

# Delistings, Controlling Shareholders, and Firm Performance in Europe

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## Abstract

Controlling shareholders possess private information on a firm's future profitability, which can be used to take the company private at the most favorable time. Using a novel data set of 429 European companies that went private during 1997–2005 but continued operating as standalone companies, we investigate the role of controlling shareholders in delisting decisions and determine whether this decision depends on the firm's future profitability. We find that minority shareholders earn lower abnormal returns in the 61-day event window (-30, +30) surrounding the delisting announcement when the controlling shareholder takes the company private (16.02% versus 24.02%), but this additional premium disappears once we control for the firm's characteristics in the multivariate analysis. In the analysis of post-announcement performance, we do not find evidence that firms delisted by their controlling shareholders improve their operating performance. These results do not support the hypothesis that controlling shareholders use this information to expropriate minority investors with minority freeze-outs. Examining delistings carried out by family controlling shareholders, we rule out the possibility that the previous result is due to heterogeneity across controlling shareholders. In fact, even when we focus exclusively on family controlling shareholders, we do not show evidence of performance improvement after the delisting.

**JEL Classification:** G34

**Keywords:** delisting, freeze-out, private firm, going private

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## 1. Introduction

During the boom years that preceded the financial crisis of 2007–2009, several publicly listed companies were delisted following going private transactions in Europe (Renneboog *et al.*, 2007; Thomsen and Vinten, 2007). Managers, controlling shareholders, and acquirers frequently use these transactions to voluntarily delist companies from stock exchanges. While private equity groups and leveraged buyout (LBO) firms were certainly instrumental in the growth of this phenomenon, companies' managers and owners often decided the fate of their firms. In fact, as is widely known (Faccio and Lang, 2002), the majority of European firms, especially in Continental Europe, have a large, dominant shareholder that exerts considerable control (Shleifer and Vishny, 1997). The existence of these large shareholders poses questions about the motivations behind going private transactions,<sup>1</sup> which are often carried out by the same controlling shareholder in deals that are commonly referred to as minority freeze-outs.

Controlling shareholders possess private information on the firm's future profitability, which gives them an advantage with respect to other investors that can be used to take the company private at the most favorable time. If insiders use their private information to time the firms' initial public offerings (IPOs) by taking their companies public after periods of superior performance and before periods of below-average performance (Degeorge and Zeckhauser, 1993), we can expect that they could do the same in going private transactions. However, differently from IPOs, informed controlling shareholders should use their private information to take their companies private before good performance, when the market price of minority shares does not incorporate this future improvement (Bebchuck and Kahan, 2000). This way, they would avoid sharing the performance improvement with other shareholders.

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<sup>1</sup> Recent evidence provided by Holderness (2009) shows that large shareholders are also common in U.S. firms. The author also documents that families control around 53% of the firms in a random sample of 375 corporations listed by the Center for Research in Security Prices and Compustat in 1995. Thus, family control is more widespread than previously thought, even in the US.

Controlling shareholders are in a strong bargaining position when they face minority investors, and they increase their power by reducing the probability of takeover offers. In fact, the probability to be taken over by unrelated bidders decreases when a majority owner exists (Caprio *et al.*, 2011), and the presence of large shareholders decreases the likelihood of private equity acquisitions (Achleitner *et al.*, 2010). This lack of competition from outside bidders can result in low buyout offers to minority investors in the going private transactions carried out by controlling shareholders. However, at least in countries with higher investor protection, minority investors can use the threat of legal recourse to increase their bargaining power (Bates *et al.*, 2006).

Using a novel data set of 429 European companies that went private between 1997 and 2005 but continued operating as standalone companies after the delisting, we investigate the role of controlling shareholders and whether the delisting decision depends on the firm's future profitability. Since we require that the delisted company continue operating after the deal as a standalone firm, our definition of delisting excludes those due to mergers or bankruptcies.<sup>2</sup> At the time of the delisting announcements, controlling shareholders make lower offers than non-controlling bidders do to take their companies private. In fact, minority shareholders in firms with a controlling shareholder earn an average abnormal return of 16.02% in the 61-day event window (-30, +30) surrounding the delisting announcement, while the abnormal return for shareholders in delisted firms without a controlling shareholder is 24.02%. However, this additional premium offered by non-controlling bidders disappears when we control for the firm's characteristics in the multivariate analysis. We also fail to detect any significant effect of the controlling shareholder's offer on abnormal returns in the three-day event window (-1, +1). However, going private transactions carried out by the controlling shareholders have less run-up than those carried out by a third party, indicating that freeze-out deals carried out by controlling shareholders are not easily

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<sup>2</sup> Our definition of delisting excludes those due to mergers or bankruptcies because after these events, the firm ceases to operate. We discuss this condition in more detail in Section 3.1.

anticipated by the market. As found in previous studies (Toms and Wright, 2005; Renneboog *et al.*, 2007; Weir *et al.*, 2008; Geranio and Zanotti, 2010), firms with poor stock price performance before the going private announcement have higher abnormal returns.

In the analysis of post-announcement performance, following Guo *et al.* (2011), we use three measures of changes in operating performance: (1) the change in firm performance, (2) the industry- and country-adjusted change in firm performance, and (3) the matching-firm-adjusted change in firm performance. Overall, we find evidence that the operating performance of firms delisted following offers by their controlling shareholders remains level after the delisting. While univariate analyses show that the operating performance in the first year after the delisting is weaker for firms taken private by a new owner, the apparent superior performance of firms controlled by their pre-delisting owners vanishes once we control for firm and market characteristics. In fact, we do not find evidence suggesting that controlling shareholders have a positive impact on post-delisting performance in the multivariate analysis. These results do not support the hypothesis that the controlling shareholder exploits private information in the going private decision to expropriate minority investors. The lack of support for the expropriation hypothesis is consistent with the results of Faccio and Stolín (2006), who do not find evidence of expropriation in their analysis of whether European controlling shareholders use acquisitions to extract resources from minority investors. We also find evidence of performance reversal at the operating level. The change in operating performance, measured by the industry-adjusted return on assets, is negatively associated with the pre-delisting operating performance.

Our lack of significant effects may be due to some heterogeneity across the controlling shareholders that delist their firms. Recent literature (Cronqvist and Fahlenbrach, 2009) shows that different types of large shareholders choose different corporate policies. To overcome this heterogeneity concern, we focus on the most common type of controlling shareholder in our

sample: families. Family control is often uncontested, and owners enjoy large private benefits of control, which also include non-pecuniary benefits (Barclay and Holderness, 1989). Families are more attached to the firm's control than other types of controlling shareholders, as the persistence of family control attests (Franks *et al.*, 2010), and they are more risk adverse (Bianco *et al.*, 2009). However, despite these well-documented differences, we still do not find evidence of a controlling shareholder effect in post-delisting performance, even when we focus on family controlling shareholders. Thus, heterogeneity across controlling shareholders does not appear to drive our results.

Finally, we compare delistings in Continental Europe to those in the UK. As Achleitner *et al.* (2010) note, the evidence on Continental Europe is still scarce compared to that for the US. While we find that there are some differences in the characteristics of firms that are delisted, we do not find any evidence of a controlling shareholder effect in the post-delisting operating performance in any of the two subsamples.

Our study offers several contributions to the literature. First, we examine whether private information on future firm performance induces insiders—that is, controlling shareholders—to take their companies private. Second, we provide an in-depth analysis of the role of controlling shareholders in going private transactions. Apart from Achleitner *et al.* (2010), most of the existing studies on going private transactions neglect the role of controlling shareholders in such transactions and assume that the public firm has a diffuse ownership, a situation that is rarely encountered in Europe (La Porta *et al.*, 1999) and, according to Holderness (2009), not so common even in the US.<sup>3</sup> We analyze controlling shareholders in general, and then we single out a category of these controlling shareholders, families, to examine if our results are due to heterogeneity

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<sup>3</sup> According to agency theory, going private transactions can help mitigate the agency costs arising in publicly listed, widely held companies (e.g., Murphy 1985; Jensen 1986; Kaplan 1989; Grossman and Hart 1980; Jensen 1993). However, this conflict is scarcely relevant in the typical European firm, where the largest shareholders already own a sufficient stake to give them incentives to monitor management.

across controlling shareholders. Third, we examine the post-transaction performance of delisted firms in Europe, adding to a growing literature that examines what happens after the going private transactions (Muscarella and Vetsuypens, 1990; Jelic *et al.*, 2005; Cressy *et al.*, 2007; Cao and Lerner, 2009; Guo *et al.*, 2011), but which usually focuses on LBOs and management buyouts. Unlike these papers, we include all going private transactions as in the study of costs and benefits of being public of Bharath and Dittmar (2010). Finally, we examine differences between UK and Continental European delistings.

This paper is structured as follows. Section 2 presents the literature review. Section 3 provides details of the data set and the main descriptive statistics. Section 4 examines the abnormal returns around the going private announcement, and Section 5 studies the changes in operating performances. Section 6 examines family controlling shareholders. Section 7 investigates the differences between UK and Continental European delistings. Section 8 presents the robustness checks, which include the role of insiders other than the controlling shareholders and an analysis of sample selection problems. Section 8 concludes the paper.

## **2. Literature Review and Hypothesis Development**

Since the mid-1990s, going private deals have become increasingly common in Europe. Since large shareholders are often in control of European firms (La Porta *et al.*, 1999; Faccio and Lang, 2002), the agency-related explanations—based on the conflicts between managers and shareholders in widely held firms—that dominate the literature on the first going private transaction wave of the 1980s in the US (e.g., Grossman and Hart, 1980; Murphy, 1985; Kaplan, 1989; Jensen, 1993) can hardly be applied in the European context.

Controlling shareholders have an informational advantage when facing minority shareholders and investors. They possess private information, and they can exploit this edge. DeGeorge and Zeckhauser (1993) argue that insiders (in their case, managers) use their private

information to time firm IPOs, taking their companies public after periods of superior performance and before periods of disappointing results. The opposite situation can occur in going private transactions (Bharath and Dittmar, 2010): Informed insiders—that is, controlling shareholders—use their private information to take their companies private before periods of unexpected good performance to avoid sharing the performance improvements with other shareholders. According to this line of thought, controlling shareholders will carry out going private transactions when they expect improvements in the firm’s performance that are still not incorporated in the firm’s stock price. Thus, we expect that, according to the expropriation hypothesis, following a going private transaction in which the controlling shareholders buy out minority investors, the firm’s operating performance will improve.

Even if operating performance improves after the delisting, expropriation does not take place if minority investors receive a fair price when they are bought out. Since controlling shareholders already enjoy the private benefits of control when the company is listed, it is unlikely that they will pay high premiums to freeze out minority investors and delist their companies. Despite the reduced bargaining power of minority investors, Bates *et al.* (2006) document that target shareholders obtain a relatively high premium in US freeze-outs bids (14.9%). However, compared with premiums offered when the bidder is not the controlling shareholder, there appears to be a control discount.<sup>4</sup> Thus, to support the expropriation hypothesis, we should observe lower abnormal returns around the announcement of a delisting carried out by the controlling shareholder and an increase in operating performance afterward.

