that U.K. firms are more profitable than Continental European firms. However, the comparison across countries should be interpreted with caution as it may be affected by accounting differences.

What are the welfare implications of these results about the relative performance of family firms? If insider systems were to move towards outsider system characteristics, profitability differences between family firms and widely held firms should disappear. Then family shareholders' welfare would decrease, but welfare overall would increase.

In columns (5) and (6) we also compare leverage and labour costs across firms. We do not find any statistical difference in labour costs between family and non-family firms. This is in contrast with the results in Sraer and Thesmar (2007), who find that family firms pay lower wages than non-family ones. Further, we find that family firms are less levered than non-family ones. This is consistent with the results for the U.S. in Anderson, Mansi and Reeb (2003).

5. The evolution of family firms

In this section we provide evidence on a second sample of companies consisting of all family-controlled listed firms in 1996 in our four countries. We use this sample to study in greater detail the evolution of ownership in family firms. Specifically, we can now be more precise about the reasons why a family firm does not survive over the decade, distinguishing between takeovers, going private, dilution of control and insolvency. This allows us to test more precisely the hypothesis that differences in the efficiency of the market for corporate control are at the source of the differences in the evolution of family firms in outsider and insider countries. We also analyze how family characteristics such as CEO being a family member, affect survival as a family firm. Finally, we will compare our methodology for classifying family controlled companies with the one employed in F-L.

5.1. The family within the family firm

For each of the 827 listed firms in the sample, we collected information on the name of the controlling family and whether it was descended directly from the firm's founder. As shown in Table 10, this is true for almost 70 percent of family firms across all four countries. There are interesting differences across countries: 91.2 percent of U.K. family firms are controlled by a descendant of the founder while in half of the cases German companies are controlled by a different family than the founding family. This indicates that family firms are very active as acquirers of companies in Germany (and in the rest of Continental Europe) but not at all in the U.K. As an example, in July 2008 Schaeffler Group, a private company owned by the German Schaeffler family, acquired a majority stake in Continental AG, a large German tyre manufacturer that was previously widely-held, for about 12 billion Euro. Such a transaction

by a family-controlled firm would be highly unlikely in the U.K., in large part because of their smaller size.

We also identify the cases where a family member is the CEO, where control is divided among more than one individual, as well as the age of the firm and which generation of family members is in control of the company. In the U.K. and in Italy, family firms are younger and are more often run by the founder than in France and Germany. Furthermore, we have collected information on the history of each firm in the period 1996-2006. By 2006, a firm may still be in family control or may have been taken private by the controlling family. We classify these two outcomes together as no change of control. Alternatively, the firm may have become widely held, insolvent or may have been acquired. These three outcomes are combined and classified as a change of control. We find that almost half of our companies have undergone a change of control. In the U.K., 70 percent of family firms went through a change of control (having become widely held or acquired) compared with only 27 percent of firms in Italy, 49% in Germany and 41% in France. The differences in the frequency of control changes confirm our life cycle results: family firms in the U.K. are significantly more likely to experience a change of control than their Continental European counterparts. The most common reason for family firms to change their form of ownership is a takeover, which confirms our hypothesis that the market for corporate control is an important mechanism for the evolution of family ownership.

The second most common reason for ownership changes in the U.K. is for family firms to become widely held, without a takeover: this happens in 37% of all control changes in the U.K., while it happens in only 10 to 20 percent of control changes in the other three countries. This indicates that the need for raising capital is an important reason for dilution of family ownership in the U.K.

In Table 11, we turn to a multivariate analysis of the changes of control in family firms. Specifically, we investigate which family characteristics most influence the likelihood of survival of a family firm. The characteristics include a dummy as to whether the family that is in control in 1996 is the founding family, whether control is divided among family members, the size of the block held by the family, whether the CEO is a family member and which generation of the family is in control. The dependent variable is a dummy for whether a change of control happened during the 1996-2006 period for firms that are family controlled and listed in 1996.

We confirm the univariate result that the probability of a change of control for family firms is significantly higher in the U.K. than in Continental Europe (the coefficient for the

U.K. dummy is positive and significant). Furthermore, changes of control are more likely if the family owns a small equity stake or if the equity stake is divided between more than one family member. We find that the age of the controlling family as measured by the generation from the founder does not matter. Founding family ownership however matters—we find that firms still controlled by the descendants of the founder in 1996 have a significantly lower probability of experiencing a subsequent change of control. Finally, firm size as measured by the log of sales has a negative impact on the probability of a change in control.

The analysis also shows that the higher likelihood of control changes away from family control in the U.K. relative to Continental Europe is not simply due to U.K. families holding smaller initial stakes. While Table 10 shows that U.K. families *do* hold smaller initial stakes in the firms they control, the U.K. dummy in all regressions in Table 11 is positive and significant even when controlling for the size of the family voting block. Still, due to smaller family stakes, control changes in the U.K. on average can be triggered by smaller transfers of voting rights outside the family than in Continental Europe.

These results are related to the growing literature on the relation between family characteristics within family firms and performance, to the extent that a change of control is a measure of performance. We confirm the results in Anderson and Reeb (2003) and Barontini and Caprio (2005) that founding family control is positively related to performance. However, we do not find evidence that second or higher generations are associated with higher chances of control changes. This result is potentially in conflict with the existing evidence that passing control from founder to descendants is associated with a reduction in performance (Pérez-González, 2006, Villalonga and Amit, 2006, and Morck, Strangeland and Yeung, 2000).

