

Performance of Family Firms:

Evidence from US and European firms and investors

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Abstract

The fundamental question we address is to see how, across the different national and legal contexts of the US, UK, France and Germany, family firms have performed when compared with non-family firms. We look at 3 different performance angles: Return on Assets, Tobin's Q, and Total Shareholder Return. Exploring the third criterion further, we also ask whether investors look at these firms as different, and if so how?

We find a remarkably robust result: family firms over the period 1993-2002 in France, Germany, the UK and US never fare worse on these three performance measures relative to non-family firms, and in fact fare better on several of them. In addition we find that stock returns of the family firms are well explained by classical four-factor pricing models which indicate how returns derive from risks assumed by particular firms. These models confirm that family firm portfolios present different risk exposures when compared across countries and also when compared with non-family firm portfolios in their respective countries. These differences indicate that both geography and ownership structure ought to matter for investors.

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1 Introduction and motivation

A major contribution in the literature on international business is the study by La Porta et al. (1999) which established that the dominant form of corporate ownership in the world is not the one displayed by the widely held stock corporation – so touted by Berle and Means (1932) - but is the family firm. Together with state ownership, family ownership represents the most prevalent form of corporate ownership in the world.

This contribution immediately raised the issue of performance of family firms. Being restricted to firms for which reliable data were available, the question then turned to a comparison between publicly quoted family firms and widely held ones. Consistent with the negative view held by families regarding their valuation on the stock market, Holderness and Sheehan (1988) found higher valuations for non-family firms than family firms, where the latter were defined as firms that are majority controlled by a family. It therefore came as a major surprise – but one consistent with the prevalence of this form of ownership – that Anderson and Reeb (2003) in their examination of the US Fortune 500 showed that founding-family firms on average boasted a higher market valuation, as measured by Tobin's Q (TQ), as well as a higher operational performance, as measured by Return on Assets (ROA).

Authors then sought to study the origins of this superior performance of family firms in greater depth. Several studies focusing on the US found that founder family firms out-performed non-founder family firms (see e.g. Fahlenbrach, 2003; Amit and Villalonga, 2005). Results from the Amit and Villalonga study indicate that the one instance where family firms traded at a significant discount relative to non-family firms is

when the family owned at least 20% of the votes and was present in management and ownership with family members of the 2nd or later generations. The authors thus argued for the need to understand the relationship between ownership, control and management in the family business system, and whether they were reinforcing each other or whether they might hurt in terms of overall performance.

Internationally, researchers also started examining the performance of family firms outside the US. For example, Corstjens, Maxwell, and Van der Heyden (2004), taking the investor view and introducing Total Shareholder Return (TSR) as a valuation measure, showed that French family firms on the Paris stock exchange had substantially outperformed non-family and non-state firms during the 90's. Sraer and Thesmar (2005) found a similar excess performance in France, and they explained this result in terms of the lower labor costs of family firms in exchange for reduced risk of contract termination. Barontini and Caprio (2005) investigated the valuation and performance of very large family firms (publicly quoted with assets beyond \$ 300 million in assets) in 11 European countries in 1999, using TQ and ROA. They concluded that even after controlling for control enhancing mechanisms and management involvement, large family firms do not fare worse than large non-family firms. They do present results for France and Germany (as well as for 9 other European countries), but provide no evidence for the UK and US.

In sum, we felt it useful, at this stage of the family firm debate, to present a paper presenting evidence for family firm performance internationally, with evidence both on anglo-saxon common law regimes (US and UK) as well as continental European civil law regimes (France and Germany). Although in recent years the European (French and German) regimes are converging towards the Anglo-Saxon system, during our period of

study many specificities of each country remain very important. The Anglo-Saxon approach is dominated by the shareholder value maximization principle. The French and German perspective positions the firm more as a social institution whose goal is to further the interest of the corporation itself, taking into account the needs of multiple stakeholders such as shareholders, employees, creditors, customers and community (see e.g. Carminatti-Marchand and Paquerot, 2004; or Fiss and Zajac, 2004). Furthermore, the nature of ownership and management within family firms is also considerably different across these regimes. The Anglo-Saxon approach favors the use of professional managers early on, typically resulting in reduced family ownership once the founder retires. In Europe, the family tends to retain significant ownership once the founder has moved on (Burkart et al., 2003). A key objective of our paper is to understand the impact of these different environments on the nature and performance of family firms..

In addition, we particularly emphasize the investor viewpoint, thus complementing most studies that are based on operational measures (ROA) or on temporal market measures (TQ). Three reasons motivated this choice.

First, managers and owners typically care a lot whether their stock, at least on average, is priced correctly. We test for this by investigating abnormal returns relative to a four-factor Fama-French-Carhart (FFC) pricing model, as first presented by Fama and French (1993) and further refined by the introduction of a fourth risk factor by Carhart (1997). It is worth noting in this regards that practitioners like Tibi et al. (2003) claim to exploit such miss-pricing and have argued that family firms are charged too high a cost for their capital given their risk profile.

Second, we are interested whether the abnormal positive stock market return for family firms (Fahlenbrach, 2003), is a specific US phenomenon or whether it also holds outside the US? The reason why one could expect abnormal returns for family firms ex ante is based on a model first presented by Merton (1987). He argues that neglected firms may display positive abnormal returns. If family firms are more opaque, and less followed by analysts (e.g. because a large chunk of the equity is still held by the founder and is not traded), then it is possible that such firms are charged an extra risk premium by investors in terms of higher returns.

A third reason is similar to the motivation of Gompers, Ishii and Metrick (2003) who run a long-run event study over the full sample period from 1990-2000 to investigate the stock market's reaction to news about the importance of corporate governance. They found that firms with better governance display a positive abnormal return over the 1990s using the FFC pricing model as benchmark. It has been widely argued that family ownership, management and control are important corporate governance characteristics (e.g., Amit and Villalonga, 2005; Sraer and Thesmar, 2005). In our study, we use the same event study methodology as Gompers et al. (2003) to examine whether family firms, which are endowed with particular governance practices and mechanisms, display abnormal returns.

2 Contributions of this paper

The first aim of this paper consists in validating the results on performance of family firms beyond the US. We use data from France, Germany, the UK and US. For the first three countries, we focus on the years 1993-2002 and we use data for the 250

highest capitalization stocks. In each of these countries, we collect family ownership in one particular year during the 1993-2002 period and assume that it stays constant throughout. For the US we take the sample of Anderson and Reeb (2003) over the period from 1992 to 2000. Our main result here is that, whatever criterion is used (ROA, TQ, or TSR) family firms in all four countries never perform worse, and in several instances perform statistically better than their non-family counterparts. This ought to contribute to reducing any negative views held by family firm owners or managers towards the stock market.