Previous literature has shown that important differences exist between different types of blockholders (Cronqvist and Fahlenbrach, 2009). So, it is possible that the inclusion of different types of controlling shareholders with different incentives—more notably widely held

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<sup>4</sup> For example, Andrade *et al.* (2001) report an average target reaction of 20.1% for cash acquisitions around the acquisition announcement.

corporations, financial institutions, and families—will make it difficult to uncover the role played by controlling shareholders in delisting decisions. To mitigate this heterogeneity concern, we investigate the most common type of controlling shareholder: families. Families and individual investors value control more than other types of controlling shareholders, as the persistence of family control attests (Franks *et al.*, 2010), because control gives them the possibility to consume perquisites, often in forms of non-pecuniary and non-transferable private benefits (Holderness and Sheehan, 1988). Families are also very risk averse when it comes to potential threats to their control, as documented by their reluctance to start acquisitions that can dilute their control (Sraer and Thesmar, 2007; Bauguess and Stegemoller, 2008; Caprio *et al.*, 2011). Since families value control so highly, we expect that they will tend to exploit private information to their advantage.

While we focus on the role of controlling shareholders, we are fully aware that ownership structure is not the only factor that affects the decision to delist a company. The information asymmetry between manager/owner and the stock market investors often leads to undervaluation. This is especially common in small listed firms (Andres *et al.*, 2007; Renneboog *et al.*, 2007; Geranio and Zanotti, 2010; Boucly *et al.*, 2011), which face difficulties in attracting the interest of institutional investors, and their stock prices are more likely to remain low. Undervaluation of target firms' share price is the main source of shareholder gain in UK public-to-private transactions (Renneboog *et al.*, 2007; Weir *et al.*, 2008) and in Continental Europe (Wright *et al.* 2006), while the effect of incentive realignment between ownership and control is less important than in the US (Renneboog and Simons, 2005; Weir *et al.*, 2005). Finally, some studies find that shareholder protection is a determinant of going private transactions, which are more frequent in countries with stronger minority investor protection (Thomsen and Vinten, 2007). Andres *et al.* (2007) study leveraged European going private transactions and find that abnormal returns around an LBO announcement are inversely related to the degree of shareholder

protection (La Porta *et al.*, 1998), which implies that firms are valued at a discount in countries with poor investor protection, usually civil law countries.

### **3. Data Sources and Descriptive Statistics**

#### *3.1. Sample*

We start from the sample of all European companies listed on Orbis, a Bureau Van Dijk database that provides data on both private and publicly listed companies in Europe. More than 18 million companies are listed on Orbis for the following European countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the UK (18,445,237 firms). Out of these companies, we select those that delisted themselves from the stock exchange on which their shares were traded (5,579). Since we are interested in examining post-delisting performance, we require that the delisted company continue operating after the deal as a standalone firm. This requirement leads us to remove from our sample all takeover targets that were immediately integrated in the acquirer's organization with mergers, for which data are not available, and companies delisted because of bankruptcy. This screen leaves us with a sample of 3,333 companies. We then remove companies in the financial industry to avoid the introduction of biases in our measure of post-delisting operating performance (return on assets).<sup>5</sup> This reduces the potential sample firms to 2,809 industrial companies. Finally, we collect information about the time of the firm's delisting. This results in a total of 1,157 firms delisted between 1997 and 2005, our sample period.<sup>6</sup>

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<sup>5</sup> Since financial firms are substantially more leveraged than industrial firms are, returns on assets for the two groups of firms are not easily comparable.

<sup>6</sup> We end our sample period in 2005 to have three years of data after the going private transaction to examine the performance of delisted firms as private companies.

These screens, however, are not enough to create a clean sample of going private transaction deals in Europe. In fact, Orbis updates the field “formerly quoted firms” when the company decides to go public again, so we could ignore companies that exited and later re-entered the stock market. We use Datastream, a Thomson Reuters database, to correct this bias. We find 138 companies to add to our Orbis sample of 1,157, bringing the total to 1,295 companies.

We collect information about the going private deals related to these companies from the Thomson One Banker Mergers and Acquisitions (M&A) database and from Bureau Van Dijk’s Zephyr database. We are not able to find data about the going private transactions for 269 observations, and thus we drop them from the sample. Finally, we require companies to have financial, stock market, and ownership data available for the pre-delisting period and for at least one year after the delisting. We collect financial data from both Orbis (data available only from January 1, 1999, to December 31, 2008) and Osiris (Bureau Van Dijk, data available for the pre-1999 period). Stock price data are obtained from DataStream. Ownership structure data are from the annual reports available on Orbis and LexisNexis. While 625 firms have complete data for the pre-delisting period, only 429 firms have full post-delisting data for at least one year.<sup>7</sup> Therefore, our final sample consists of 429 observations from the following countries: Austria (three), Belgium (18), Denmark (eight), Finland (eight), France (72), Germany (25), Greece (three), Ireland (two), Italy (11), the Netherlands (14), Norway (10), Portugal (two), Spain (10), Sweden (36), Switzerland (one), and the UK (202).

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<sup>7</sup> To have complete data, we require the availability of the following data: total assets, cash reserves, debt ratio, and EBIT.

### 3.2. Variables and descriptive statistics

To study the role of insiders in European delistings, we collect ownership data on the large shareholders in the sample firms at the end of the year before the delisting announcement. Ownership information is collected from the Orbis database, from companies' annual reports and websites, and from Lexis/Nexis.<sup>8</sup> We define the largest shareholder in the company as the controlling shareholder if it owns at least 20% of the voting rights.<sup>9</sup> However, buyers other than controlling shareholders may be privy to extensive private information, for example, large shareholders, managers, and industry insiders. To this end, we also collect information on all the firm's large shareholders, defined as blockholders, who own at least 5% of the voting rights; on the firm's chief executive officer (CEO) before and after the delistings; and on the buyer's industry.

Table 1 breaks down the 429 observations according to the identity of the party that carried out the delisting. We find that in 132 of the 429 observations, the entity that carried out the delisting was a blockholder of the firm, with more than 5% of the voting rights, and in 128 observations this blockholder was the largest shareholder in the company. Further examination shows that the firm's controlling shareholder bought out minority shareholders in 118 observations of these 132 delistings carried out by large shareholders (89.39%). In the remaining four cases, the delisting was carried out by blockholders with at least 5% of voting shares that are not the largest shareholders. The few delistings carried out by blockholders other than the controlling shareholder are not surprising, and this confirms the findings of Liao (2011) and Betton *et al.* (2009), who document that toeholds do not predict full acquisitions. Also consistent with the literature (Boone and Mulherin, 2007), there are few publicly contested delistings, only 18 out of 429, that is, 4.20% of the observations.

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<sup>8</sup> Orbis often allows us to track the control chain up to the ultimate owner. We use annual reports available via Orbis and company information on LexisNexis as the primary source in the early part of our sample period.

<sup>9</sup> Twenty percent is a standard cutoff point in the ownership literature (Faccio and Lang, 2002). Results are remarkably similar if we use a 10% cutoff point.

Family controlling shareholders represent more than half of the observations (67 out of 118) in which the controlling shareholder delists its company, and their delistings take place predominantly in Continental Europe.<sup>10</sup> We consider a firm a family firm if the largest shareholder owns more than 20% of the firm's voting rights and this largest shareholder is either a family or directly or indirectly controlled by one (at the 20% level). The fact that controlling shareholders plays a dominant role and not many delistings were carried out by other blockholders support our choice to focus on controlling shareholders. We extend our analysis to other large blockholders in the robustness section.

We also collect the names of the CEOs the year before and after the deal to determine if the transactions triggered an immediate change at the top of the company. We find twice as many firms that did not change their CEOs as those that experienced a CEO change. Finally, we consider whether the bidder operates in the same industry as the target firm. We find that observations are almost evenly split between buyers from inside and outside the industry. We discuss the role of CEOs and industry in the robustness section.

[Please insert Table 1 about here]

We present descriptive statistics of our sample firms one year before, one year after, and three years after the delisting in Table 2. Panel A of Table 2 presents statistics for the full sample. The role of controlling shareholders in going private transactions is analyzed in Panel B of Table 2, where we examine two subsamples of delisted firms: firms taken private by their controlling shareholders and firms taken private by third-party acquirers.

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<sup>10</sup> The remaining controlling shareholders are either corporations or financial institutions such as private equity funds.

We examine the following variables: *Voting Rights* is the fraction of the firm's voting rights owned by the controlling shareholder, *Stock Performance* is the market-adjusted stock price performance in the event window (-240, -41) before the announcement, *Total Assets* is the firm's total assets in millions of Euros and our proxy for the size of the company, *Tangible Assets* is defined as the value of all the firm's tangible assets scaled by total assets,<sup>11</sup> *Leverage* is the ratio between financial debt and total assets, *Cash Reserves* is defined as the amount of cash and cash equivalents scaled by total assets, and *ROA* is the firm's return on assets computed as earnings before interest, and taxes (EBIT) over the firm's total assets at the end of the previous year.<sup>12</sup> Financial statements data are obtained from the Orbis database, while stock price data are from Datastream. Appendix A presents the correlation matrix between these variables, as well as between all the variables used in the paper.

[Please insert Table 2 about here]

Overall, consistent with the literature, our sample firms have a concentrated ownership structure, with an average voting stake for the largest shareholder of 38.2% (median 29.4%). Firms that are bought out by their controlling shareholders have a considerably more concentrated ownership, with the largest shareholder that holds 61% of the voting rights. The market-adjusted stock price performance of the delisted companies is positive but not statistically significant, and we do not observe significant differences between the subsamples examined in Panel B of Table 2. Firms delisted by their controlling shareholders are on average larger (almost 1.5 times as large as their counterparts are). The average leverage ratio for delisted firms is 19.2%, without significant

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<sup>11</sup> Orbis breaks down fixed assets into tangible assets, non-tangible (intangible) assets, and other fixed assets. These other fixed assets are long term-financial investments, shares and participations, pension funds, and so forth. Current assets complete the typical Orbis balance sheet.

<sup>12</sup> We use EBIT as the numerator in the *ROA* measure, because earnings before interest, taxes, depreciation, and amortization (EBITDA) are missing many values in Orbis in the post-delisting years.

differences between the two subsamples. Cash reserves, on average, account for 10.5% of total assets, even though the median is lower (5.2%). There is some evidence that firms delisted by the controlling shareholders have more liquid assets than other delisted firms do.