A new result is our finding that if the family stake is divided between at least two family members, there is a higher likelihood of a control transfer over the following decade. This may be an indication that dispersion of blocks among family members may lead to conflicts within the family over control and ultimately to a sale of the business itself. This is reminiscent of the finding for Thai business groups in Bertrand et al (2008), where dividing the family business among more descendants leads to lower subsequent performance.

5.2. Comparison with Faccio and Lang (2002)

We now turn to the direct comparison of our ownership classification of listed family companies with the classification of F-L. This comparison is important because the data set provided by F-L is the most widely used ownership data set for European firms.

The main methodological difference between F-L's and our approach to identify ultimate owners is that F-L do not collect information on the ownership of private firms, while we do. The ownership of private firms is important for public firms if a private firm appears anywhere in the chain of control that leads to the ultimate shareholder. This is frequently the case.[14] Our approach is to identify the controlling shareholder of all private firms in the control chain. F-L's solution is to assume for all such cases that the controlling shareholder is a family. We show below that 28% of the firms that F-L classify as family controlled are *not* family controlled and that the overwhelming majority of these misclassifications is due to their simplifying assumption about private firms. The obvious implication is therefore that an analysis of ultimate ownership of listed firms must take into account the true ownership structures of private firms that are involved in controlling these listed firms. We believe that this result is an important issue for empiricists to consider in future work.

We begin with F-L's sample of 1,359 listed companies, classified as family-controlled around 1996. We subject these 1,359 firms to our methodology of tracing controlling stakes to the ultimate controlling shareholder. According to our analysis only 827 of the 1,359 firms are in fact controlled by families. We do not classify as family firms the remaining 532 firms—or 39% of the F-L sample of family firms—because of clear-cut misclassifications (28%), ambiguous listing status of firms (4.3%) and cases where we have no information on the ultimate owner to confirm or reject the F-L classification (7.6%).

Table 12 shows in detail how these classification differences arise. In Panel A we report the original F-L family firm sample and compare it with our results. F-L report 417 listed family firms in Germany, 395 in France, 425 in the U.K. and 122 in Italy. F-L decompose these into two categories. The first category, 'controlled by a family' consists of firms that are unambiguously identified as family controlled. The second category, 'controlled by an unlisted company' consists of firms that are controlled by a private company and F-L assume the private company is a control vehicle of a family and therefore the original firm is similarly family controlled. Roughly half of the firms (652) have a family as their ultimate owner and the other half (707) have an unlisted company as their ultimate owner. We believe that only 827 (about 60 percent) of the 1,359 companies are in fact family-controlled firms.

Panel B breaks down the differences in classification according to the F-L methodology. We use the numbers for Germany to illustrate the results. For Germany we

[14] We find that if a public firm has one or several controlling shareholders, the vast majority of them are either natural persons or private firms. Other entities such as foundations are rare.

disagree with F-L's classification for 164 cases (417 original family firms in F-L minus 253 family firms in our study). Out of these 164 cases, 32 are firms that according to F-L are unambiguously identified as family controlled, and 132 are firms that F-L *assume* to be family controlled because of a private company somewhere in the control chain. [15] The large majority of cases (132 out of 164) that we regard as misclassifications therefore originate from the subsample of *assumed* family control in F-L. This pattern is very similar in the three other countries. In France, 98 out of 144 misclassifications are due to assumed family control, in the U.K. 154 out of 208 and in Italy 11 out of 16. The incidence of misclassification is therefore much higher among the firms controlled by an unlisted company. Comparing the F-L classifications in Panel A with the misclassifications in Panel B it turns out that *the assumption of family control of private firms is wrong in 55% of cases* (395 misclassifications out of 707 firms controlled by a private company). We believe this is strong evidence against using their assumption.

Finally, Panel C provides the three reasons for the disagreement between F-L's and our classifications, for all 532 firms or 39% of the original F-L sample of family firms. First and most importantly, for 28% of the original F-L sample we can conclusively show that the firm is not controlled by a family. The importance of this misclassification varies across countries, with Italy being the country with the lowest number of misclassifications (13% of the original sample), and the U.K. being the country with the highest number of misclassifications (33%). Second, for 4.3% of the original F-L sample we do not find any evidence that the company was listed in 1996. This may be caused by either F-L sampling the company at a later date, by including some (large) unlisted companies or by the firm being listed on a minor stock exchange. This happens only in the U.K. and Germany. Third, for 7.6% of the original F-L sample we were not able to identify the ultimate controlling shareholder. Hence, we can neither confirm nor reject the classification as a family firm for these cases.

6. Conclusion

We provide a detailed comparative analysis of the largest 1,000 private and listed companies in each of the four largest economies in Western Europe (France, Germany, Italy and the U.K.), over the 1996-2006 decade. Our paper makes three main contributions.

First, it focuses on both listed and private companies, while existing studies have been restricted to listed companies only. Because listed companies represent a smaller fraction of

[15] F-L clearly state the distinction between these two categories of family firms in Table 3 (p. 379) of their paper.

the economy in Continental Europe than in the U.K., exclusive emphasis on listed companies distorts any comparative analysis. By way of illustration, less than 20 percent of the top 1,000 companies in France, Germany and Italy are listed, compared with 43 percent of British companies. Moreover, family firms are far more common among private companies, thereby understating the importance of family firms in the economy when focusing only on listed companies.