We pursue by deepening the investor analysis. As suggested by the FFC methodology, we create country specific risk factors and test whether family firms display a significant abnormal return after taking into account the returns expected by investors for the market risks incurred by particular stocks. After correcting for these market risks, we find no significant abnormal returns in any of the four countries. In other words, family firms do not seem to be charged an extra risk premium (or given any risk discount) in these countries during the sample years. Alternatively, we cannot reject the hypothesis that the various stock markets have efficiently priced family firms in the 1990s; in other words, family firms on average delivered returns commensurate with the risk they presented to investors. We also conclude that the Gompers et al (2003) findings are particular, not only as argued in Cremers et al. (2005) to the time period of the analysis, but also to the proxy of corporate governance. Using family firm as a proxy of governance, we cannot reject the null of no abnormal return during the sample period.

The second major research question we ask is whether, from an investor's point of view, there are significant differences between family and non-family firms

internationally. Interestingly, we find that in Germany, the UK and US family firms deliver systematically different risk profiles to investors, with commensurate implications on returns. In Germany and the UK, family firms display a significantly higher exposure to the size factor but a lower exposure to the value-versus-growth and momentum factors. In the US, family firms display a lower exposure the total market only. In France, there is no significant difference in the risk exposure between family and non-family firms. One of our major contributions then is to firmly point to the importance of analyzing risk profiles and accounting for the commensurate returns expected by investors in such risk profiles.

In addition, we must note that the industry representation of family versus non-family firms is quite diverse internationally. For example, in the UK and Germany, no family firm is represented in the utilities industry. On the other hand, no non-family firm is in the information technology industry in Germany and all non-cyclical services are owned by family firms in France. To the extent that industries result in certain exposures, it is possible that differences in risk exposure result from the industry participation. Nevertheless, industry choice is a deliberate choice of the family; as such this is an interesting finding for it distinguishes operating domain as a key strategic variable for family firms.

However, we do find one significant positive abnormal return and it concerns France. A portfolio long in French family firms and short in French non-family firms displays a positive abnormal return during the sample period. We show that the difference comes entirely from the fact that French non-family firms display a negative abnormal return during the sample period. To test the robustness of this finding, we use

the family firm definition and sample of Sraer and Thesmar (2005) for France. This data is survivorship free and accounts for the (very few) changes in family status during the sample period between 1994 and 2000. Focusing on the top 250 companies (by market value), we confirm the result. However, using a wider set of 576 firms - which therefore includes many smaller companies - we find that the difference in return between family and non-family firms goes away. Non-family firms no longer significantly under-perform family firms. We are thus able to conclude that family firms are fairly priced in all four countries, and that large non-family firms in France were underperforming relative to the four-factor model benchmark during the 1994-2000 time period.

Interestingly, using the wider set of 576 firms for France also results in the finding that French family firms have a significantly higher (lower) loading on the size (value-versus-growth) factor consistent with the interpretation that family firm portfolios indeed represent different risk exposures, with commensurate effects on returns. In other words, a French family firm portfolio typically includes a larger set of small firms; given that investors require a compensation for the risk of investing in a smaller firm, such portfolios will normally display a higher return – as would be the case for a portfolio of non-family firms of equal size – than a portfolio comprised of larger firms which displays a reduced exposure to “small firm risk”. One of the contributions of this paper is to emphasize that stock returns ought to be analyzed not in their raw form, but taking into account one of the major insights of modern finance, namely that abnormal returns ought to be examined only after having adequately accounted for the risk profiles of the investments studied – for different risk profiles warrant different returns.

The paper is structured in the following way. We start by describing our data sampling in section 3. We then compare standard performance measures such as TQ and ROA between family and non-family firms in section 4. In section 5 we investigate and compare the stock market returns of family and non-family firms and section 6 concludes.

3 Data Samples and Ownership Classification

We have collected a sample of large firms quoted on the French, German and UK stock markets over the nine-year period from December 1993 through December 2002. Each country's initial sample consisted of its 250 highest capitalization stocks. The classification into family versus non-family firms is based on ownership data in December 1993 for France and Germany, and December 1998 for the UK. For our analyses we split the companies into two portfolios, family-owned firms and non family-owned firms, based on the year of known ownership in each country.¹ We follow Blondel, Rowell, and Van der Heyden (2002) to determine whether a firm is family or non-family owned. A family firm is a company where one or several individuals or families are ultimate owners and represent the largest block of shares. The owning family is not required to be descendants of the firm's founder(s) and is not required to be involved in the business. Non-family owned firms are those firms in which no individual, set of individuals, family or sets of families can be identified as the ultimate

¹ We also show results using the sample of Sraer and Thesmar (2005) for France who identify family ownership year-by-year between 1994 and 2000. Their sample suggests that there are very few changes of the family status during our sample period.

owner. One particularity of French and German firms, as opposed to UK and US firms, is their complex chain of ownership. When ownership is not direct, ultimate ownership is tracked by going up the ownership chain. Ultimate owner(s) are those shareholders who own at least 10% of the shares at each step of the ownership chain. The US sample is based on Anderson and Reeb (2003). They have a time series of 403 firms between 1992 and 2000 where each firm-year is classified as family or non-family. A firm is called a family firm if founding families (or descendants) are shareholders and/or founding family members (or descendants) sit on the board of directors. Thus, the definition of family ownership for France, Germany and the UK differs from the definition used by Anderson and Reeb (2003) in that a minimum level of ownership of 10% and the family being the largest blockholder is required. Furthermore, the definition is solely based on ownership and does not classify a firm as family firm only because founding family members are present on the board. This difference results from our desire to include US data as well.

We obtained monthly return data for the primary listings of each European company from the Datastream database.² We were able to find total return index data for 246 French, 216 German³ and 247 UK companies. Datastream is also our source for risk free interest rates, market value data and industrial classification data. For the US we use CRSP data and could match 330 of the 403 firms in the original sample of Anderson and Reeb (2003).⁴ Each country is analyzed separately in its local currency.

² To detect errors in the data, we flag extrem monthly returns and had them checked by Datastream for accuracy.

³ Some German companies have more than one type of share listed in the German market. We include only the primary listing of the company.

⁴ We loose observations because the identifier is only the ticker and company name.

Notice that we do not replace firms that are de-listed nor do we include newly listed firms. 123 French, 58 German, and 50 UK sample firms de-listed during the 1993-2002 time period. We also report results based on French data from Sraer and Thesmar (2005) that is survivorship free and find that the survivorship issue is not affecting the inferences drawn from our sample, nor is the level of ownership (10 or 20%) required to qualify as a family firm⁵.