We now turn our attention to a comparison of the firm characteristics before and after the going private transactions. We present and compare the means and medians of financial variables for the year before the delisting (Year -1), the year after (Year 1), and three years after (Year +3). In Panel A of Table 2, there are significant changes between Year -1 and Year +1 and between Year -1 and Year +3, suggesting that the delisting represents a clean break with the past. Tangible assets decrease significantly, as expected, since delisting often implies downsizing to improve efficiency (Shleifer and Summers, 1998; Weston *et al.*, 1998). The average firm's leverage ratio increases from 19.2% to 28.8% one year after, and to 31.3% three years after the delisting. This low post-transaction debt ratio is consistent with the literature on European going private deals. In fact, Toms and Wright (2005) document that equity finance is more important in going private transactions in the UK than in the US. This increase in the debt ratio may also be a direct consequence of the costs incurred to delist the company. The higher debt once the company is private is also consistent with Brav (2009), who finds that private companies rely more on debt financing than public companies. Private firms do not reduce the additional debt they assume at the time of the delisting, partially because it remains relatively low, but cash reserves decrease immediately after the delisting. The firm's operating performance, measured by the firm's *ROA*, is significantly worse in the year following the delisting and remains low in Year 3, indicating that there are no gains at the operating performance level after the delisting. The median delisted firm becomes smaller, probably because of asset stripping, but the difference between pre- and post-delisting is not statistically significant.

In Panel B of Table 2, the comparison between firms delisted by their controlling shareholders and by other types of bidders produces the following results. The median firm taken private by the controlling shareholder and the firm bought and delisted by a third party experience different restructuring processes in the year following the delisting. The reduction in tangible assets and cash reserves is less accentuated in firms delisted by controlling shareholders. These firms also experience a less dramatic worsening of their operating performance than other delisted firms do in Year 1, but the difference between the two groups is not significant in Year 3. Leverage increases in both subsamples.

Overall, these preliminary results do not suggest that controlling shareholders take their companies private before a surge in operating performance. In fact, there is a marginal decrease in operating performance, even for firms delisted by their controlling shareholder. Thus, controlling shareholders do not seem to take their firms private because of the expectation of future improvements in operating performance.

#### **4. Wealth Effects of Going Private around the Delisting Announcements**

The first step in our analysis is to investigate the market reaction around the delisting announcements. To measure whether the decision to go private creates value for the firms' shareholders, we compute the cumulative abnormal returns (CARs) around the announcement date. We use two event windows around the announcement day—(-1, +1) and (-30, +30)—and one event window to examine whether there is stock price run-up before the announcement (-30, -3). We compute CARs using a standard market model methodology. Panel A of Table 3 summarizes the results.

The average abnormal return is +9.60% in the event window (-1, +1), and +21.82% in the longer event window (-30, +30). This result indicates shareholder wealth creation, and it is broadly

consistent with the evidence on acquisitions in Europe (Martynova and Renneboog, 2011). The magnitude of the coefficient in (-1, +1) is similar to those for increase-in-ownership acquisitions in Continental European countries documented by Croci and Petmezas (2010), but lower than in the UK. The increase of 21.82% in (-30, +30) is in line with previous European evidence on public-to-private transactions (Andres *et al.*, 2007; Geranio and Zanotti, 2010). We also compare CARs when the controlling shareholders freeze out minority investors in the firms they control to CARs in going private transactions not carried out by controlling shareholders. Firms bought out by the controlling shareholders have a smaller run-up and a lower abnormal return in the long event window than firms delisted by a third party. Overall, this evidence tends to suggest that controlling shareholders can affect the wealth effect around the delisting announcement. However, we need to control for other effects that may explain these differences.

[Please insert Table 3 about here]

Since it is well known that several factors affect CARs around an acquisition announcement, we regress CARs on our variables of interest and control variables in Panel B of Table 3.<sup>13</sup> The variable of interest is *Controlling Shareholder*, which is a dummy variable that takes the value one when the delisting is carried out by the controlling shareholder, and zero otherwise. The control variables are *Voting Rights*, *Ln(Total Assets)*, *Tangible Assets*, *Leverage*, *Cash Reserves*, *ROA*, *Self-Dealing*, and *Stock Performance*. The variable *Self-Dealing* is the self-dealing index proposed by Djankov *et al.* (2008).<sup>14</sup> We introduce this variable to take into account the importance of investor protection, as documented by Andres *et al.* (2007). All regressions control for time and country fixed effects, and the coefficient for UK delistings is reported in the table.

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<sup>13</sup> We obtain similar results if we use CARs in the event window (-2, +2) as a dependent variable in our regressions.

<sup>14</sup> We obtain remarkably similar results if we use the anti-director rights index of La Porta *et al.* (1998) and its revisions by Djankov *et al.* (2008) and Spamann (2010).

We find in Table 3 that *Controlling Shareholder* does not affect the abnormal returns in the event window (-1, 1) (columns I and II) or in the event window (-30, 30) (Columns III and IV). This finding does not confirm the results of the univariate analysis and suggests that differences found in univariate tests are due to other factors. The variable *Voting Rights* has a negative and significant effect on CARs, confirming the previous findings (Kaplan, 1989; Andres *et al.*, 2007; Renneboog *et al.*, 2007). Firm size, proxied by  $\ln(\text{Total Assets})$ , has a negative and highly significant coefficient in the first two regressions, but the results are weaker in the longer event window. *Tangible Assets* enter with a negative but statistically insignificant sign in the regressions. The industry-adjusted *ROA* negatively affects CARs. Consistent with Schwert (1996), the CAR is higher for firms with bad market-adjusted stock price performance (*Stock Performance*) during the period (-240, -41). This result, which supports the undervaluation hypothesis, is consistent with Renneboog *et al.* (2007), Weir *et al.* (2008), and Geranio and Zanotti (2010). The measure of shareholder investor protection, *Self-Dealing*, and the dummy for UK delistings are never statistically significant. Finally, in columns V and VI of Table 3, we investigate abnormal returns in the run-up period (-30, -3). Consistent with the univariate evidence, the run-up is lower if a firm's controlling shareholder carries out the deal. Leverage has a negative effect on the run-up returns. The market-adjusted returns before the acquisition are again negative and significant, but the firm's size is now not significant.

Overall, this evidence suggests that, around the delisting announcement, the returns for minority shareholders do not depend on the controlling shareholder carrying out the transaction. Controlling shareholders do not appear to pay lower premiums to exploit minority shareholders when they buy out minority shareholders.

## 5. Analysis of the Changes in Operating Performance after the Delisting

### 5.1. Measures of changes in operating performance

To measure post-delisting performance, we must rely exclusively on financial statement data because stock prices are no longer available once the firm leaves the stock market. Following Guo *et al.* (2011), we compute several measures of changes in firm operating performance. The first measure is  $\Delta ROA$ , defined as the difference between the ROA in the first (third) year after the delisting and the firm's ROA for the last full year in which the company was publicly listed (Year - 1).<sup>15</sup> Thus,  $\Delta ROA$  is computed as  $ROA_{t+1(3)} - ROA_{t-1}$ . However, this measure does not control for the expected performance the firm could have had if it had remained a public company. As Guo *et al.* (2011) observe, the evaluation of the economic and statistical significance of pre- to post-delisting changes in operating performance requires that the measure be adjusted according to some benchmark. Put differently,  $\Delta ROA$  does not distinguish between expected and unexpected changes in performance.

To address this issue, we compute two additional measures of adjusted changes in operating performance. In our second measure, *Adj.  $\Delta ROA1$* , we subtract the change in the median ROA of the listed firms in the target firm's industry and country *to*  $\Delta ROA$  (Kaplan, 1989). The third measure, *Adj.  $\Delta ROA2$* , follows Barber and Lyon (1996). We compute the adjusted change as the difference between the change in ROA for a sample firm and a change in ROA for a matching firm. Thus, the measure *Adj.  $\Delta ROA2$*  is computed as the difference between the delisted firm  $\Delta ROA$  and the control firm  $\Delta ROA$ . For each delisted company, we select its matching company in the year immediately prior to the delisting announcement on the basis of the two-digit Standard Industrial Classification (SIC) code, country, size, and pre-delisting operating performance to filter

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<sup>15</sup> We run the same regression models, defining ROA as EBITDA over total assets, and obtain similar results. We present estimates of the regressions in which we use EBIT to compute ROA to mitigate the loss of observations.

out the effects of industry- and country-wide factors. We match using a size constraint to take into account the size of the firms in the acquisitions. Appendix B describes the algorithm used to select matching firms.

## 5.2. Results

In addition to our variable of interest, *Controlling Shareholder*, we include in the regressions the following financial variables: *Voting Rights*, *Cash Reserves*, *Tangible Assets*, and  $\ln(\text{Total Assets})$ . We also include the industry-adjusted pre-delisting operating performance (*Ind. Adj. ROA*) to measure the persistence of operating performance. We include in the regression the yield on long-term (ten years) government bonds (*LTIR*) as a proxy of credit market conditions. All the independent variables are measured at the end of the year before the delisting. Panel A of Table 4 shows the results of the OLS models, which all include time and country fixed effects, where the dependent variable is the change in operating performance between the year before and the year after the delisting. Columns I to III of Table 4 present the results for the changes in operating performance between Year -1 and Year 1; columns IV to VI show the results for the changes between Year -1 and Year 3.

[Please insert Table 4 about here]

We do not find evidence that the change in operating performance between the years before and after the delisting is associated with the identity of the pre-delisting owner. In fact, the variable *Controlling Shareholder*, which captures whether the delisting is carried out by the existing controlling shareholder, is not significant, with only the exception of  $\text{Adj. } \Delta ROA_{1(-1, 1)}$ , which is significant and positive at the 10% level. The voting rights owned by the largest pre-delisting shareholder are also not significant, suggesting that an increase in voting power does not

lead to more information to exploit in delisting. The firm size is negative and significant when we use  $\Delta ROA$  (column I of Table 4), but only when we use more sophisticated measures that control for industry, performance, and size. Using these more refined measures, we find that the leverage the year before the delisting has a negative effect on firm performance, reducing operating gains. The firm's industry-adjusted ROA has a strong and negative effect on the change in operating performance, highlighting a reversion toward the mean. Higher interest rates have a negative effect on the change in performance, which is consistent with the view that a tighter credit market can induce firms to abandon or pass up profitable investment projects. However, this result is not robust to the change in the operating performance measure.

Looking at the change in performance between the pre-delisting year and three years after the delisting, we obtain similar results. The initial level of industry-adjusted operating performance is still negative and strongly significant, confirming the reversal in firm performance that takes place after the delisting. The variable *Controlling Shareholder* is negative but insignificant. Thus, we do not find any effect related to controlling shareholders, even in the long term. There is some evidence (columns IV and V of Table 4) that initial cash reserves help the firms generate better performance. Finally, delisted firms in the UK experience a more accentuated worsening of their performance than firms from other countries (columns IV and V of Table 4).

To further analyze the role of controlling shareholders, we interact our dummies for delistings carried out by controlling shareholders with the pre-delisting industry-adjusted ROA. As is clear from Panel B of Table 4, we do not find a significant interaction between these variables. This analysis confirms that controlling shareholders do not tend to time the market or expropriate minority shareholders using private information when they take their companies private. Overall, the results for the other controlling variables are consistent with those of Panel A of Table 4.