Second, we document how ownership evolves over time. Existing research has provided little clue as to whether and how ownership might change. To illustrate the importance, more than a third of the top 1,000 companies in each country in 1996 do not survive the decade, mostly because of acquisitions. Among listed family firms, more than 40 percent of them in Continental Europe and 70 percent of them in the U.K. experience control changes over the decade. Our sample traces all such control changes.

Third, our results provide support for the hypothesis that the trade-off between family control and widely held firms is different between outsider systems (like the U.K.) and insider systems (like France, Germany and Italy). In particular, we find that ownership is more stable in insider systems than in outsider systems and family companies have a higher probability of becoming non-family firms in outsider systems than in insider systems. Ownership structures change asymmetrically across age cohort and countries. Whereas firm age has a negative effect on the probability of family ownership in the U.K., an outsider system—consistent with a firm life cycle theory of ownership—there is no significant effect of firm age on the probability of family ownership in France, Germany and Italy, which are insider systems.

A question left for future research is whether we observe convergence of financial systems and ownership structures in Europe. Over the last decade extensive corporate governance reforms have been implemented in Continental Europe and as a result many countries classified as insider systems in 1996 have acquired (some) regulatory characteristics of outsider systems. An interesting question for future work is therefore whether and if so how much this regulatory convergence is narrowing the differences in ownership structures in Europe.

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Table 1: Investor Protection, Financial Development and Market for Corporate Control in 1996 for France, Germany, Italy and the U.K.

Antidirector rights measure the rights of minority shareholders against directors, as revised by Djankov et al. (2008). Law and order is the index produced by the International Country Risk Guide to assess the legal system and de-facto law and order quality of a country. Anti-self-dealing is the indicator produced by Djankov et al. (2008) to measure the power of minority shareholders against self-dealing by managers and controlling shareholders. Stock market capitalization over GDP is the ratio of the stock market capitalization to GDP for 1996. Domestic credit to private sector is measured as the ratio of the domestic credit to the private sectors and GDP. Source: World Development Indicators 1997. The number of listed firms is scaled by its population (in millions) in 1996. The number of IPOs scaled by the number of listed firms is defined as the ratio of the number of initial public offerings of equity in a given country to the number of listed companies for 1996. The number of domestic IPOs and the number of domestic listed firms are from country-level stock market statistics; while population is from World Development Indicators. The frequency of hostile takeovers is the average number of listed companies that were target of an unsolicited offer in the 1992-1996 period scaled by the number of listed companies in 1996. Source: SDC Platinum. The voting premium is the total voting equity value as a share of firm's market value from Nenova (2000), Table 6. The block premium is the difference between the price per share paid for the control block and the exchange price two days after the announcement of the control transaction, as a percentage of the exchange price two days after the announcement from Dyck and Zingales (2004), Table 6.

	France	Germany	Italy	U.K.
Panel A. Investor protection				
Antidirector rights	3	1	1	5
Law and order	0.81	0.83	0.58	0.97
Anti-self-dealing	0.38	0.28	0.42	0.95
Panel B. Financial development				
Stock market capitalization / GDP (%)	31.8	21.8	18	119.5
Domestic credit to private sector / GDP (%)	84.1	102.7	52.3	112.3
Number of listed firms /Population	11.83	8.30	4.28	35.22
Initial public offerings/ Listed firms (%)	3.21	2.94	4.92	9.14
Panel C. Market for corporate control				
Hostile takeovers (%)	0.03	0.00	0.00	0.18
Panel D. Private benefits of control				
Voting premia (%)	28.2	14.8	34.5	9.0
Block premia (%)	5.0	1.0	30.0	3.0

Table 2: The Landscape of Ownership in 1996 for France, Germany, Italy and the U.K.

This table reports percentages of ownership types for the largest 1,000 firms by sales in the four countries in 1996. Panel A reports figures for all firms for which ownership data are available. Panel B reports figures for all firms that meet the criterion of Panel A and which are not controlled by other firms with 95 percent of voting rights or higher. Panel C reports figures for all firms that meet the criterion of Panel A and combines domestic and foreign block shareholder categories.

Panel A: Largest 1,000 firms

Ownership types (in percent)	Germany	France	U.K.	Italy
Multiple blocks	4.4%	2.0%	0.3%	2.0%
Family	35.9%	38.4%	10.9%	47.9%
Foreign	18.4%	20.6%	33.9%	27.6%
Other	2.1%	3.2%	2.8%	2.2%
State	12.1%	8.8%	1.0%	12.5%
Widely held	9.9%	8.9%	27.4%	5.6%
Widely held parent	17.2%	18.2%	23.7%	2.3%
TOTAL number of firms	923	970	980	954

Panel B: Largest 1,000 firms, wholly owned subsidiaries eliminated, foreign controlled firms split into subcategories

Ownership types (in percent)	Germany	France	U.K.	Italy
Domestic block shareholder				
Multiple blocks	*5.0%*	*2.6%*	*0.5%*	*2.2%*
Family	*39.5%*	*40.9%*	*11.5%*	*53.2%*
Other	*1.8%*	*3.7%*	*2.7%*	*2.9%*
State	*12.9%*	*9.7%*	*1.3%*	*10.8%*
Widely held parent	*10.6%*	*10.7%*	*5.8%*	*2.2%*
Total	**69.9%**	**67.6%**	**21.8%**	**71.3%**
Foreign block shareholder				
Family	*3.4%*	*5.7%*	*11.7%*	*3.6%*
State	*1.4%*	*0.9%*	*0.8%*	*0.1%*
Widely held parent	*13.6%*	*13.4%*	*22.8%*	*17.7%*
Total	**18.4%**	**20.0%**	**35.3%**	**21.4%**
Widely held	**11.8%**	**12.4%**	**42.9%**	**7.3%**
TOTAL number of firms	714	680	624	725