We collect accounting data for French companies from the Compustat Global Industrial/Commercial and the Compustat Global Financial databases, the Thomson One Banker database, the 1998 Diane database, and the DAFSA des Sociétés books – in that order. Firm age is obtained from the INSEE database, the Diane database and company websites. We find complete annual accounting data for 90% of our French stock market sample (representing 1446 firm-years and 221 firms). For Germany and the UK, we were able to obtain all financial information from the Thomson One Banker database. We have complete annual accounting data for 99% of the German stock market sample (1806 firm-years and 214 firms), and 99.6% of the UK sample (2068 firm-years and 246 firms.) US accounting data is obtained from Compustat.

4 Return on Assets and Tobin's Q

Demsetz (1983) argues – in a paper that is tested empirically by Demsetz and Lehn (1985) - that family firms avoid managerial expropriation thus alleviating the conflict of interest between shareholders and managers. On the other hand, family firms usually control a large stake. Therefore, an agency problem exists between large and

⁵ Their definition of family ownership is if the firm's main shareholder is a single family that controls at least 20% of the shares. The reason there is no difference is because most family firms like to have a level of control that is much larger than 10% - which is an issue only for the very large firms in our sample.

minority shareholders (e.g., La Porta et al., 1999). Firms owned by families may have longer horizons, which render their investments more efficient, and also allow them to make investments firms with shorter horizons would not make (Stein, 1988 & 1989; James, 1999). Longer investment horizons may make family firms less reactive to short term pressures, events and fads. On the other hand, families prefer stability and capital preservation to risky and, on average, very profitable projects (Demsetz, 1983). Family firms are also more likely to prefer independence and control to growth and performance, which would result in worse performance relative to non-family firms. Families might also exchange profits for private rents (Fama and Jensen, 1983), firm survival (Shleifer and Vishny, 1997), and special dividends (DeAngelo and DeAngelo, 2000). Which side of the argument dominates thus remains an empirical question.

In Table 1, we show that family firms in France, Germany and the US have a significantly higher ROA (mean and median) than non-family firms. In the UK there is no significant difference. However, in all four countries we do find higher average Tobin's Q, measured as the book value of assets minus the book value of equity plus the market value of equity divided by the book value of assets.

The average family firm in all four countries is significantly smaller than the non-family firm; but only in the US does it display a higher sales growth. Also, return volatility is significantly higher in Germany and the UK for family firms.

We ought to remain open to the possibility that the observed differences in performance might be caused by other factors than the nature of the firm's ownership. We therefore control for other determinants of ROA and TQ than family ownership such as their growth, their debt level, the volatility of their returns and their size. We also

include the age of the firm and the firm's industry participation (using Level 3 Datastream industry codes; US: 2-digit SIC) .

In Table 2, we find that, after controlling for all those factors only US family firms do display a higher ROA than non-family firms in these respective countries (at a significance level at most 5%). No significant difference is observed using TQ as the dependent variable. Our findings suggest that family firms are quite broad in scope and that inferences from univariate comparisons do not immediately carry over to a multivariate analysis. In particular, we find that family firms are not evenly represented in the various industries. Figures 1a and 1b show the number of firms in each industry and the fraction of family firms in each industry, respectively.⁶ The industry representation of family versus non-family firms is quite diverse across countries. For example, in the UK and Germany, no family firm is represented in the utilities industry. On the other hand, no non-family firm is in the information technology industry in Germany and all non-cyclical services are owned by family firms in France. To the extent that ROA and TQ are correlated within the industry, the observed average performance in Table 1 might not be attributable to family ownership per se of firms in a particular industry, but rather to the choice family owners make with regards to the industry they operate in. Our analysis thus allows us to distinguish whether the roots of excess performance by family owners consists in a governance choice concerning the industry for the family firm to operate in, or whether it is rooted in the fact that family firms in a particular industry on average are able to operate their firms more effectively than their non-family counterparts.

⁶ For the US, please refer to table 1 in Anderson and Reeb (2003).

When we control for industry effects in the regressions in Table 2, the differences in TQ disappear due to the controls. Thus, it appears that when valuing firms in a given industry, the stock market does not distinguish between family and non-family firms in that sector. On the other hand, we still find higher ROA in the US for family firms. One possible reason to explain a higher ROA with no difference in TQ might be that the market indeed underestimates the performance of family firms. Another explanation might be that the market, when pricing family firms, has correctly taken into account their higher ROA performance. What is clear is that the superiority of family firms in terms of ROA does not hold uniformly across geography, and that family firms in Europe appear not to share this superior ROA performance, once proper statistical controls have been applied.

In the following section we analyze stock returns over the time period studied using a FFC pricing model. This allows us to test the hypothesis of whether the market has correctly priced family firms over this time period given the particular risks assumed by these firms.

5 Stock returns

5.1 Methodology

In order to analyze whether family firms display abnormal returns, we run an FFC four-factor model on the monthly returns in each of the four countries. In particular, we construct the factor return based upon all listed firms in a particular country-year. For the US, we take the factors from Ken French's webpage. The factors are the three Fama-French (1993) factors: RMRF (value-weighted market return minus the risk-free rate), SMB (small minus large firm returns), HML (value versus growth firm returns), and the

momentum factor (*UMD*) of Carhart (1997). We calculate *SMB*, *HML*, and *UMD* for the French, German and UK stock market using the definitions of Rouwenhorst (1999).

We run the following regression for each country:

$$R_t = \alpha + \beta_1 (RMRF_t) + \beta_2 (SMB_t) + \beta_3 (HML_t) + \beta_4 (UMD_t) + \varepsilon_t, \quad (1)$$

where R_t is the excess return to a portfolio of stocks in month t , and the monthly average abnormal return is captured by α .

To study the return differences between portfolios of family versus non-family firms we use two approaches, the FFC model and the Fama-MacBeth (FMB) approach. In the FFC four-factor approach described earlier, we form monthly portfolios of family firms and non-family firms, using equal-weighting. Except for the US, the portfolio compositions do not change because of family status changes since we only have that information at one point in time during the sample period. However, there are changes in the composition of the portfolio from the fact that firms de-list (e.g., because they go private, are taken over or go bankrupt).⁷ We then take the difference in monthly returns between the two portfolios, i.e., going long in the family firm portfolio and short in the non-family portfolio as R_t .