In unreported regressions, we also add abnormal returns around the acquisition announcement as an independent variable. Contrary to Healy *et al.* (1992), who find a positive relation between CARs and post-merger operating performance in US mergers, we do not find evidence of any relation between announcement CARs and changes in operating performance.

Overall, these results suggest that controlling shareholders do not take their companies private to avoid sharing the improvement in operating performance with minority shareholders. Far from exploiting minority shareholders, the behavior of controlling shareholders is beneficial to them, at least in the short term. In fact, because of the delisting offer, minority investors are able to obtain a premium on the market price of their shares, which does not seem to be justified by performance improvement in the following years.

## **6. Families as Controlling Shareholder**

The previous analysis considers controlling shareholders as a homogeneous category. However, it is well known that several categories of large shareholders exist (Faccio and Lang, 2002), and they have different characteristics and behavior (Cronqvist and Fahlenbrach, 2009). Among the types of shareholders, families have received a lot of attention in the literature, both because of the diffusion of family firms around the world and because of their particularities. Generally, family controlling shareholders focus on maximizing their own utility, and not the welfare of all shareholders (Bertrand and Schoar, 2006). Family control is often uncontested, and the family owner enjoys large private benefits of control (e.g., Faccio and Lang, 2002), including non-pecuniary benefits (Barclay and Holderness, 1989). Family firms are more risk adverse than other firms, given the large and often undiversified family investments in firms (Anderson and Reeb, 2003; Faccio *et al.*, 2011). Families rarely sell their controlling stakes to outsiders (Holderness and Sheehan, 1988; Bauguess and Stegemoller, 2008; Caprio *et al.*, 2011), and their

firms make fewer acquisitions (Sraer and Thesmar, 2007; Bauguess and Stegemoller, 2008; Caprio *et al.*, 2011). Bianco *et al.* (2009) observe that family firms are more adverse to uncertainty than non-family firms, leading to fewer investments. Thus, families are more attached to firm control than other types of controlling shareholders, and they are more risk adverse. To investigate whether our previous results are determined by heterogeneity across controlling shareholders, we focus on families as controlling shareholders. We examine whether the characteristics that make families unlike other controlling shareholders give them the incentive to exploit informational advantages to expropriate minority investors with delisting decisions.

We consider a firm delisted by its family controlling shareholder if the delisting is carried out by the firm's largest shareholder and, at the end of the year before the delisting announcement, the largest shareholder owns more than 20% of the firm's voting rights and the largest shareholder is either a family or directly or indirectly controlled by a family at the 20% level.<sup>16</sup> To examine the role of family control, we employ *Family Controlling Shareholder*, a dummy variable that takes the value one when the delisting is carried out by a family controlling shareholder, and zero otherwise. Put another way, *Family Controlling Shareholder* comprises a subset of *Controlling Shareholder* where the controlling shareholder is a family.

Similarly to previous studies (Faccio and Lang, 2002; Barontini and Caprio 2006), we find in Table 5 that ownership is significantly more concentrated when a family controls the company. Families that delist the firms they control own, on average, 68% of the company's vote (the median is above 70%). These firms are significantly larger and have more cash reserves than other firms that go through a delisting. This finding contrasts with the typical situation where family firms are smaller than non-family firms (Franks *et al.*, 2010; Caprio *et al.*, 2011). Firms delisted by their family owners have better stock price performance on average, but the difference is not

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<sup>16</sup> To identify the family control, if the largest shareholder of the sample firm is another corporation, we searched for who is behind this corporation.

statistically significant. These firms have operating performance and leverage that are very close to those of the other delisted firms.

The behavior of firms delisted by their family owners and those delisted by third parties and other types of large shareholders appears remarkably similar. Both firms delisted by family owners and non-family firms take advantage of the delisting to reduce their tangible assets. There is some evidence indicating that both groups of firms alter their capital structure following delisting, increasing debt financing, in line with Brav (2009), who shows that private firms have more debt. Cash reserves decrease substantially after delisting. The only remarkable difference between firms delisted by their family owners and other delistings concerns operating performance. While the decline in operating performance is not significant for firms delisted by their family owners, we find a significant deterioration in the operating performance of firms not delisted by the family owners. However, the difference between the two groups is statistically significant only in Year 1 (median).

[Please insert Table 5 about here]

Concerning CARs around the delisting announcements, we find that minority shareholders in firms delisted by families earn lower abnormal returns than shareholders in firms taken private by other parties. However the difference is significant only in the short-term event window (-1, +1), while in the long event window (-30, 30) we find that the abnormal return earned by shareholders in family firms is lower but not statistically significant than that earned by shareholders in non-family firms (16.83% versus 22.75%). Firms delisted by family controlling shareholders appear to have less run-up than other delisted firms, with an average run-up of 2.61% vis-à-vis an average run-up of 9.04% for firms not delisted by a family controlling

shareholder. This difference is probably related to lesser information leakage when a family tightly controls a company. In an unreported analysis, we also run a multivariate regression where the dependent variables are the CARs in different event windows.<sup>17</sup> The variable *Family Controlling Shareholder* is never significant in these multivariate regressions.

We also analyze the change in the post-delisting operating performance of these firms delisted by their controlling family shareholders in Table 6, in which we replicate the regression analysis of Table 4. As is clear from Table 6, we do not find a significant effect of family control in the post-delisting operating performance.<sup>18</sup> This result confirms our previous evidence and suggests that the lack of a more general controlling shareholder effect is not due to heterogeneity across large shareholders.

[Please insert Table 6 about here]

## **7. Continental Europe versus the UK: Two Different Worlds?**

As noted by Achleitner *et al.* (2010), while there are several studies regarding the UK market, Continental Europe has received less attention. Franks *et al.* (2010) observe substantial differences between the UK, an outsider country—that is, a country with developed financial markets, more M&A activity, and better investor protection—and Continental European countries such as Germany, France, and Italy. According to Franks *et al.* (2010), these Continental European countries are insider countries, characterized by relatively less developed financial markets, less M&A activity, and worse investor protection. Thus, there may also be differences between the UK

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<sup>17</sup> We do not report the table for the event study and multivariate OLS regressions for CARs for the sake of brevity. These unreported tables are available from the authors.

<sup>18</sup> We also replicate Panel B of Table 4, including the interaction between *Family* and *Adj. ROA*. As is the case in Panel B of Table 4, the interaction is never significant and does not alter the other results, compared to Panel A. This unreported panel is available from the authors.

and Continental Europe in delistings carried out by controlling shareholders.<sup>19</sup> While we control for these differences in the previous analysis with the inclusion of country fixed effects, this issue deserves a more careful investigation.

[Please insert Table 7 about here]

Panel A of Table 7 reports descriptive statistics and CARs for subsamples of Continental European and UK delistings. There are notable differences between the two subsamples, especially concerning the characteristics of the targeted firms. The table highlights that the voting rights of the largest direct shareholders are far less in the UK than in Continental Europe (19.1% versus 54.2%), as expected (Faccio and Lang, 2002; Franks *et al.*, 2010). Firms that are delisted in the UK experience a bad stock price performance before being taken private (-4.01%), while firms with excellent performance are delisted in Continental Europe (13.70%). The difference is statistically significant and consistent with the previous literature, which argues that going private transactions in the UK are mainly the result of restructuring needs. The UK targets are smaller and with more tangible assets than Continental European firms. The UK firms also use more debt, and the substantial increase between Year -1 and Year 3 can be partially explained by the higher propensity of private UK firms to finance their investment projects with debt (Brav, 2009). While ROA is similar for the two subsamples before the delisting, Continental European targets do not experience a statistically significant decrease in their operating performance like their British counterparts do.

Finally, abnormal returns are higher in UK deals than in non-UK deals. This result is in contrast to Andres *et al.* (2007), who find that abnormal returns are higher in countries with poor

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<sup>19</sup> To make the comparison easier, we consider Irish firms as Continental European companies. Given that we have only two Irish companies in our sample, this decision does not have any effect on our results.

investor protection. The evidence, however, is in line with the results of Croci and Petmezas (2010), who report that in Continental Europe abnormal returns in increase-in-ownership transactions are lower than in the UK. However, the results of unreported CAR regressions show no significant difference between UK and Continental European delistings and are remarkably similar to those reported in Panel B of Table 2 for the full sample.<sup>20</sup> The dummy for delistings carried out by the controlling shareholder is significant only in the run-up window (-30, -3) in both subsamples.

Panel B of Table 7 replicates the analysis of Table 4 for the post-delisting operating performance in the Continental Europe and UK subsamples, respectively.<sup>21</sup> The regression results highlight both similarities and differences between the two subsamples. Again, neither in the UK nor in Continental Europe subsamples do we find conclusive evidence that controlling shareholders take their companies private before performance improvement. In fact, while the *Controlling Shareholder* coefficient is significant in column II of Panel B in Table 7 for Continental Europe, the coefficient is not significant in any other regression, including those for the change in performance when we adjust for the change in a similar firm ( $\Delta ROA2$ ). While the size of the target firm negatively impacts the post-delisting operating performance in Continental Europe, it does not in the UK. A potential explanation lies in the larger size of Continental European deals. There is also some weak evidence that leverage lowers operating performance in Continental Europe, but only in the immediate aftermath of the delisting, and that higher cash reserves are associated with better performance in the UK. Among the similarities, we find that the change in operating performance of delisted firms is negatively associated with the initial industry-adjusted ROA, supporting the view that a performance reversal occurs after delisting.

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<sup>20</sup> The unreported results are available from the authors.

<sup>21</sup> The long-term interest rate (*LTIR*) is not included in the UK regressions because the model already includes fixed time-effects.

Overall, while differences exist in the characteristics of the targeted firms, we do not find evidence suggesting that controlling shareholders have different policies on delistings in the UK compared to Continental Europe.

## **8. Robustness Checks**

### *8.1. CEOs, large shareholders, and industry insiders*

Even when the firm is taken private by someone other than the controlling shareholder, the buyer may be privy to extensive private information. This section examines if CEOs who keep their jobs after delistings, large shareholders with stakes of over 5% of the company's voting rights, and industry insiders exploit their private information during the delisting.

Table 1 shows that, more often than not, the CEOs of delisted firms keep their jobs. Table 8 examines whether the lack of CEO turnover affects post-delisting performance. The presence of the same CEO could be a positive signal for the delisted firms. Being in a position to have private information about the future profitability of the company, the CEO's willingness to continue working for the company may signal good news about the firm's future performance.

[Please insert Table 8 about here]

Indeed, Table 8 presents some evidence that this is the case. Two out of the three measures of abnormal performance (*Adj. ΔROA1* and *Adj. ΔROA2*) show a positive and significant coefficient, indicating that firms that do not change CEOs right after delisting have better operating performance. However, this superior performance vanishes when we look at the improvements within three years of the delisting. Thus, it seems that maintaining the pre-delisting CEO is a good decision in the short term, but it does not add value in the long run. Probably the

better performance in the short term stems from the fewer adjustments an old CEO has to make, compared to a newly hired CEO who arrives right after a major event in the company's life. It seems, therefore, that, more than private information, better knowledge of the firm by an old CEO can give an advantage to firms that decide not to fire their CEOs after delisting.