Panel C: Largest 1,000 firms, wholly owned subsidiaries eliminated, foreign and domestic blockholders combined

Ownership types (in percent)	Germany	France	U.K.	Italy
Multiple blocks	5.0%	2.6%	0.5%	2.2%
Family	42.9%	46.6%	23.2%	56.8%
Other	1.8%	3.7%	2.7%	2.9%
State	14.3%	10.6%	2.1%	10.9%
Widely held	11.8%	12.4%	42.9%	7.3%
Widely held parent	24.2%	24.1%	28.5%	19.9%
TOTAL number of firms	714	680	624	725

Table 3: Ownership of Listed Versus Private Firms in 1996 in France, Germany, Italy and the U.K.

This table reports statistics on the largest 1,000 firms by sales in the four countries in 1996 after the exclusion of wholly owned subsidiaries and combining domestic and foreign block shareholder types as in Table 2, Panel C. Panel A reports the percentage of listed firms in each of the four countries. Panel B and C describe the ownership structure of listed firms and private firms, respectively.

Panel A: Frequency of listed firms

	Germany	France	U.K.	Italy
Listed firms, percent of all firms	17.4	19.3	42.6	11.0

Panel B: Only listed firms among largest 1,000, wholly owned subsidiaries eliminated

Ownership types (in percent)	Germany	France	U.K.	Italy
Multiple blocks	4.0%	0.8%	0.4%	3.8%
Family	34.7%	48.1%	7.5%	66.3%
Other	0.0%	8.4%	1.5%	0.0%
State	12.9%	8.4%	0.4%	18.8%
Widely held	23.4%	20.6%	87.2%	2.5%
Widely held parent	25.0%	13.7%	3.0%	8.7%
TOTAL number of firms	124	131	266	80

Panel C: Only private firms among largest 1,000, wholly owned subsidiaries eliminated

Ownership types (in percent)	Germany	France	U.K.	Italy
Multiple blocks	5.3%	3.1%	0.6%	2.0%
Family	44.6%	46.3%	34.9%	55.7%
Other	2.2%	2.6%	3.6%	3.3%
State	14.6%	11.1%	3.4%	9.9%
Widely held	9.3%	10.4%	10.1%	7.9%
Widely held parent	24.1%	26.6%	47.5%	21.2%
TOTAL number of firms	590	549	358	645

Table 4: Comparison of Total Sales in Billions of Euro in 1996 in France, Germany, Italy and the U.K.

This table reports mean and median sales for the largest 1,000 firms by sales in the four countries in 1996 after the exclusion of wholly owned subsidiaries. Summary statistics are reported for the whole sample and for sub-samples of listed firms, private firms, family controlled firms, non-family firms, firms with domestic blockholders, firms with foreign blockholders, widely-held firms and non-widely held firms.

Selection criterion		Germany	France	U.K.	Italy
All firms	Median	1.19	0.61	1.06	0.21
	Mean	2.97	1.68	2.40	0.67
	N	711	680	624	725
Listed firms	Median	1.25	0.79	1.42	0.52
	Mean	5.40	4.17	3.27	2.57
	N	124	131	266	80
Unlisted firms	Median	1.18	0.58	0.86	0.20
	Mean	2.45	1.09	1.72	0.46
	N	587	549	358	645
Family firms	Median	1.20	0.53	0.78	0.20
	Mean	2.37	1.17	1.42	0.48
	N	306	317	145	412
Non-family firms	Median	1.18	0.68	1.19	0.24
	Mean	3.41	2.13	2.67	0.97
	N	405	363	479	313
Domestic firms	Median	1.18	0.60	0.87	0.21
	Mean	2.63	1.51	1.68	0.77
	N	498	460	136	517
Foreign firms	Median	1.18	0.58	0.90	0.22
	Mean	2.03	1.05	1.66	0.48
	N	130	136	220	155
Widely held firms	Median	1.33	0.65	1.49	0.19
	Mean	6.47	3.67	3.32	0.58
	N	83	84	268	53
Non-widely held firms	Median	1.18	0.60	0.87	0.21
	Mean	2.51	1.41	1.67	0.70
	N	628	596	356	672

Table 5: The Life Cycle of Family Ownership from 1996 to 2006 in France, Germany, Italy and the U.K.

This table reports data on the life cycle of family ownership for the largest 1,000 firms by sales in the four countries in 1996 after the exclusion of wholly owned subsidiaries. Panel A reports survival rates of firms over the decade. Panel B reports transition matrices for firm ownership types over the decade. The reported percentages are conditional survival probabilities. To illustrate reading the table: Conditional on the firm surviving the decade 1996 to 2006, in Germany out of all 138 firms that are family controlled in 1996, 102 (74%) are still family controlled in 2006.