Secondly, as a robustness test of the FFC analysis, we report results of Fama-MacBeth (FMB) type regressions to answer the question whether there is a significant difference in returns between family and non-family firms controlling for more than the four FFC factors. The regression specification follows Gompers et al. (2003). We use the market value as a proxy for size effects (*SMB* factor), the book-to-market ratio as a proxy

⁷ As stated earlier, using the sample of Sraer and Thesmar (2005) for France where survivorship is not an issue, we find that there is no impact on the conclusions drawn from our particular sample construction.

for the HML factor, three variables for returns over the months -3 to -2 , -6 to -4 and -12 to -7 prior to the month of analysis (as a proxy for UMD). Furthermore, we include the stock price level, volume (expressed as the logarithm of Euro (Pence; \$) trading volume in month $t-2$), and the dividend yield in the prior fiscal year. A second specification adds ROA, one year sales growth, leverage (long-term debt/assets), return volatility (measured as the standard deviation of monthly stock returns over the previous 60 months), total assets and firm age.

5.2 Family firm stock returns

In Table 3 we show total shareholder returns (TSR) for family and non-family firms in all four countries. TSR is the return of an equally-weighted portfolio invested in either family or non-family firms at the beginning of the sample period. We use equally weighted portfolios in order to capture the family firm effect, regardless of firm size. The portfolios are rebalanced monthly to adjust for de-listings. We find that the average TSR over the sample period is significantly higher for family firms in France and the UK. The median TSR is only significantly higher in France. German and US firms do not display any significant differences between family versus non-family returns. Family firms, on average, are significantly smaller, have a lower trading volume and, a lower dividend yield (except in Germany). It could thus be that the differences in TSR which we observe in France and the UK are the result of different returns to different risk exposures (e.g., smaller firms).

Table 4 shows the results of the FFC valuation model regressions which explicitly control for these risk factors. Our primary interest is to investigate whether family firms experience abnormal returns over the sample period relative to the four-factor benchmark

model. This amounts to testing whether the alpha in Equation (1) differs from zero. We do find that alpha is not significantly different from zero in any of the four countries: in France (resp. Germany, UK, US), the monthly average abnormal return is -0.09% (resp. 0.31% , -0.43% , 0.00%) with a p-value of 0.77 (resp. 0.37, 0.20, 0.62)). Therefore, there is neither a positive nor negative abnormal return for family firms during the sample period: family firms appear to be fairly treated by the stock markets in all four countries. The share price of family firms is on average an accurate reflection of the investors' assessment of family firms' risk profiles. It is also worth underlining that, from the stock markets' perspective, family firms do not appear to generate an additional risk factor for investors beyond the standard four risk factors.⁸

5.3 Family firms versus non-family firms

In this section we compare the stock returns of family firms to non-family firms as summarized in Table 4. For each country we report the four-factor model regression for the portfolio long in family and short in non-family firms. We find no significantly different monthly abnormal return between family and non-family firms in Germany, the UK and US. However, the results for the French sample indicate that family firms outperform non-family firms by 0.46% per month (significant at the 5% level). Given that French family firms do not display any significant abnormal return, the finding must result from an underperformance of French non-family firms. Indeed, as shown in Table 4, the four-factor regression for non-family firms leads indeed to a negative alpha of -0.55% with a p-value of 0.054.

⁸ This additional risk factor could account for additional risks due, e.g., to family conflicts on dividend policies, succession, governance.

Before taking a closer look at the differences in risk between family and non-family firms, we proceed with some robustness tests of our results so far. As our univariate comparisons have shown, family firms display significantly different characteristics than non-family firms. In addition to the variables mentioned above, we also find that family firms are not represented in all industries in equal proportion. For example, as shown in Figure 1, in the UK and Germany, no family firm is represented in the utilities industry. On the other hand, no non-family firm is in the information technology industry in Germany and all non-cyclical services are owned by family firms in France. To the extent that these differences potentially affect the expected return and are not captured in the four-factor model, we follow Gompers et al. (2003) and use a FMB regression to control for additional factors, and foremost industry. In particular, we compute returns relative to the industry median to take industry choice effects into account.

In Table 5 we find that the family firm dummy is still significant, but again only in France. The economic magnitude has even increased slightly from an average monthly abnormal return of 0.46% using the four-factor model to 0.65%. Only France leaves us with a query regarding to the performance of its family firms in the stock market, as indeed the higher TSR of UK family firms is fully explained by their risk profiles.

One immediate concern is whether the abnormal return is an artifact of our sample selection. We address this issue for the French sample by using the data of Sraer and Thesmar (2005). They collect family firm data in 1999 and add firms to their sample that de-listed between 1994 and 1999. They also determine the family status every year from 1994-2000. In order to compare results with our 246 firm French sample, we choose

a subsample that contains the largest 245 firms out of the 576 firms for which we could gather complete data. The result is shown in Table 6. Again, we find a significant positive abnormal return for family firms relative to non-family firms. Again, the difference comes from the fact that non-family firms under-perform the FFC valuation model significantly. The conclusion we draw from this analysis is that large French non-family firms were over this period significantly under-performing. In contrast, family firms were on average priced consistently with the FFC valuation model and displayed no abnormal returns.

Since we have focused on large firms in our tests so far (i.e. top 250), it is possible that adding smaller firms will affect the results. As shown in Table 6, using the full sample of 576 firms of Sraer and Thesmar (2005), we find no significant difference between family and non-family firms anymore.⁹ This suggests that large non-family firms in France are indeed responsible for the significant abnormal return difference.

The second finding in Tables 4 and 6 is that family and non-family firms have significantly different risk exposures. When comparing the risk exposures for France, we focus on the full French sample in Table 6 where there is no significant abnormal return difference between family and non-family firms, and results from Table 4 for Germany, the UK and the US.

We find that family firms in the European countries display a significantly higher (resp. lower) factor loading on the size (resp. HML) factor. The exposure to the momentum factor (UMD) is significantly lower in Germany (at the 10% level) and the

⁹ Notice that both, the portfolio of family as well as non-family firms display negative abnormal returns. However, only the one of non-family firms is significant. Using the full sample of 576 firms, the alpha is marginally significantly negative. However, using the sample on which we base the calculation of the factors, we do not find a significant alpha, indicating that the four-factor model does describe the variation in returns of the full stock market sample well.

UK (at the 1% level), but not in France. Interestingly, in none of these three countries do we find a significantly different exposure to the market risk. In contrast, in the US the only significantly different exposure is with respect to the market risk: family firms do display a significantly lower beta.

These findings suggest that, to the extent that standard performance measures such as ROA and TQ differ between family and non-family firms, these differences might be driven by differences in the risk exposures. Again, we point out that these risk exposures themselves are the results of choices made by the firms. Once these choices have been made, the market does appear to price family firms correctly, on average, at least during the sample period and in the four countries investigated. In other words, the superior results attributable to family firm portfolios in the literature may be more due to the industry choices made by those governing family firms, rather than to the way these firms are being operated, once they have made a choice of industry.