Large shareholders other than the controlling shareholders can decide to buy and delist the target firm based on private information they collected while monitoring the firm's management and/or controlling shareholders. However, while this is certainly possible from a theoretical point of view, Table 1 clearly shows that in only 14 observations was the delisting carried out by a non-controlling large shareholder with more than 5% of the voting rights. In unreported analysis, when we replicate our analysis to include all the delistings completed by large shareholders, we obtain results that closely resemble those obtained for controlling shareholders.<sup>22</sup>

Finally, a last group of buyers that can have private information are industry insiders. To examine this issue, we examine the post-delisting performance of buyers that operate in the same two-digit SIC code of the delisted firm. Being industry insiders, these buyers may know industry-specific (and even firm-specific) information ignored by other investors. In unreported tables, we replicate the analysis of Tables 4 and 5 with a dummy variable that takes the value one for delistings carried out by buyers from the same industry in lieu of *Controlling Shareholder*, and zero otherwise. We do not find evidence supporting the hypothesis that industry insiders buy and delist firms whose performance improved after the going private transactions.<sup>23</sup>

## 8.2. Sample selection and operating performance

This section investigates whether the loss of observations due to missing post-delisting data affects the results shown in Table 4. In Table 9, we perform a Heckman two-stage procedure

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<sup>22</sup> These analyses are available from the authors upon request.

<sup>23</sup> These analyses are available from the authors upon request.

on the sample of 625 delistings with pre-delisting data to examine whether the post-delisting data unavailability biases our results on the changes in operating performance between Year -1 and Year 1.<sup>24</sup>

[Please insert Table 9 about here]

The selection model includes as variables the dummy for delistings carried out by controlling shareholders (or controlling family shareholders), the voting rights, an LBO dummy that takes the value one if the deal is carried out in the form of an LBO, the log of total assets, cash reserves, tangible assets, leverage, ROA, self-dealing, and the long-term interest rate.<sup>25</sup> The results of the second stage are presented in Table 9 and are remarkably similar to those in Tables 4 and 6, confirming our previous findings. The missing observations do not seem to bias our results. In fact, the coefficient for Heckman's lambda (or the inverse Mills ratio), *Lambda*, is never significant.

Finally, in Panel B of Table 9 we investigate if exits between the first and third post-delisting years cause the lack of significance of *Controlling Shareholder* in regressions IV to VI of Table 4. In fact, we can observe that the number of observations drops from 429 to 360 when we examine the performance over a three-year period after the delisting.<sup>26</sup> With the same selection model as in Panel A of Table 9,<sup>27</sup> the results for the second stage shown in Panel B confirm the lack of a significant relation between the change in operating performance and the identity of the party carrying out the delisting.

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<sup>24</sup> We also perform the Heckman procedure for the models in Table 3, where the dependent variables are CARs. The results are similar to those presented and are omitted for the sake of brevity.

<sup>25</sup> The results for the first stage are available from the authors. *Self-dealing*, which does not appear in the second-stage model, has a negative and significant coefficient.

<sup>26</sup> This reduction is due to firms that (1) were sold to other parties and then dissolved (nine companies), (2) were dissolved or dormant (11 companies), (3) went bankrupt or were liquidated during the period (six companies), or (4) do not have data available on Orbis/Osiris three years after the delisting (43 companies).

<sup>27</sup> *Self-dealing*, which does not appear in the second-stage model, has a negative and significant coefficient.

## 9. Conclusions

This paper investigates the role of the controlling shareholder in the growing market of European going private transactions in Europe. European deals are particularly important because most European companies have a controlling shareholder, whose existence permits us to examine going private deals carried out by the company's controlling shareholder.

We show that once we control for firm characteristics, CARs around going private announcements are not associated with controlling shareholders carrying out the firm's delisting. We find support for the undervaluation story documented in previous literature. In fact, the market reaction around the going private announcement is negatively related to the company's stock price performance before the announcement. We provide evidence that when controlling shareholders delist their firms, operating performance does not improve in the years after the delisting and, once we control for firm characteristics, there is no evidence of a controlling shareholder effect on post-delisting operating performance. This result suggests that controlling shareholders do not use private information to take their companies private, to the detriment of minority shareholders. In fact, after the delisting, if the controlling shareholder buys out minority investors, performance remains relatively stable, so minority investors do not miss out on any substantial improvement. This lack of a controlling shareholder effect in delistings is not due to heterogeneity across large shareholders. Indeed, we also examine delistings carried out by controlling family shareholders, a rather homogeneous group, and we do not find any evidence suggesting that families use delistings to exploit minority investors in the company. Finally, while we observe important differences between the UK and Continental Europe, we do not find evidence that controlling shareholders that carried out the delisting of their firms improve performance in either of these two markets.

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**Table 1. Delistings**

This table presents information on the parties that carried out the delistings, on contested delistings, and on CEOs for the full sample of 429 delistings and for the subsamples of Continental European and UK delistings. The variable *Large Shareholder* indicates a blockholder with more than 5% of the firm's voting rights; *Largest Shareholder* indicates the firm's shareholder with the most voting rights; *Other Large Shareholders* indicates large shareholders other than the largest one; *Controlling Shareholder* indicates the largest shareholder in the firm with more than 20% of the firm's voting rights; *Family Controlling Shareholder* is a dummy variable that takes the value one if the largest shareholder of the firm owns more than 20% of the voting rights and is either a family or is directly or indirectly controlled by a family at the 20% level, and zero otherwise; *Same Industry Buyer* takes the value one when the delisted firm and the firm that is carrying out the delisting operate in the same industry, and zero otherwise; *Multiple offers* denotes delistings where there was at least another takeover offer for the delisted firm; and *CEO Turnover (Same CEO)* is a dummy variable that takes the value one if the company changed (maintained) its pre-delisting CEO at the end of the first post-delisting year, and zero otherwise.

	<i>Full Sample</i>			<i>Continental Europe</i>			<i>UK</i>		
<i>Delisting carried out by:</i>									
Large Shareholder (>5%)	132	30.77%	429	100	0.440529	227	32	15.84%	202
Largest Shareholder	128	29.84%	429	98	43.17%	227	30	14.85%	202
Other Large Shareholders (>5%)	4	0.93%	429	2	0.88%	227	2	0.99%	202
Controlling Shareholder	118	27.51%	429	94	41.41%	227	24	11.88%	202
Other Large Shareholder < 20%	14	3.26%	429	6	2.64%	14	8	3.96%	202
Family Controlling Shareholder	67	15.62%	429	62	27.31%	227	5	2.48%	202
Same Industry buyer	133	47.00%	283	56	49.12%	114	77	45.56%	169
<i>Contested delistings:</i>									
Multiple Offers	18	4.20%	429	8	3.52%	227	10	4.95%	202
<i>CEO:</i>									
CEO Turnover	136	31.70%	429	85	37.44%	227	51	25.25%	202
Same CEO	293	68.30%	429	142	62.56%	227	151	74.75%	202

**Table 2. Descriptive statistics**

This table reports the means and medians of financial variables for the year before the delisting (Year -1), the year after (Year 1), and three years after (Year 3) for the full sample (Panel A) and for subsamples based on *Controlling Shareholder* (Panel B). A firm is considered delisted by its controlling shareholder if the acquirer has more than 20% of the voting rights before the going private transaction. The variable *Voting Rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction takes place; *Stock Performance* is the market-adjusted stock price performance in the period (-240, -41) before the announcement; *Total Assets* is the firm's total assets in millions of euros; *Tangible Assets* are all the firm's tangible assets such as buildings and machinery, scaled by total assets; *Leverage* is the ratio between total debt and total assets; *Cash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; and *ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year. All variables are winsorized at the 1% level and measured at the end of the year. We provide statistical significance of the tests for differences in means and medians between Year -1 and Year 1 and between Year -1 and Year 3 of a given sample/subsample. Here \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. All market and accounting variables are winsorized at the 1% level, and <sup>a</sup>, <sup>b</sup>, and <sup>c</sup>, denote statistical significance at the 1%, 5%, and 10% levels for the tests for differences in the means and medians between the subsamples in Panel B.

**PANEL A: Full Sample**

	Obs.	Year -1 Mean	Median	Obs.	Year 1 Mean	Median	Obs.	Year 3 Mean	Median
Voting Rights	429	38.200	29.400						
Stock Performance	385	0.053	0.040						
Total Assets	429	694.639	168.95	429	700.966	164.49	322	627.537	136.89
Tangible Assets	429	0.299	0.197	429	0.165 <sup>***</sup>	0.031 <sup>***</sup>	328	0.159 <sup>***</sup>	0.038 <sup>***</sup>
Leverage	429	0.192	0.120	429	0.288 <sup>***</sup>	0.221 <sup>***</sup>	347	0.313 <sup>***</sup>	0.257 <sup>***</sup>
Cash Reserves	429	0.105	0.052	429	0.060 <sup>***</sup>	0.012 <sup>***</sup>	288	0.077 <sup>***</sup>	0.023 <sup>***</sup>
ROA	429	0.048	0.050	429	0.013 <sup>***</sup>	0.000 <sup>***</sup>	361	0.016 <sup>***</sup>	0.003 <sup>***</sup>

**PANEL B: Delisted by Controlling Shareholders**

	Obs.	Year -1 Mean	Median	Obs.	Year 1 Mean	Median	Obs.	Year 3 Mean	Median
<b>Controlling Shareholders</b>									
Voting Rights	118	60.998 <sup>a</sup>	59.050 <sup>a</sup>						
Stock Performance	102	0.060	0.042						
Total Assets	118	925.685 <sup>c</sup>	207.847	118	945.719 <sup>c</sup>	182.869	84	883.358 <sup>b</sup>	202.877
Tangible Assets	118	0.290	0.234	118	0.202 <sup>**</sup> , <sup>b</sup>	0.115 <sup>***</sup> , <sup>a</sup>	89	0.200 <sup>**</sup> , <sup>b</sup>	0.103 <sup>***</sup> , <sup>a</sup>
Leverage	118	0.187	0.135	118	0.286 <sup>***</sup>	0.218 <sup>***</sup>	100	0.294 <sup>***</sup>	0.219 <sup>***</sup>
Cash Reserves	118	0.124	0.074 <sup>b</sup>	118	0.081 <sup>**</sup> , <sup>b</sup>	0.023 <sup>***</sup> , <sup>a</sup>	85	0.100 <sup>c</sup>	0.026 <sup>***</sup>
ROA	118	0.052	0.046	118	0.043 <sup>a</sup>	0.017 <sup>**</sup> , <sup>a</sup>	103	0.028 <sup>*</sup>	0.019 <sup>***</sup> , <sup>b</sup>
<b>Others</b>									
Voting Rights	311	29.550	20.800						
Stock Performance	283	0.050	0.040						
Total Assets	311	606.975	159.172	311	608.101	155.411	238	537.247	128.516 <sup>**</sup>
Tangible Assets	311	0.303	0.187	311	0.150 <sup>***</sup>	0.019 <sup>***</sup>	239	0.144 <sup>***</sup>	0.017 <sup>***</sup>
Leverage	311	0.194	0.119	311	0.289 <sup>***</sup>	0.224 <sup>***</sup>	247	0.321 <sup>***</sup>	0.266 <sup>***</sup>
Cash Reserves	311	0.098	0.044	311	0.052 <sup>***</sup>	0.009 <sup>***</sup>	203	0.068 <sup>***</sup>	0.021 <sup>***</sup>
ROA	311	0.046	0.050	311	0.001 <sup>***</sup>	0.000 <sup>***</sup>	258	0.010 <sup>***</sup>	0.000 <sup>***</sup>