Panel A: Survival of the firm

	Germany	France	U.K.	Italy	TOTAL
Number of firms in the TOP 1,000 in 1996 after eliminating wholly owned subsidiaries	714	680	624	725	2743
Survival as entity:					
Firm is among TOP 1,000 in 1996 and still exists as an entity in 2006 (%)	55.2%	69.7%	62.7%	65.1%	63.1%
Survival at the TOP:					
Firm is among TOP 1,000 in 1996 and still exists as an entity among the TOP 1,000 in 2006 (%)	37.1%	50.6%	42.5%	36.3%	41.5%

Panel B: Survival of ownership - transition matrices

Germany

	Family in 2006		Widely held in 2006		State in 2006		Other in 2006		No of firms
Family in 1996	102	(74%)	17	(12%)	0	(0%)	19	(14%)	138
Widely held in 1996	5	(10%)	29	(56%)	1	(2%)	17	(33%)	52
State in 1996	5	(7%)	7	(10%)	37	(54%)	19	(28%)	68
Other in 1996	21	(18%)	5	(4%)	3	(3%)	86	(75%)	115

France

	Family in 2006		Widely held in 2006		State in 2006		Other in 2006		No of firms
Family in 1996	135	(64%)	17	(8%)	4	(2%)	54	(26%)	210
Widely held in 1996	6	(9%)	50	(75%)	0	(0%)	11	(16%)	67
State in 1996	8	(14%)	3	(5%)	32	(57%)	13	(23%)	56
Other in 1996	26	(19%)	7	(5%)	5	(4%)	97	(72%)	135

U.K.

	Family in 2006		Widely held in 2006		State in 2006		Other in 2006		No of firms
Family in 1996	41	(44%)	11	(12%)	2	(2%)	39	(42%)	93
Widely held in 1996	10	(6%)	106	(62%)	1	(1%)	53	(31%)	170
State in 1996	1	(11%)	0	(0%)	6	(67%)	2	(22%)	9
Other in 1996	18	(15%)	1	(1%)	1	(1%)	99	(83%)	119

Italy

	Family in 2006		Widely held in 2006		State in 2006		Other in 2006		No of firms
Family in 1996	208	(78%)	17	(6%)	6	(2%)	36	(13%)	267
Widely held in 1996	5	(14%)	29	(81%)	0	(0%)	2	(6%)	36
State in 1996	12	(28%)	4	(9%)	27	(63%)	0	(0%)	43
Other in 1996	15	(15%)	1	(1%)	4	(4%)	81	(80%)	101

Table 6: Testing the Life Cycle Hypothesis Using Ownership Data from France, Germany, Italy and the U.K.

Firm age is measured by firm age in years and by firm age cohorts, where firms are divided into age quintiles and deciles. All regressions include industry fixed effects and country fixed effects (not reported). Robust standard errors are clustered by country and reported in brackets. * indicates a coefficient significantly different from 0 at 10% confidence level; ** indicates significance at 5% and *** at 1%.

Dependent variable:	Firm is family controlled (1) or not (0)			
Regression type	Probit	Probit	Probit	Probit
Firm age	0	0.001		
	[0.002]	[0.002]		
(U.K.) X (Firm age)		-0.007***		
		[0.002]		
Firm cohort (deciles)			-0.006	0.01
			[0.020]	[0.028]
U.K. X Firm cohort deciles				-0.075***
				[0.026]
Log (Sales)	-0.146***	-0.145***	-0.146***	-0.145***
	[0.031]	[0.033]	[0.031]	[0.033]
Foreign control	-0.697*	-0.716**	-0.697*	-0.713**
	[0.359]	[0.350]	[0.358]	[0.352]
Listed firms	-0.514**	-0.519**	-0.505**	-0.506**
	[0.258]	[0.262]	[0.256]	[0.258]
Industry fixed effects	YES	YES	YES	YES
Country fixed effects	YES	YES	YES	YES
Observations	2663	2663	2663	2663
R^2	0.154	0.154	0.156	0.156

Table 7: Top 20 Industries with the Highest Concentration of Family Ownership for 1996 for France, Germany, Italy and the U.K.

Panel A lists the 20 industries with the largest number of family controlled firms in our sample. Panel B reports two measures of industry concentration: C-5 (C-20) measures the number of family firms that are concentrated in the 5 (20) industries with the highest number of family firms as a percentage out of all family firms firms.

Panel A: Industry concentration among family firms					
Fama and French industry	Germany	France	U.K.	Italy	Total
Wholesale	41%	51%	21%	26%	212
Business services	52%	34%	18%	58%	139
Retail	66%	71%	29%	83%	89
Financials	0%	30%	5%	100%	63
Consumer goods	62%	56%	13%	63%	63
Transportation	34%	21%	17%	63%	47
Food products	23%	73%	36%	64%	44
Construction	41%	65%	9%	44%	42
Machinery	18%	48%	8%	92%	42
Steel works	59%	29%	3%	28%	40
Candy and soda	28%	22%	14%	47%	37
Printing and publishing	100%	10%	27%	87%	32
Pharmaceutical products	14%	14%	3%	14%	27
Construction materials	73%	25%	6%	88%	26
Automobiles and trucks	35%	21%	3%	42%	24
Real estate	53%	20%	88%	34%	23
Business supplies	72%	75%	18%	44%	22
Chemicals	20%	5%	2%	23%	21
Textiles	92%	100%	68%	100%	21
Banking	55%	41%	16%	29%	19
Panel B: Concentration of family firms in top 5 and top 20 industries					
C5	59.0%	62.5%	54.5%	36.0%	48.0%
C20	94.5%	94.0%	86.6%	86.4%	87.6%

Table 8: Dependence on External Financing in France, Germany, Italy and the U.K.