In this regard, we found it useful to test the results obtained by Fahlenbrach (2003) concerning the superior performance of founder family firms relatively to the other firms, family or non-family. Anderson and Reeb (2003) and Amit and Villalonga (2005) present similar results. We again use the sample of Sraer and Thesmar (2005) for France to investigate this question.¹⁰ In 1999, there were 167 non-family firms, 166 founder, 113 heir and 76 professional CEO managed family firms for a total, in that year, of 522 companies. Other years have a different number of observations. In Table 7 we report that none of these three subgroups display a significant abnormal return (i.e. non-zero alpha), once controlled for market risks. These results are thus in stark contrast to Fahlenbrach's (2003) finding of a significant positive abnormal return in the US for

¹⁰ We did not have access to a similar sample for Germany, the UK and the US.

founder CEO firms. Furthermore, our French results confirm again that who manages the firm affects the risks that are taken by the firm. Founder firms relative to non-family firms exhibit a significantly higher exposure to the SMB and UMD factor and a significantly lower exposure to HML. Heir managed firms, as well as professionally managed family firms, display no significant difference in their risk exposure relative to non-family firms. Thus, the various choices by the family of CEO type (founder, family, non-family) appear to determine quite different risk profiles for these firms. In particular, founder CEOs tend to be running small, growth firms with higher risk exposure. This leads to higher returns for such firms, as requested by investors. Once a professional CEO takes over, the company seems to be managed like a non-family firm in terms of exposure to risks, with commensurate returns to investors. But in all cases, the French stock market appears to have priced all three types of firms correctly over the period investigated.

6. Conclusion

We find that family firms in France, Germany, the UK and the US do not fare worse in terms of market valuation (TQ) and operational performance (ROA) relative to non-family firms. In addition their stock returns are well explained by a Fama-French-Carhart valuation model as well as a multifactor Fama-MacBeth regression model. In all four countries examined family firms are fairly treated by the stock markets, and perform at least as well as non-family firms, and sometimes better (as the French data showed).

Given the stark differences in the social, economic and political environments which French, German, UK and US family firms have faced during our period of

observation, the performance of family firms is remarkably consistent across these environments. The performance of family firms is at least at par with non family firms, and this appears a very robust finding.

Finally our results show that investors and academics ought to be sensitive to the differences by family firms across the world. In particular, across the four countries examined the risk profiles of family firms differ to a substantial extent. And, as indicated by our French sample, founder family firms display significantly different risk exposures than heir managed or professionally managed family firms, contributing to commensurately higher returns for investors.

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**Table 1: Difference of Median and Mean Tests for ROA, TQ and Control Variables–
Family vs. Non-Family**

This table presents tests for differences in the median and mean values of firm performance and control variables between family and non-family owned firms in each country. Values are calculated in local currency using the cross-sectional median (mean) of firm time-series averages from December 1993 – December 2002 (for US: 1992-2000), except French sales growth which was available from 1994. *ROA* denotes Return on Assets, measured as net income divided by total assets. *Tobin's Q* is the ratio of the market value of assets to the book value of assets. Our proxy for the market value of assets is the sum of the book value of assets and the market value of the common stock less the book value of the common stock. *LT Debt/Total Assets* is the book value of long-term debt divided by total assets. *Total Assets* is the total assets. *Firm Age* is the number of years since the firm was created. *Sales Growth* is sales in the current year divided by sales of the previous year. *Return Volatility* is the standard deviation of monthly stock returns for the previous 60 months. *Indicates significance at the one percent (***), five percent (**) and ten percent (*) levels, based on the non-parametric Wilcoxon test for medians, and the t-statistic assuming unequal variances for the means.

		France		Germany		UK	
		Family	Non-Family	Family	Non-Family	Family	Non-Family
No. Firms with ROA Data		115	122	83	131	81	165
Firm Performance							
ROA (%)	Median	3.03	2.13***	2.41	1.36***	4.59	4.76
	Mean	3.42	1.39***	2.59	1.51**	4.70	4.99
Tobin's Q	Median	1.14	1.13	1.33	1.18***	1.53	1.44
	Mean	1.36	1.27*	1.56	1.39**	2.68	1.85*
Control Variables							
LT Debt / Total Assets (%)	Median	11.70	13.19	9.24	6.15	15.55	14.20
	Mean	12.89	16.92**	10.66	9.53	18.59	16.63
Total Assets (millions)	Median	1,335.98	1,620.91	656.11	2,020.27***	1,428.08	2,518.98***
	Mean	3,497.91	23,829.40***	2,701.98	27,153.71***	2,720.98	17,606.71***
Firm Age (years)	Median	40.25	39.75	NA	NA	NA	NA
	Mean	47.27	43.50				
Sales Growth	Median	1.10	1.05***	1.06	1.05	1.12	1.08**
	Mean	1.26	1.34	1.32	1.89	1.27	1.28
Return Volatility (%)	Median	8.82	8.44	8.77	7.78***	9.15	7.90***
	Mean	8.89	9.14	9.23	7.93***	10.10	8.33***
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		US					
		Family	Non-Family				
No. Firms with ROA Data		125	205				
Firm Performance							
ROA (%)	Median	6.47	3.75***				
	Mean	6.10	3.36***				
Tobin's Q	Median	1.72	1.53**				
	Mean	2.02	1.85**				
Control Variables							
LT Debt / Total Assets (%)	Median	15.45	17.61**				
	Mean	17.18	19.07**				
Total Assets (millions)	Median	2,504	4,914**				
	Mean	8,464	13,184**				
Firm Age (years)	Median	NA	NA				
	Mean						
Sales Growth	Median	1.079	1.052**				
	Mean	1.090	1.067**				
Return Volatility (%)	Median	7.97	8.15				
	Mean	8.85	8.94				

Table 2: ROA, Tobin's Q and Family Ownership

This table reports results of two-way fixed effects regression models of firm performance on family ownership and control variables. The models were run over the December 1993 – December 2002 time period, except France (US) which was run over the 1994-2002 (1992-2000) time period. *ROA* denotes Return on Assets, measured as net income divided by total assets. *Tobin's Q* is the ratio of the market value of assets to the book value of assets. Our proxy for the market value of assets is the sum of the book value of assets and the market value of the common stock less the book value of the common stock. *Family Firm* is a binary variable that equals one when the firm is family-owned. *Sales Growth* is sales in the current year divided by sales of the previous year. *LT Debt/Total Assets* is the book value of long-term debt divided by total assets. *Return Volatility* is the standard deviation of monthly stock returns for the previous 60 months. *Ln(Total Assets)* is the natural log of total assets. *Ln(Firm Age)* is the natural log of the number of years since the firm was created. All regressions include dummy variables for the Level 3 Datastream industry codes (US: two-digit SIC) and for each year of the sample period. The standard errors are corrected using the Huber White Sandwich estimator and firm level clustering. *t*-values are in parentheses. * Indicates significance at the one percent (***), five percent (**) and ten percent (*) levels.