**Table 3. CARs around the delisting announcement**

Panel A of this table presents the CARs in the event windows (-1, +1), (-30, +30), and (-30, -3) around the announcement of the going private transaction for the full sample and for subsamples based on *Controlling Shareholder*. The CARs are computed using a standard market model approach with local market indexes. Panel B reports estimates of ordinary least squares (OLS) regressions where the dependent variable is the firm's CAR in different event windows around the announcement of the going private transactions. The variable *Voting Rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction takes place; *Controlling Shareholder* is a dummy variable that takes the value one when the firm is taken private by the controlling shareholder, and zero otherwise;  $\ln(\text{Total Assets})$  is the natural logarithm of the firm's total assets; *Tangible Assets* is the ratio between tangible assets and total assets; *Leverage* is the ratio between total debt (short-term debt plus long-term debt) and total assets; *Cash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; *Ind. Adj. ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year minus the median industry performance; *Self-dealing* is a measure provided by Djankov *et al.* (2008) of the legal protection of minority shareholders; *UK* is a dummy variable that takes the value one for delistings of UK firms, and zero otherwise; and *Stock Performance* is the market-adjusted stock price performance in the event period (-240,-41) before the announcement. All variables are measured at the end of the year before the delisting and all are winsorized at the 1% level. All regression models include country and time fixed effects. Robust standard errors are shown in brackets. Here \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. In Panel A, <sup>a</sup>, <sup>b</sup>, and <sup>c</sup> denote statistical significance for the difference in the means between the two subsamples at the 1%, 5%, and 10% levels, respectively.

**Panel A: Event Study**

Event Windows	Obs.	Mean	Obs.	Mean
<b>Full Sample</b>				
(-1, +1)	429	9.60%***		
(-30, +30)	429	21.82%***		
(-30, -3)	429	8.03%***		
<b>Delisted by:</b>				
		<b>Controlling shareholders</b>		<b>Others</b>
(-1, +1)	118	8.35%***	311	10.07%***
(-30, +30)	118	16.02%*** <sup>b</sup>	311	24.02%***
(-30, -3)	118	2.73%*** <sup>c</sup>	311	10.05%***

**Panel B: Multivariate OLS Regressions**

	CAR (-1, +1)		CAR (-30, +30)		CAR (-30, -3)	
	I	II	III	IV	V	VI
Constant	0.4938 [0.4208]	0.6021 [0.4261]	1.1209 [0.8809]	1.2471* [0.6870]	0.6421 [0.4694]	0.6837 [0.4224]
Voting Rights	-0.0009** [0.0004]	-0.0011*** [0.0004]	-0.0017* [0.0009]	-0.0021** [0.0010]	-0.0013*** [0.0005]	-0.0017*** [0.0005]
Controlling Shareholder	0.0259 [0.0212]	0.0336 [0.0231]	-0.037 [0.0464]	-0.0279 [0.0471]	-0.0377* [0.0217]	-0.0407* [0.0235]
Ln(Total assets)	-0.0103** [0.0041]	-0.0122*** [0.0044]	-0.0127 [0.0094]	-0.0173* [0.0096]	-0.0003 [0.0051]	-0.0013 [0.0054]
Tangible Assets	-0.0407 [0.0270]	-0.0408 [0.0287]	-0.0213 [0.0515]	-0.0095 [0.0499]	0.0299 [0.0323]	0.0356 [0.0337]
Leverage	0.0395 [0.0345]	0.0461 [0.0358]	-0.1232* [0.0733]	-0.1094 [0.0714]	-0.1352*** [0.0401]	-0.1488*** [0.0428]
Cash Reserves	0.0213 [0.0757]	0.0433 [0.0832]	-0.0129 [0.1246]	0.0077 [0.1249]	-0.0343 [0.0666]	-0.0333 [0.0751]
Ind. Adj. ROA	-0.1668*** [0.0622]	-0.1532** [0.0659]	-0.4210*** [0.1441]	-0.3732*** [0.1417]	-0.0788 [0.0863]	-0.0561 [0.0839]
Self-dealing	-0.785 [1.5001]	-1.0801 [1.5183]	-0.8908 [3.1407]	-1.0629 [2.3883]	-0.653 [1.6669]	-0.6409 [1.4795]
UK	0.5397 [1.0159]	0.7412 [1.0285]	0.3844 [2.1303]	0.4792 [1.6180]	0.2451 [1.1287]	0.2145 [1.0001]
Stock performance		-0.0334** [0.0147]		-0.1969** [0.0914]		-0.0927** [0.0408]
Adj. R <sup>2</sup>	0.0814	0.1016	0.0947	0.2318	0.1165	0.2148
Observations	429	385	429	385	429	385

**Table 4. Changes in operating performance**

This table reports estimates of OLS regressions in which the dependent variables are  $\Delta ROA$ ,  $Adj. \Delta ROA1$ , and  $Adj. \Delta ROA2$ . Here  $\Delta ROA$  is computed as  $ROA_{t+1} - ROA_{t-1}$ ;  $ROA$  is computed as EBIT over total assets at the beginning of the year;  $Adj. \Delta ROA1$  is computed as  $\Delta ROA$  minus the median change in ROA in the firm's industry and country; and  $Adj. \Delta ROA2$  is computed as  $\Delta ROA$  minus the change in ROA for a matched firm in the firm's industry and country. We select matching firms on the basis of past performance and size. Panel A presents the results for the changes between Year -1 and Year 1. Panel B presents the results for the changes between Year -1 and Year 3. The variable *Voting rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction; the variable *Controlling Shareholder* is a dummy that takes the value one when the firm is taken private by the main shareholder, and zero otherwise;  $Ln(\text{Total Assets})$  is the natural logarithm of the firm's total assets; *Tangible Assets* is the ratio between tangible assets and total assets; *Leverage* is the ratio between total debt (short-term debt plus long-term debt) and total assets; *Cash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; *Ind. Adj. ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year minus the median industry performance *LTIR* is the year variation of long-term interest rates within the interval -1 and +1 with respect to the announcement date of the deal; and *UK* is a dummy variable that takes the value one for delistings of UK firms, and zero otherwise. All variables are measured at the end of the year before the delisting, and all are winsorized at the 1% level. All regression models include country and time fixed effects. Robust standard errors are shown in brackets. The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**PANEL A: Post-delisting operating performance and controlling shareholders**

	Change (-1, 1)			Change (-1, 3)		
	$\Delta ROA$	Adj. $\Delta ROA1$	Adj. $\Delta ROA2$	$\Delta ROA$	Adj. $\Delta ROA1$	Adj. $\Delta ROA2$
	I	II	III	IV	V	VI
Constant	0.1827** [0.0862]	0.3510*** [0.1124]	0.3863 [0.2444]	0.4291* [0.2436]	0.115 [0.2529]	-0.0465 [0.3160]
Voting Rights	0.0004 [0.0003]	0.0003 [0.0004]	0.0008 [0.0008]	-0.0003 [0.0003]	0 [0.0004]	0.0002 [0.0005]
Contr. Shar.	0.0095 [0.0153]	0.0350* [0.0196]	-0.002 [0.0429]	-0.0066 [0.0187]	-0.0136 [0.0213]	-0.0172 [0.0296]
Ln(Total Assets)	-0.0073** [0.0036]	-0.0052 [0.0043]	-0.006 [0.0084]	-0.0106** [0.0048]	-0.0079 [0.0054]	-0.0093 [0.0075]
Tangible Assets	-0.002 [0.0200]	-0.0002 [0.0246]	0.0496 [0.0396]	0.003 [0.0257]	0.0307 [0.0300]	0.0205 [0.0391]
Leverage	-0.032 [0.0260]	-0.0590** [0.0286]	-0.0878** [0.0433]	-0.0003 [0.0287]	-0.0093 [0.0313]	-0.0587 [0.0451]
Cash Reserves	0.0645 [0.0485]	0.058 [0.0542]	0.2514* [0.1347]	0.0917* [0.0533]	0.1544** [0.0773]	0.1793 [0.1117]
Ind. Adj. ROA	-0.5435*** [0.0514]	-0.7265*** [0.0682]	-0.4230*** [0.1608]	-0.5997*** [0.0601]	-0.8526*** [0.0708]	-0.4605*** [0.1119]
LTIR	-0.0661** [0.0297]	-0.0421 [0.0377]	-0.0755 [0.0877]	-0.0176 [0.0341]	-0.0168 [0.0406]	0.053 [0.0536]
UK	0.1034 [0.0656]	-0.1848** [0.0881]	-0.0325 [0.1903]	-0.2651* [0.1449]	0.0198 [0.0938]	-0.1765** [0.0737]
Adjusted R <sup>2</sup>	0.3349	0.3752	0.0617	0.3149	0.3739	0.0553
Observations	429	429	429	360	360	360