This table reports probit regressions where the dependent variables are whether a firm is family controlled (1) or not (0) and whether a firm survives the decade (1) or not (0), for the largest 4,000 firms by sales in the four countries after eliminating wholly owned subsidiaries. Firm age is measured by firm age in years and by firm age cohorts, where firms are divided into age quintiles and deciles. All regressions include industry fixed effects and country fixed effects (not reported). The measure of external dependence is computed at the industry level following Rajan and Zingales (1998) and using COMPUSTAT data for the U.S. from 1987 to 1996. Robust standard errors are clustered by country and reported in brackets. * indicates a coefficient significantly different from 0 at 10% confidence level; ** indicates significance at 5% and *** at 1%.

Dependent variable:	Firm is family controlled (1) or not (0)		Firm survives the decade (1) or not (0)	
Probit regression sample:	All firms	All firms	Family firms	Family firms
	(1)	(2)	(3)	(4)
Firm age	0.001	0.002	0.004**	0.004**
	[0.002]	[0.002]	[0.002]	[0.002]
(U.K.) X (Firm age)	-0.007***	-0.007***	-0.006***	-0.005***
	[0.002]	[0.002]	[0.002]	[0.002]
(U.K.) X (External dependence)		-0.241***		-0.753***
		[0.058]		[0.224]
Log (Sales)	-0.145***	-0.143***	0.022	0.023
	[0.033]	[0.032]	[0.031]	[0.035]
Foreign control	-0.716**	-0.717**	-0.08	-0.07
	[0.350]	[0.352]	[0.100]	[0.097]
Listed firms	-0.519**	-0.524**	0.339	0.367**
	[0.262]	[0.259]	[0.214]	[0.185]
Industry fixed effects	YES	YES	YES	YES
Country fixed effects	YES	YES	YES	YES
Observations	2663	2642	1060	1049
R^2	0.156	0.157	0.071	0.076

Table 9: Comparison of Performance of Family versus non Family Firms in France, Germany, Italy and the U.K.

This table reports performance regressions for the largest 4,000 firms by sales in the four countries after eliminating wholly owned subsidiaries. Unless otherwise indicated all accounting items are as of December 1995. *P* is operating profit. Book equity is shareholder funds. Sales growth is average annual sales growth from 1991 to 1995. Book leverage is total debt over total assets. Labor costs are employment costs over sales. Robust standard errors are clustered by country and reported in brackets. *, ** and *** indicate a coefficient significantly different from 0 at the 10%, 5% and 1% confidence level. ND indicates no significant difference at the 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)
Estimation method	OLS	OLS	OLS	OLS	OLS	OLS
Dependent variable	*P/Assets*	*P/Sales*	*P/Book equity*	Sales growth	Book leverage	Labor costs
(Non U.K.) x Family firm	0.014***	0.012***	0.03	0.017	-0.018**	0.008
	[0.004]	[0.004]	[0.023]	[0.013]	[0.008]	[0.007]
U.K.	0.029***	0.022***	0.027	0.042***	-0.052***	-0.047***
	[0.005]	[0.005]	[0.026]	[0.014]	[0.011]	[0.008]
(U.K.) x (Family firm)	-0.011	-0.013**	-0.05	-0.001	-0.001	-0.008
	[0.007]	[0.006]	[0.040]	[0.022]	[0.018]	[0.010]
Log (Sales)	0.006***	0.003	0.020***	0.005	0.026***	-0.010***
	[0.001]	[0.002]	[0.005]	[0.004]	[0.003]	[0.003]
Listed firm	0.000	0.005	-0.066***	-0.001	-0.095***	0.028***
	[0.004]	[0.004]	[0.018]	[0.013]	[0.009]	[0.007]
Foreign control	0.007	-0.001	0.043*	0.029**	-0.001	-0.023***
	[0.005]	[0.004]	[0.026]	[0.014]	[0.009]	[0.007]
Industry and country fixed effects	YES	YES	YES	YES	YES	YES
Observations	1370	1370	1367	1097	2521	1366
R^2	0.128	0.131	0.086	0.089	0.232	0.343
U.K. family vs *non-U.K.* family t-test	ND	ND	ND	ND	*	***

Table 10: Causes of Changes in Ownership in Family-Controlled Listed Firms in France, Germany, Italy and the U.K.

This table reports in Panel A the characteristics of the controlling family for all family-controlled listed firms in 1996 in the four countries. Panel B reports whether and how the status of the firm changed from being a listed family-controlled firm in 1996 over the decade. No change indicates the firm is still a listed firm controlled by the same family as in 1996. Went private indicates the firm delisted. Widely held in 2006 indicates the family no longer holds a controlling stake in 2006 but the firm was not subject to a takeover. Takeover indicates the firm was subject to a takeover. Default indicates the firm went into liquidation. Unknown status indicates the firm's ultimate owner in 2006 or the exact reason for its disappearance over the decade are unknown.