	ROA				Tobin's Q			
	France	Germany	UK	US	France	Germany	UK	US
Family Firm	0.025 * (1.88)	0.008 (1.32)	0.001 (0.13)	0.012*** (3.82)	-0.069 (0.76)	0.123 (1.51)	0.056 (0.27)	0.052 (1.33)
Sales Growth	0.0005*** (2.77)	0.0001*** (6.34)	-0.00004 (0.21)	0.025*** (2.96)	0.004*** (5.84)	0.001 *** (5.79)	0.003 (0.73)	1.008*** (9.90)
LT Debt/Total Assets	-0.066 *** (2.57)	-0.003 (0.06)	-0.054 (1.50)	-0.149*** (12.15)	-0.565 *** (2.87)	-0.858 *** (3.91)	0.873 (0.65)	-1.665*** (11.44)
Return Volatility	-0.256 (1.47)	-0.231 (1.49)	-0.690 *** (4.37)	-0.647*** (12.47)	-0.818 (1.45)	-2.212 ** (2.16)	9.582 (0.98)	-1.059* (1.71)
Ln (Total Assets)	-0.003 (1.22)	-0.003 (1.83)	-0.011 *** (5.12)	-0.005*** (3.16)	-0.036 (1.61)	-0.102 *** (2.77)	-0.269 *** (4.31)	-0.067*** (3.91)
Ln (Firm Age)	0.003 (0.48)	–	–	–	-0.069 (0.85)	–	–	–
Adjusted R square	0.079	0.039	0.165	0.167	0.147	0.315	0.203	0.139
No. of observations	1446	1812	2068	2212	1447	1806	2066	2212

**Table 3: Difference of Median and Mean Tests for TSR and Control Variables
– Family vs. Non-Family**

This table presents tests for differences in the median and mean values of total shareholder return and control variables between family and non-family owned firms in each country. Values are calculated in local currency using the cross-sectional median (mean) of firm time-series averages over the January 1994 – December 2002 period (US: 1992-2000). The starting point of our stock market analyses is January 1994 because our samples begin at the end of December 1993 and the December 1993 return index is used to calculate the Total Shareholder Return for the month of January 1994. *TSR* is the monthly total shareholder return. *Market Value* is the market value in millions of local currency. *Book to Market Value* is the ratio of book value of common stock to the market value of common stock. *Price* is the share price in local currency. Price is shown in euros for France and Germany, pounds sterling for the UK and dollars for the US. *Volume* is the currency volume of trading and is the price multiplied by the volume traded. *Dividend Yield* is the dividend per share as a percentage of share price. *Indicates significance at the one percent (**), five percent (***) and ten percent (*) levels, based on the non-parametric Wilcoxon test for medians, and the t-statistic assuming unequal variances for the means.

		France		Germany		UK	
		Family	Non-Family	Family	Non-Family	Family	Non-Family
No. Firms with TSR Data		120	126	84	132	81	166
Firm Performance							
TSR (%)	Median	1.51	1.23 ***	0.59	0.77	1.14	1.10
	Mean	1.52	1.14 ***	0.49	0.69	1.40	1.13 **
Control Variables							
Market Value (millions)	Median	759.85	609.89	274.85	944.88 ***	1105.95	2100.29 ***
	Mean	2115.94	3558.58 **	1623.52	3596.03 ***	1965.21	6581.31 ***
Book to Market Value	Median	0.70	0.77	0.45	0.50	0.41	0.45
	Mean	0.70	1.24	0.51	0.54	0.49	0.52
Price	Median	50.43	45.54 *	28.33	42.67 *	3.30	3.98
	Mean	95.72	70.58 *	84.91	148.53 ***	4.12	4.96 *
Volume (millions)	Median	11.93	12.66	11.47	21.76 *	77.06	197.00 ***
	Mean	89.64	222.47 ***	312.31	667.04 *	149.00	376.00 ***
Dividend Yield (%)	Median	2.94	4.00 ***	2.00	2.03	3.14	3.49
	Mean	3.46	5.85 ***	2.10	2.13	3.17	3.59 **
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		US					
		Family	Non-Family				
No. Firms with TSR Data		125	205				
Firm Performance							
TSR (%)	Median	1.05	1.33				
	Mean	1.22	1.33				
Control Variables							
Market Value (millions)	Median	3160	4340***				
	Mean	7332	10699***				
Book to Market Value	Median	0.577	0.654***				
	Mean	0.591	0.635***				
Price	Median	37.92	42.67***				
	Mean	41.52	45.46***				
Volume (millions)	Median	52.73	85.57***				
	Mean	136.84	154.48				
Dividend Yield (%)	Median	1.66	2.02***				
	Mean	1.74	1.99***				

Table 4: Performance-Attribution Regression Results of Equal-Weighted Portfolios

This table presents the coefficients and significance levels of the performance attribution regressions for the French, German, UK and US samples. These regressions are based on 108 observations - one for each month in the 9 year time period between January 1994 and December 2002 (US: 96 months from January 1992 to December 1999). *Alpha* is the abnormal return. *RMRF* is the value-weighted market return minus the risk free rate. *SMB* and *HML* are the two Fama and French size and book-to-market factors, while *UMD* is Carhart's momentum factor. For France, Germany, and the UK, we calculate *RMRF*, *SMB*, *HML*, and *UMD* separately for each country using the definitions of Rouwenhorst (1999). We form each country's total market using all companies in Datastream's dead and active lists for that country. Thus the total French market is based on 2189 firms, the total German market 4761 firms, and the total UK market 4271 firms. For the US we use the standard Fama-French and Carhart factors.