**PANEL B: Interaction**

	Change (-1, 1)			Change (-1, 3)		
	$\Delta$ ROA	Adj. $\Delta$ ROA1	Adj. $\Delta$ ROA2	$\Delta$ ROA	Adj. $\Delta$ ROA1	Adj. $\Delta$ ROA2
	I	II	III	IV	V	VI
Constant	0.1694** [0.0828]	0.3111*** [0.0994]	0.3476 [0.2302]	0.4315* [0.2442]	0.12 [0.2528]	-0.05 [0.3179]
Voting Rights	0.0003 [0.0003]	0.0002 [0.0004]	0.0008 [0.0008]	-0.0003 [0.0003]	0 [0.0004]	0.0002 [0.0005]
Controlling Shareholder	0.0104 [0.0154]	0.0377* [0.0199]	0.0005 [0.0433]	-0.0065 [0.0187]	-0.0134 [0.0213]	-0.0174 [0.0298]
Controlling Shar.*Adj. ROA	0.1282 [0.1513]	0.3857 [0.2507]	0.3737 [0.4811]	0.0334 [0.1384]	0.07 [0.1341]	-0.049 [0.2453]
Ln(Total Assets)	-0.0074** [0.0037]	-0.0055 [0.0043]	-0.0063 [0.0086]	-0.0106** [0.0048]	-0.0078 [0.0054]	-0.0094 [0.0075]
Tangible Assets	-0.0017 [0.0199]	0.0006 [0.0244]	0.0503 [0.0397]	0.0028 [0.0258]	0.0304 [0.0300]	0.0206 [0.0392]
Leverage	-0.0281 [0.0264]	-0.0472 [0.0293]	-0.0764* [0.0417]	0.0003 [0.0287]	-0.0082 [0.0311]	-0.0595 [0.0449]
Cash Reserves	0.0671 [0.0484]	0.0657 [0.0542]	0.2589* [0.1346]	0.0928* [0.0535]	0.1569** [0.0775]	0.1776 [0.1107]
ROA	-0.5675*** [0.0519]	-0.7989*** [0.0548]	-0.4932*** [0.1595]	-0.6066*** [0.0687]	-0.8671*** [0.0829]	-0.4503*** [0.1304]
LTIR	-0.0654** [0.0293]	-0.04 [0.0352]	-0.0735 [0.0858]	-0.0176 [0.0341]	-0.017 [0.0406]	0.0531 [0.0537]
UK	0.1134* [0.0677]	-0.1548* [0.0929]	-0.0034 [0.1977]	-0.2677* [0.1462]	0.0144 [0.0938]	-0.1727** [0.0771]
Adjusted R <sup>2</sup>	0.3357	0.389	0.0648	0.313	0.3724	0.0526
Observations	429	429	429	360	360	360

### Table 5. Family firms

This table reports the means and medians of financial variables for the year before the delisting (Year -1), the year after (Year 1), and three years after (Year 3) for subsamples based on delistings carried out by family controlling shareholders (*Family* delistings) and those carried out by others (*Non-Family* delistings). A firm is considered delisted by a family controlling shareholder if the largest shareholder of the firm owns more than 20% of the voting rights and is either a family or directly or indirectly controlled by a family at the 20% level. The variable *Voting rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction; *Stock Performance* is the market-adjusted stock price performance in the period (-240, -41) before the announcement; *Total assets* is the firm's total assets in millions of Euros; *Tangible Assets* are all the firm's tangible assets, such as buildings and machinery, scaled by total assets; *Leverage* is the ratio between total debt and total assets; *Cash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; and *ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year. CAR(-1, +1), CAR(-30,+30), and CAR(-30,-3) are CARs in the event windows (-1, +1), (-30, +30), and (-30, -3) around the announcement of the going private transaction computed using a market model. All variables are winsorized at the 1% level and measured at the end of the year before the delisting. We provide statistical significance of the tests for the differences in means and medians between Year -1 and Year 1 and between Year -1 and Year 3. Here \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. The symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup>, denote statistical significance at the 1%, 5%, and 10% levels for the tests for the differences in means and medians between the subsamples in Panels B and C.

	Obs.	Year -1 Mean	Median	Obs.	Year 1 Mean	Median	Obs.	Year 3 Mean	Median
<b>Family</b>									
Voting Rights	67	68.392 <sup>a</sup>	71.300 <sup>a</sup>						
Stock Performance	58	0.073	0.036						
Total Assets	67	1107.744 <sup>b</sup>	208.741	67	1155.269 <sup>a</sup>	231.551	48	1185.270 <sup>a</sup>	212.262
Tangible Assets	67	0.255	0.230	67	0.183 <sup>*</sup>	0.127 <sup>***,a</sup>	51	0.154 <sup>**</sup>	0.059 <sup>**</sup>
Leverage	67	0.194	0.121	67	0.303 <sup>**</sup>	0.224 <sup>**</sup>	56	0.300 <sup>**</sup>	0.190 <sup>**</sup>
Cash Reserves	67	0.136 <sup>c</sup>	0.084	67	0.082 <sup>**</sup>	0.026 <sup>***,b</sup>	48	0.090	0.028 <sup>**</sup>
ROA	67	0.045	0.032	67	0.035	0.016 <sup>b</sup>	57	0.026	0.014
CAR (-1, 1)	67	5.68% <sup>c</sup>	0.27% <sup>b</sup>						
CAR (-30, 30)	67	16.83%	10.31%						
CAR (-30, -3)	67	2.61% <sup>a</sup>	0.00%						
<b>Non-family</b>									
Voting Rights	362	32.612	24.050						
Stock Performance	327	0.049	0.040						
Total Assets	362	618.180	160.959	362	616.882	152.108	274	529.832	130.662 <sup>**</sup>
Tangible Assets	362	0.308	0.190	362	0.161 <sup>***</sup>	0.024 <sup>***</sup>	277	0.160 <sup>***</sup>	0.029 <sup>***</sup>
Leverage	362	0.192	0.120	362	0.286 <sup>***</sup>	0.216 <sup>***</sup>	291	0.315 <sup>***</sup>	0.260 <sup>***</sup>
Cash Reserves	362	0.099	0.049	362	0.056 <sup>***</sup>	0.011 <sup>***</sup>	240	0.075 <sup>**</sup>	0.021 <sup>***</sup>
ROA	362	0.048	0.050	362	0.008 <sup>***</sup>	0.000 <sup>***</sup>	304	0.014 <sup>***</sup>	0.002 <sup>***</sup>
CAR (-1, 1)	362	10.32%	3.93%						
CAR (-30, 30)	362	22.75%	14.74%						
CAR (-30, -3)	362	9.04%	2.55%						

**Table 6. Family firm delistings**

This table reports estimates of OLS regressions in which the dependent variables are  $\Delta ROA$ ,  $Adj. \Delta ROA1$ , and  $Adj. \Delta ROA2$ . The variable  $\Delta ROA$  is computed as  $ROA_{t+1} - ROA_{t-1}$ ;  $ROA$  is computed as EBIT over total assets at the beginning of the year;  $Adj. \Delta ROA1$  is computed as  $\Delta ROA$  minus the median change in  $ROA$  in the firm's industry and country; and  $Adj. \Delta ROA2$  is computed as  $\Delta ROA$  minus the change in  $ROA$  for a matched firm in the firm's industry and country. We select matching firms on the basis of past performance and size. The variable *Voting rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction; *Family Controlling Shareholder* is a dummy variable that takes the value one if the largest shareholder of the firm owns more than 20% of the voting rights and is either a family or directly or indirectly controlled by a family at the 20% level, and zero otherwise;  $Ln(\text{Total Assets})$  is the natural logarithm of the firm's total assets; *Leverage* is the ratio between total debt (short-term debt plus long-term debt) and total assets; *Tangible Assets* is the ratio between tangible assets and total assets; *ICash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; *nd. Adj. ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year minus the median industry performance; *LTIR* is the year variation of long-term interest rates within the interval -1 and +1 with respect to the announcement date of the deal; *UK* is a dummy variable that takes the value one for delistings of UK firms, and zero otherwise; and  $Ln(\text{Total Assets})$ , *Tangible Assets*, *Leverage*, *Cash Reserves*, and *Ind. Adj. ROA* are measured at the end of the year before the delisting. All variables are winsorized at the 1% level. All regression models include country and time fixed effects. Robust standard errors are shown in brackets. Here \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Change (-1, 1)			Change (-1, 3)		
	$\Delta ROA$	Adj. $\Delta ROA1$	Adj. $\Delta ROA2$	$\Delta ROA$	Adj. $\Delta ROA1$	Adj. $\Delta ROA2$
	I	II	III	IV	V	VI
Constant	0.1834** [0.0860]	0.3553*** [0.1178]	0.3819 [0.2448]	0.4242* [0.2447]	0.1051 [0.2549]	-0.059 [0.3171]
Voting Rights	0.0004 [0.0003]	0.0004 [0.0004]	0.0008 [0.0007]	-0.0004 [0.0003]	-0.0001 [0.0003]	0.0002 [0.0005]
Family Cont. Shar.	0.0092 [0.0172]	0.0317 [0.0228]	0.0046 [0.0327]	0.0017 [0.0175]	-0.0038 [0.0182]	-0.0297 [0.0303]
$Ln(\text{Total assets})$	-0.0073** [0.0037]	-0.0052 [0.0042]	-0.0061 [0.0084]	-0.0107** [0.0048]	-0.0081 [0.0053]	-0.0091 [0.0076]
Tangible Assets	-0.0016 [0.0199]	0.0016 [0.0248]	0.0489 [0.0398]	0.0018 [0.0257]	0.0288 [0.0299]	0.0199 [0.0389]
Leverage	-0.0327 [0.0260]	-0.0618** [0.0291]	-0.0873** [0.0435]	0.0007 [0.0286]	-0.0077 [0.0309]	-0.0579 [0.0451]
Cash Reserves	0.0651 [0.0484]	0.0606 [0.0542]	0.2500* [0.1366]	0.0895* [0.0533]	0.1514** [0.0765]	0.1802 [0.1119]
Ind. Adj. ROA	-0.5438*** [0.0513]	-0.7281*** [0.0682]	-0.4223*** [0.1596]	-0.5989*** [0.0600]	-0.8514*** [0.0708]	-0.4602*** [0.1119]
LTIR	-0.0676** [0.0293]	-0.0478 [0.0385]	-0.0748 [0.0867]	-0.0158 [0.0345]	-0.0136 [0.0406]	0.0553 [0.0534]
UK	0.1092* [0.0648]	-0.1647* [0.0872]	-0.03 [0.1834]	-0.2671* [0.1433]	0.016 [0.0961]	-0.1800** [0.0724]
Adjusted R <sup>2</sup>	0.3346	0.3725	0.0617	0.3147	0.3732	0.0561
Observations	429	429	429	360	360	360

### Table 7. Continental Europe and the UK

Panel A of this table presents the means and medians of financial variables for the year before the delisting (Year -1), the year after (Year 1), and three years after (Year 3) for subsamples based on the nationality of the delisted firm, namely, Continental Europe (plus Ireland) and the UK. Panel B presents estimates of OLS regressions in which the dependent variables are  $\Delta ROA$ ,  $Adj. \Delta ROA1$ , and  $Adj. \Delta ROA2$  for the Continental Europe and UK samples. The variable  $\Delta ROA$  is computed as  $ROA_{t+1} - ROA_{t-1}$ ;  $ROA$  is computed as EBIT over total assets at the beginning of the year;  $Adj. \Delta ROA1$  is computed as  $\Delta ROA$  minus the median change in  $ROA$  in the firm's industry and country; and  $Adj. \Delta ROA2$  is computed as  $\Delta ROA$  minus the change in  $ROA$  for a matched firm in the firm's industry and country. We select matching firms on the basis of past performance and size.

The variable *Voting Rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction takes place; *Stock Performance* is the market-adjusted stock price performance in the period (-240, -41) before the announcement; *Total Assets* is the firm's total assets in millions of Euros; *Tangible Assets* are all the firm's tangible assets, such as buildings and machinery, scaled by total assets; *Leverage* is the ratio between total debt and total assets; *Cash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; *ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year; *Ind. Adj. ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year minus the median industry performance; *LTIR* is the year variation of long-term interest rates within the interval -1 and +1 with respect to the announcement date of the deal;  $CAR(-1, +1)$ ,  $CAR(-30, +30)$ , and  $CAR(-30, -3)$  are CARs in the event windows (-1, +1), (-30, +30), and (-30, -3) around the announcement of the going private transaction computed using a market model. All variables are winsorized at the 1% level and measured at the end of the year before the delisting.