Panel A. Summary statistics for listed family firms in 1996

	Germany	France	U.K.	Italy	Total
Founding family still in control	49.0%	72.3%	91.2%	60.4%	69.7%
CEO is a family member	59.0%	80.8%	81.1%	74.5%	74.1%
Control divided among family members	63.4%	81.0%	47.0%	61.3%	58.5%
Founder in control	15.8%	44.6%	56.2%	57.5%	40.5%
3rd generation in control	45.5%	19.9%	15.2%	22.6%	26.8%
Average voting rights	68.1%	62.1%	41.8%	58.7%	57.9%
ROS	6.1%	18.9%	9.4%	2.2%	9.4%
Average age (years)	91.5	71.7	38.6	48.6	66.2

Panel B. Evolution of ownership from 1996 to 2006

	Germany	France	U.K.	Italy	Total
NO CHANGE	104	113	50	56	323
Went private	17	34	15	21	87
Widely held in 2006 (A)	13	17	56	6	92
TAKEOVER (B)	75	81	79	15	250
DEFAULT (C)	26	6	17	8	57
Unknown status	18	0	0	0	18
Total	253	251	217	106	827
Frequency of changes in control (A+B+C)	48.5%	41.4%	70.0%	27.4%	48.3%

Table 11: Family Characteristics as Determinants of Ownership Changes among Listed Family Firms

The table reports the estimates of a probit model for all family-controlled listed firms in 1996 in the four countries. The dependent variable is whether the firm experiences a change of control during the period (1) or not (0). A change of control is defined as a case where a family-controlled firm in 1996 is widely held in 2006 or was taken over or defaulted between 1996 and 2006. Robust standard errors are in brackets. * indicates a coefficient significantly different from 0 at 10% confidence level; ** indicates significance at 5% and *** at 1%.

Dependent variable: Change of control from 1996 to 2006

	(1)	(2)	(3)	(4)
Founding family in control in 1996	-0.580***	-0.644***	-1.060***	-1.078***
	[0.118]	[0.122]	[0.172]	[0.181]
Control divided among family members	0.192*	0.195*	0.491***	0.466***
	[0.105]	[0.109]	[0.146]	[0.155]
Voting rights (%)	-0.018***	-0.018***	-0.009**	-0.007*
	[0.003]	[0.003]	[0.004]	[0.004]
CEO is family member	-0.003	-0.003	-0.019	-0.012
	[0.118]	[0.123]	[0.167]	[0.182]
1st generation (founder) in control	-0.104	-0.123	-0.042	-0.014
	[0.119]	[0.126]	[0.160]	[0.173]
3rd generation in control	-0.149	-0.142	-0.067	-0.015
	[0.129]	[0.135]	[0.172]	[0.185]
U.K.			1.215***	1.192***
			[0.191]	[0.205]
Log(sales)			-0.079**	-0.071*
			[0.039]	[0.042]
Industry fixed effects	NO	YES	NO	YES
Pseudo R^2	0.074	0.094	0.192	0.219
Chi-square	67.358	86.863	99.471	115.077
Prob	0	0	0	0
Observations	742	718	443	424

Table 12: A Comparison of Ownership of Family Firms in France, Germany Italy and the U.K. with Faccio and Lang (2002)

The table compares the firms classified as family firms in the study of Faccio and Lang (2002) with how the firms are classified according to our analysis.

Panel A. Family firms according to F-L and this study					
	Germany	France	U.K.	Italy	Total
Number of family-controlled firms according to F-L	417	395	425	122	1,359
Of which:					
- Controlled by a family	184	163	224	81	652
- Controlled by an unlisted company	233	232	201	41	707
Number of family-controlled firms according to our study	253	251	217	106	827
Panel B. Differences in classification of family firms between F-L and this study					
	Germany	France	U.K.	Italy	Total
Number of family-controlled firms according to F-L that we classify as non-family controlled	164 [= 417-253]	144	208	16	532
Of which:					
- Controlled by a family according to F-L	32	46	54	5	137
- Controlled by an unlisted company according to F-L	132	98	154	11	395
Panel C. Reasons for inconsistent classification					
	Germany	France	U.K.	Italy	Total
1) Firm is not family controlled according to our sample (%)	25.2%	29.9%	33.4%	13.1%	28.0%
2) Firms is not a listed firm in 1996 according to our sample (%)	8.4%	0.0%	5.5%	0.0%	4.3%
3) Unknown ownership in our sample (%)	5.8%	6.6%	12.7%	0.0%	7.6%

Appendix A. Data Sources

Source name	Date range used	Data items
Panel A: Electronic sources		
Bureau van Dijk OSIRIS	2006-2007 various snapshots	Ownership and financial data, listed status, name changes
Bureau van Dijk AMADEUS	1996 CD-ROM issue, 2006 DVD issue	Ownership and financial data, listed status, name changes, survival, family CEO, founding family, family ownership structure
CAPITAL IQ	2007 snapshots	Ownership data, listed status of companies, name changes, survival, reasons for non-survival, family CEO, founding family
London Stock Price Database LSPD	1995-2007	Listed status of companies, survival, death reasons
FACTIVA	1980-2008	Ownership data, listed status of companies, survival, reasons for non-survival, family generation, family CEO, founding family, family ownership structure
Faccio and Lang (2002)	1996	Ownership data, listed status of companies
DATASTREAM	1996, 2006	Financial data
WORLDSCOPE	1996, 2006	Financial data
Google	2006-2008	Ownership data, listed status, name changes, survival, reasons for non-survival, family generation, family CEO, founding family, family ownership structure
CONSOB	1994-2007	Ownership data, listed status, name changes, survival, family CEO, family ownership structure
COMPUSTAT GLOBAL	1987-1996	Financial statements for listed firms
Panel B: Hardcopy sources		
Hoppenstedt Aktienfuehrer	1994-2007	Ownership data, name changes, survival, reasons for non-survival
Company Register	1994-2007	Ownership data, name changes
Calepino dell'Azionista	1994-2007	Ownership data, name changes, survival, reasons for non-survival
Dafsaliens annuaire de sociétés	1994-2007	Ownership data, name changes, survival, reasons for non-survival
Commerzbank, Wer gehoert zu wem	1984-2007	Ownership data, name changes, survival, family ownership structure

Appendix B. Industry Composition of the 4,000 Largest Companies in France, Germany Italy and the U.K.