Country	Excess Return	Adj. R ²	Alpha	RMRF	SMB	HML	UMD
France	Family – Risk Free	0.61	-0.09 (0.771)	0.64 (0.0001)	-0.02 (0.874)	0.01 (0.879)	-0.09 (0.065)
	Non-Family – Risk Free	0.69	-0.55 (0.054)	0.74 (0.0001)	-0.02 (0.814)	0.03 (0.525)	-0.04 (0.349)
	Family – Non-Family	0.02	0.46 (0.046)	-0.10 (0.116)	0.01 (0.938)	-0.02 (0.562)	-0.05 (0.183)
Germany	Family – Risk Free	0.46	0.31 (0.370)	0.32 (0.0001)	-0.01 (0.951)	0.25 (0.0001)	-0.04 (0.209)
	Non-Family – Risk Free	0.52	0.49 (0.103)	0.28 (0.0001)	-0.13 (0.103)	0.34 (0.0001)	-0.01 (0.840)
	Family – Non-Family	0.10	-0.18 (0.422)	0.03 (0.242)	0.12 (0.035)	-0.08 (0.026)	-0.04 (0.089)
UK	Family – Risk Free	0.72	-0.43 (0.195)	0.86 (0.0001)	-0.09 (0.354)	-0.13 (0.043)	-0.24 (0.0001)
	Non-Family – Risk Free	0.82	-0.55 (0.027)	0.89 (0.0001)	-0.20 (0.007)	0.04 (0.391)	-0.14 (0.005)
	Family – Non-Family	0.19	0.11 (0.560)	-0.03 (0.503)	0.11 (0.069)	-0.17 (0.0001)	-0.11 (0.005)
US	Family-Risk Free	0.89	0.0007 (0.62)	0.9649 (0.01)	0.1302 (0.01)	0.1249 (0.02)	-0.3033 (0.01)
	Non Family-Risk Free	0.90	0.0013 (0.36)	1.0371 (0.01)	0.1565 (0.01)	0.2042 (0.01)	-0.3415 (0.01)
	Family – Non-Family	0.01	-0.0006 (0.70)	-0.0722 (0.09)	-0.0263 (0.56)	-0.0793 (0.16)	0.0382 (0.38)

Table 5: Fama-MacBeth Return Regressions

This table presents the average coefficients and time series standard errors for 108 equally weighted cross-sectional regressions for each month from January 1994 through December 2002 (US: 96 months from January 1992 to December 1999), except the second model using French accounting data, which was run from January 1995- December 2002 due to the missing 1993 sales growth variable. Regressions are run separately for each country. The dependent variable is industry-adjusted stock returns for month t . Industry adjustment is done by subtracting the appropriate average industry return from each firm's stock return each month. We calculated the average industry returns for each country using all equities quoted in Datastream during this time period (US: All firms listed in Compustat). *Family* is 1 if family and 0 otherwise. *Market Value* is the ln of the market value in millions of local currency at the end of month $t - 1$. *Book to Market Value* is the ln of the ratio of book value of common stock to the market value of common stock for the previous year. *Price* is the ln of the price in local currency at the end of month $t - 2$. Price is in euros for France and Germany, pence for the UK, and dollars for the US. *Volume* is the ln of the currency volume of trading (in thousands) in month $t - 2$. Currency volume is the price multiplied by the share volume. *Dividend Yield* is the dividend per share as a percentage of share price for the previous year. *Return2-3* is the ln of the compounded gross returns for months $t-3$ and $t-2$. *Return4-6* is the ln of the compounded gross returns for months $t-6$ through $t-4$. *Return7-12* is the ln of the compounded gross returns for months $t-12$ through $t-7$. *ROA* denotes Return on Assets, measured as net income divided by total assets. *Sales Growth* is the sales growth during the previous year. *LT Debt/Total Assets* is the book value of long-term debt divided by total assets. *Return Volatility* is the standard deviation of monthly stock returns for the previous 60 months. *Total Assets* is the natural log of total assets. *Firm Age* is the natural log of the number of years since the firm was created. Significance at the 1%, 5% and 10% levels is indicated by ***, ** and*, respectively.

Table 5: continued

	France		Germany		UK		US	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Family	0.65 *** (0.18)	0.64 *** (0.19)	0.07 (0.16)	0.01 (0.15)	0.03 (0.13)	-0.07 (0.15)	0.001 (0.001)	0.001 (0.001)
Market Value	0.03 (0.12)	-0.21 (0.19)	0.10 (0.08)	0.23 ** (0.12)	-0.32 ** (0.16)	-0.30 (0.27)	-0.001 (0.002)	-0.013*** (0.003)
Book to Market Value	0.18 * (0.12)	0.12 (0.17)	0.10 (0.14)	0.19 (0.16)	-0.23 ** (0.12)	-0.27 *** (0.11)	0.003 (0.005)	-0.026** (0.010)
Price	-0.12 * (0.09)	-0.19** (0.10)	-0.15 (0.07)	-0.14 ** (0.07)	-0.45 *** (0.11)	-0.44 *** (0.11)	-0.002 (0.002)	-0.003* (0.002)
Volume	0.01 (0.06)	0.02 (0.08)	-0.02 (0.06)	-0.02 (0.05)	0.11 (0.11)	0.03 (0.13)	0.002 (0.002)	0.004** (0.002)
Dividend Yield	0.04 (0.03)	0.03 (0.04)	-0.004 (0.06)	-0.01 (0.06)	0.02 (0.05)	-0.01 (0.06)	-0.004 (0.060)	-0.055 (0.052)
Return2-3	-2.63 ** (1.21)	-4.36 *** (1.28)	-4.68 *** (1.22)	-5.44 *** (1.21)	-4.10 *** (1.18)	-4.65 *** (1.22)	-0.025* (0.015)	-0.019 (0.014)
Return4-6	0.96 (0.93)	0.55 (1.00)	2.51 *** (0.80)	2.08 *** (0.82)	0.88 (0.86)	0.12 (0.80)	0.001 (0.017)	0.004 (0.016)
Return7-12	1.58 *** (0.68)	1.14 * (0.73)	1.93 *** (0.49)	1.57 *** (0.50)	2.01 *** (0.58)	1.72 *** (0.57)	0.076*** (0.020)	0.091*** (0.019)
ROA	-	9.61 *** (2.77)	-	5.92 *** (2.04)	-	0.17 (1.55)	-	0.013 (0.015)
Sales Growth	-	-0.22 (0.19)	-	0.41 ** (0.24)	-	-0.06 (0.21)	-	0.003 (0.004)
LT Debt/Total Assets	-	-0.02 *** (0.01)	-	-0.23 (0.64)	-	-0.96 ** (0.58)	-	-0.007 (0.005)
Return Volatility	-	-2.09 (5.22)	-	2.91 (5.36)	-	4.82 (6.02)	-	-0.109*** (0.034)
Total Assets	-	0.33 *** (0.14)	-	-0.11 (0.09)	-	0.11 (0.17)	-	0.010*** (0.003)
Firm Age	-	-0.16 (0.14)	-	-	-	-	-	-
Intercept	-0.64 (0.71)	-0.39 (1.17)	-0.04 (0.75)	-0.66 (1.10)	2.94 *** (1.09)	3.23 *** (1.09)	-0.005 (0.019)	0.056*** (0.020)

**Table 6: Performance-Attribution Regression Results of Equal-Weighted Portfolios
Survivor Bias Free French Sample January 1994 – December 2000**

This table presents the coefficients and significance levels of the performance attribution regression for the survivor bias free French sample of Sraer and Thesmar (2005). Sraer and Thesmar provided us with yearly ownership data for 685 firms quoted at some time over the 1994 through 2000 time period. Their definition of family ownership is if the firm's main shareholder is a single family that controls at least 20% of the shares. Of these 685 firms, we were able to find monthly total shareholder return data on Datastream for 576. In order to compare results with our 246 firm French sample, we also analyzed the top 245 firms of the Sraer and Thesmar sample separately. There is some overlap in the two French samples, 126 firms in the Sraer and Thesmar Top 245 sample are also present in our French sample. These regressions are based on 84 observations - one for each month in the 7 year time period. *Alpha* is the abnormal return. *RMRF* is the value-weighted market return minus the risk free rate. *SMB* and *HML* are the two Fama and French size and book-to-market factors, while *UMD* is Carhart's momentum factor. We calculated *RMRF*, *SMB*, *HML*, and *UMD* separately for each country using the definitions of Rouwenhorst (1999). We formed each country's total market using all companies in Datastream's dead and active lists for that country. Thus the total French market is based on 2189 firms, the total German market 4761 firms, and the total UK market 4271 firms.

Sample	Excess Return	Adj. R²	Alpha	RMRF	SMB	HML	UMD
Top 245	Family – Risk Free	0.60	-0.24 (0.536)	0.78 (0.0001)	0.20 (0.123)	-0.24 (0.001)	0.002 (0.974)
	Non-Family – Risk Free	0.66	-0.94 (0.008)	0.83 (0.0001)	0.02 (0.843)	-0.10 (0.103)	-0.06 (0.346)
	Family – Non-Family	0.23	0.70 (0.011)	-0.05 (0.554)	0.17 (0.046)	-0.14 (0.002)	0.07 (0.204)
Full Sample	Family – Risk Free	0.55	-0.62 (0.109)	0.74 (0.0001)	0.46 (0.0001)	-0.26 (0.0001)	-0.01 (0.944)
	Non-Family – Risk Free	0.58	-0.69 (0.045)	0.75 (0.0001)	0.16 (0.147)	-0.09 (0.115)	-0.07 (0.299)
	Family – Non-Family	0.41	0.07 (0.753)	-0.01 (0.877)	0.30 (0.0001)	-0.17 (0.0001)	0.06 (0.147)

Table 7: Performance-Attribution Regression Results of Equal-Weighted Portfolios for Founder, Heir and Professional CEOs of Family-Owned Firms, January 1994 – December 2000

This table presents the coefficients and significance levels of the performance attribution regressions for the French sample of Sraer and Thesmar for different management categories of family-owned firms. Sraer and Thesmar provided us with yearly ownership data for 685 firms quoted at some time over the 1994 through 2000 time period. Of these 685 firms, we were able to find monthly total shareholder return data on Datastream for 576. Sraer and Thesmar’s definition of family ownership is if the firm’s main shareholder is a single family that controls at least 20% of the shares. They also collected yearly data about the CEO of the family firms. Thus the family firm category also contains three sub-categories: founder CEO, heir CEO or professional CEO. The family firm is founder controlled when the founder of the firm still holds the family block and is CEO. The family firm is heir managed when heirs of the founder own the firm and one is the CEO. Finally, the family firm is professionally managed when the family holds the controlling block but the CEO position is held by an outsider. These regressions are based on 84 observations - one for each month in the 7 year time period. *Alpha* is the abnormal return. *RMRF* is the value-weighted market return minus the risk free rate. *SMB* and *HML* are the two Fama and French size and book-to-market factors, while *UMD* is Carhart’s momentum factor. We calculated *RMRF*, *SMB*, *HML*, and *UMD* separately for each country using the definitions of Rouwenhorst (1999). We formed each country’s total market using all companies in Datastream’s dead and active lists for that country. Thus the total French market is based on 2189 firms, the total German market 4761 firms, and the total UK market 4271 firms.

Excess Return	Adj. R²	Alpha	RMRF	SMB	HML	UMD
Founder CEO – Risk Free	0.63	-0.66 (0.158)	0.88 (0.0001)	0.72 (0.0001)	-0.47 (0.0001)	0.06 (0.506)
Founder CEO – Non-Family	0.63	0.03 (0.917)	0.13 (0.131)	0.57 (0.0001)	-0.38 (0.0001)	0.13 (0.028)
Heir CEO – Risk Free	0.38	-0.44 (0.235)	0.64 (0.0001)	0.30 (0.013)	-0.04 (0.506)	-0.05 (0.515)
Heir CEO – Non-Family	0.23	0.25 (0.292)	-0.11 (0.105)	0.14 (0.065)	0.05 (0.216)	0.02 (0.632)
Professional CEO – Risk Free	0.45	-0.63 (0.109)	0.70 (0.0001)	0.21 (0.092)	-0.07 (0.262)	-0.07 (0.353)
Professional CEO – Non-Family	0.001	0.07 (0.803)	-0.05 (0.479)	0.05 (0.543)	0.02 (0.691)	-0.001 (0.983)

Figure 1a: Total Number of Firms per Industry in France, Germany, and the UK

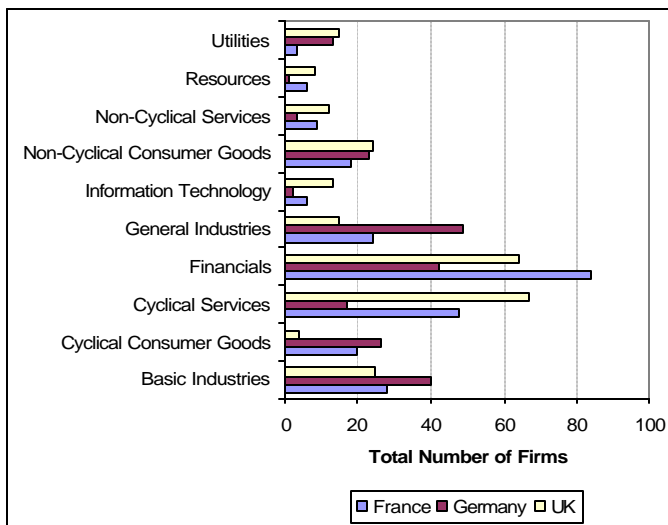


Figure 1b: % of Family-Owned Firms per Industry in France, Germany, and the UK