Industry	Industry description	Germany		France		U.K.		Italy	
Aero	Aircraft	0	(0.0)	5	(0.5)	3	(0.3)	0	(0.0)
Agric	Agriculture	0	(0.0)	0	(0.0)	2	(0.2)	2	(0.2)
Autos	Automobiles and trucks	31	(3.1)	26	(2.6)	21	(2.1)	22	(2.2)
Banks	Banking	8	(0.8)	19	(1.9)	28	(2.8)	30	(3.0)
BldMt	Construction materials	20	(2.0)	16	(1.6)	26	(2.6)	29	(2.9)
Books	Printing and publishing	15	(1.5)	9	(0.9)	22	(2.2)	22	(2.2)
Boxes	Shipping companies	2	(0.2)	4	(0.4)	4	(0.4)	6	(0.6)
BusSv	Business services	165	(16.7)	115	(11.6)	60	(6.0)	38	(3.8)
Chem	Chemicals	24	(2.4)	27	(2.7)	33	(3.3)	44	(4.4)
Chips	Electronic equipment	2	(0.2)	5	(0.5)	4	(0.4)	4	(0.4)
Clths	Apparel	5	(0.5)	1	(0.1)	8	(0.8)	16	(1.6)
Cnstr	Construction	21	(2.1)	42	(4.2)	51	(5.1)	40	(4.0)
Coal	Coal	8	(0.8)	2	(0.2)	4	(0.4)	0	(0.0)
Comps	Computers	28	(2.8)	14	(1.4)	23	(2.3)	21	(2.1)
Drugs	Pharmaceutical products	18	(1.8)	27	(2.7)	21	(2.1)	45	(4.5)
ElcEq	Electrical equipment	11	(1.1)	20	(2.0)	16	(1.6)	28	(2.8)
Enrgy	Petroleum and natural gas	22	(2.2)	10	(1.0)	37	(3.7)	23	(2.3)
FabPr	Fabricated products	8	(0.8)	4	(0.4)	7	(0.7)	13	(1.3)
Fin	Trading	0	(0.0)	97	(9.7)	8	(0.8)	12	(1.2)
Food	Food products	13	(1.3)	37	(3.7)	28	(2.8)	34	(3.4)
Fun	Entertainment	3	(0.3)	1	(0.1)	9	(0.9)	4	(0.4)
Guns	Defense	0	(0.0)	2	(0.2)	3	(0.3)	1	(0.1)
Hlth	Healthcare	0	(0.0)	0	(0.0)	0	(0.0)	1	(0.1)
Hshld	Consumer goods	33	(3.3)	50	(5.0)	33	(3.3)	54	(5.4)
Insur	Insurance	0	(0.0)	0	(0.0)	1	(0.1)	0	(0.0)
LabEq	Measuring equipment	17	(1.7)	5	(0.5)	3	(0.3)	16	(1.6)
Mach	Machinery	50	(5.1)	22	(2.2)	27	(2.7)	37	(3.7)
Meals	Restaurants, hotel, motel	2	(0.2)	5	(0.5)	19	(1.9)	6	(0.6)
MedEq	Medical equipment	3	(0.3)	4	(0.4)	3	(0.3)	5	(0.5)
Mines	Nonmetallic mining	3	(0.3)	1	(0.1)	7	(0.7)	0	(0.0)
Misc	Miscellaneous	0	(0.0)	1	(0.1)	2	(0.2)	0	(0.0)
Paper	Business supplies	12	(1.2)	9	(0.9)	14	(1.4)	18	(1.8)
PerSv	Personal services	5	(0.5)	3	(0.3)	5	(0.5)	4	(0.4)
RlEst	Real estate	29	(2.9)	11	(1.1)	6	(0.6)	14	(1.4)
Rtail	Retail	45	(4.6)	75	(7.5)	104	(10.4)	45	(4.5)
Rubbr	Rubber and plastic products	7	(0.7)	5	(0.5)	6	(0.6)	8	(0.8)
Ships	Shipbuilding equipment	1	(0.1)	1	(0.1)	0	(0.0)	2	(0.2)
Smoke	Tobacco products	10	(1.0)	1	(0.1)	7	(0.7)	0	(0.0)
Soda	Candy and soda	25	(2.5)	30	(3.0)	49	(4.9)	44	(4.4)
Steel	Steel works etc.	28	(2.8)	23	(2.3)	18	(1.8)	48	(4.8)
Telcm	Telecommunications	1	(0.1)	10	(1.0)	15	(1.5)	4	(0.4)
Toys	Recreational products	13	(1.3)	6	(0.6)	9	(0.9)	12	(1.2)
Trans	Transportation	36	(3.6)	35	(3.5)	39	(3.9)	35	(3.5)
Txtls	Textiles	2	(0.2)	3	(0.3)	7	(0.7)	23	(2.3)
Util	Utilities	62	(6.3)	14	(1.4)	41	(4.1)	11	(1.1)
Whlsl	Wholesale	198	(20.0)	189	(19.0)	158	(15.8)	153	(15.4)
Missing		2	(0.2)	9	(0.9)	9	(0.9)	19	(1.9)
Total		984	(100.0)	995	(100.0)	1,000	(100.0)	993	(100.0)