In Panel A, we provide statistical significance of the tests for differences in the means and medians between year -1 and year 1 and between year -1 and year 3. Here \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively. The symbols <sup>a</sup>, <sup>b</sup>, and <sup>c</sup>, denote statistical significance at the 1%, 5%, and 10% levels for the tests for differences in means and medians between subsamples.

In Panel B, all regression models include time fixed effects and regression models I to VI also include country fixed effects. Robust standard errors are shown in brackets. The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**PANEL A: Descriptive Statistics and CARs**

	Obs.	Year -1 Mean	Median	Obs.	Year 1 Mean	Median	Obs.	Year 3 Mean	Median
<b>Continental Europe</b>									
Voting Rights	227	0.542 <sup>a</sup>	0.510 <sup>a</sup>	227					
Stock Performance	203	0.137 <sup>a</sup>	0.087 <sup>c</sup>	203					
Total Assets	227	775.838	206.551 <sup>b</sup>	227	792.604	196.646 <sup>b</sup>	164	728.893	178.262 <sup>b</sup>
Tangible Assets	227	0.259 <sup>a</sup>	0.163 <sup>c</sup>	227	0.160***	0.062***, <sup>a</sup>	171	0.153***	0.057***, <sup>b</sup>
Leverage	227	0.227 <sup>a</sup>	0.153 <sup>c</sup>	227	0.292**	0.229***	188	0.322***	0.248***
Cash Reserves	227	0.092 <sup>c</sup>	0.044	227	0.060***	0.018***, <sup>a</sup>	165	0.075	0.029**
ROA	227	0.053	0.047	227	0.039 <sup>a</sup>	0.018***, <sup>a</sup>	205	0.044 <sup>a</sup>	0.018*** <sup>a</sup>
CAR (-1, 1)	227	7.69%***, <sup>a</sup>	0.58%***, <sup>a</sup>						
CAR (-30, 30)	227	19.54%***	12.48%***						
CAR (-30, -3)	227	5.89%***, <sup>b</sup>	1.64%***						
<b>UK</b>									
Voting Rights	202	22.212	17.550	202					
Stock Performance	182	-0.041	-0.012	182					
Total Assets	202	603.390	138.778	202	597.987	122.415	158	522.331	92.621**
Tangible Assets	202	0.344	0.236	202	0.170***	0.009***	157	0.166***	0.004***
Leverage	202	0.154	0.093	202	0.285***	0.211***	159	0.302***	0.260***
Cash Reserves	202	0.120	0.055	202	0.061***	0.006***	123	0.080**	0.019***
ROA	202	0.042	0.050	202	-0.017***	-0.001***	156	-0.022***	-0.001***
CAR (-1, 1)	202	11.97%***	6.32%***						
CAR (-30, 30)	202	24.39%***	15.43%***						
CAR (-30, -3)	202	10.61%***	2.14%***						

**Panel B: Post-Delisting Performance**

	<i>Continental Europe</i>						<i>UK</i>					
	Change (-1, 1)			Change (-1, 3)			Change (-1, 1)			Change (-1, 3)		
	ΔROA I	Adj. ΔROA1 II	Adj. ΔROA2 III	ΔROA IV	Adj. ΔROA1 V	Adj. ΔROA2 VI	ΔROA I	Adj. ΔROA1 II	Adj. ΔROA2 III	ΔROA IV	Adj. ΔROA1 V	Adj. ΔROA2 VI
Constant	0.3492 [0.3864]	-0.2497 [0.5027]	0.2807 [1.0657]	0.1138 [0.5325]	0.2118 [0.6261]	-0.6424 [0.5216]	0.0198 [0.0818]	-0.0545 [0.0822]	-0.3573* [0.1822]	-0.0547 [0.1450]	-0.1606 [0.1566]	-0.1923 [0.2186]
Voting Rights	0.0003 [0.0004]	0 [0.0005]	0.0003 [0.0009]	-0.0006* [0.0003]	-0.0005 [0.0004]	-0.0002 [0.0005]	0.0007 [0.0006]	0.0011* [0.0006]	0.0021 [0.0014]	0.0006 [0.0006]	0.0017** [0.0007]	0.0015 [0.0013]
Controlling Shareholder	0.0055 [0.0210]	0.0490* [0.0275]	0.0257 [0.0546]	0.0032 [0.0173]	-0.0001 [0.0206]	0.0082 [0.0300]	0.0204 [0.0224]	0.0096 [0.0236]	-0.0311 [0.0837]	-0.0183 [0.0479]	-0.0421 [0.0531]	-0.049 [0.0739]
Ln(Total assets)	-0.0118** [0.0049]	-0.0140** [0.0060]	-0.0248** [0.0111]	-0.018*** [0.0047]	-0.021*** [0.0055]	-0.020*** [0.0062]	-0.0037 [0.0063]	0.003 [0.0065]	0.0196 [0.0138]	-0.0024 [0.0109]	0.0048 [0.0124]	0.0033 [0.0163]
Tangible Assets	-0.0261 [0.0248]	-0.0213 [0.0349]	0.0063 [0.0503]	-0.0165 [0.0271]	-0.013 [0.0321]	-0.0454 [0.0439]	0.0112 [0.0303]	0.0049 [0.0337]	0.0693 [0.0630]	0.0181 [0.0438]	0.0534 [0.0524]	0.0723 [0.0657]
Leverage	-0.0442 [0.0334]	-0.0930** [0.0391]	-0.1041* [0.0566]	-0.0224 [0.0311]	-0.0371 [0.0346]	-0.0371 [0.0495]	0.0144 [0.0469]	0.0269 [0.0444]	-0.0446 [0.0914]	0.0768 [0.0643]	0.0849 [0.0737]	-0.0503 [0.1063]
Cash Reserves	0.0952 [0.0866]	0.1076 [0.0935]	0.1709 [0.1169]	0.0608 [0.0891]	0.2690** [0.1326]	0.2122 [0.1575]	0.0589 [0.0612]	0.0476 [0.0658]	0.3716* [0.2131]	0.1400** [0.0703]	0.0973 [0.0731]	0.1938 [0.1703]
Ind. Adj. ROA	-0.543*** [0.0774]	-0.732*** [0.1210]	-0.398* [0.2153]	-0.632*** [0.0833]	-0.859*** [0.0866]	-0.532*** [0.1314]	-0.544*** [0.0716]	-0.732*** [0.0668]	-0.476* [0.2459]	-0.569*** [0.0878]	-0.829*** [0.1077]	-0.351* [0.1846]
LTIR	-0.0155 [0.0755]	0.0485 [0.1062]	-0.0166 [0.2167]	0.0575 [0.0917]	-0.003 [0.1101]	0.1900** [0.0898]						
Adjusted R <sup>2</sup>	0.3671	0.3841	0.0808	0.45	0.5196	0.2074	0.2829	0.3821	0.0683	0.1746	0.268	-0.002
Observations	227	227	227	205	205	205	202	202	202	155	155	155

**Table 8. The role of CEOs**

This table reports estimates of OLS regressions in which the dependent variables are  $\Delta ROA$ ,  $Adj. \Delta ROA1$ , and  $Adj. \Delta ROA2$ . The variable  $\Delta ROA$  is computed as  $ROA_{t+1} - ROA_{t-1}$ ;  $ROA$  is computed as EBIT over total assets at the beginning of the year;  $Adj. \Delta ROA1$  is computed as  $\Delta ROA$  minus the median change in  $ROA$  in the firm's industry and country; and  $Adj. \Delta ROA2$  is computed as  $\Delta ROA$  minus the change in  $ROA$  for a matched firm in the firm's industry and country. We select matching firms on the basis of past performance and size. The variable *Voting Rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction takes place; the variable *Same CEO* is a dummy that takes the value one if the delisted firms has the same CEO in Year -1 and Year 1, and zero otherwise;  $Ln(\text{Total assets})$  is the natural logarithm of the firm's total assets; *Tangible Assets* is the ratio between tangible assets and total assets; *Leverage* is the ratio between total debt (short-term debt plus long-term debt) and total assets; *Cash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; *Ind. Adj. ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year minus the median industry performance; *LTIR* is the year variation of long-term interest rates within the interval -1 and +1 with respect to the announcement date of the deal; *UK* is a dummy variable that takes the value one for delistings of UK firms, and zero otherwise; and  $Ln(\text{Total Assets})$ , *Tangible Assets*, *Leverage*, *Cash Reserves*, and *Ind. Adj. ROA* are measured at the end of the year before the delisting. All variables are winsorized at the 1% level. All regression models include time fixed effects. Robust standard errors are shown in brackets. Here \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Change (-1, 1)			Change (-1, 3)		
	$\Delta ROA$	Adj. $\Delta ROA1$	Adj. $\Delta ROA2$	$\Delta ROA$	Adj. $\Delta ROA1$	Adj. $\Delta ROA2$
	I	II	III	IV	V	VI
Constant	0.1696* [0.0909]	0.3289*** [0.1199]	0.3148 [0.2495]	0.3949 [0.2505]	0.0657 [0.2616]	-0.1224 [0.3222]
Voting Rights	0.0004 [0.0003]	0.0005 [0.0003]	0.0007 [0.0006]	-0.0004 [0.0003]	-0.0001 [0.0003]	0 [0.0005]
Same CEO	0.0132 [0.0136]	0.0312** [0.0158]	0.0470* [0.0271]	0.0151 [0.0163]	0.0203 [0.0188]	0.0326 [0.0249]
Ln(Total assets)	-0.0069* [0.0037]	-0.0042 [0.0043]	-0.0051 [0.0085]	-0.0103** [0.0049]	-0.0075 [0.0055]	-0.0086 [0.0075]
Tangible Assets	-0.0008 [0.0198]	0.0043 [0.0245]	0.049 [0.0395]	0.0012 [0.0258]	0.0276 [0.0298]	0.0163 [0.0390]
Leverage	-0.0335 [0.0263]	-0.0642** [0.0296]	-0.0883** [0.0442]	0.0003 [0.0287]	-0.0079 [0.0309]	-0.057 [0.0451]
Cash Reserves	0.0669 [0.0483]	0.0668 [0.0543]	0.2512* [0.1352]	0.0897* [0.0528]	0.1505** [0.0759]	0.1742 [0.1118]
Ind. Adj. ROA	-0.5445*** [0.0511]	-0.7305*** [0.0675]	-0.4217*** [0.1580]	-0.6014*** [0.0599]	-0.8544*** [0.0707]	-0.4639*** [0.1111]
LTIR	-0.0664** [0.0295]	-0.0454 [0.0385]	-0.0682 [0.0872]	-0.0142 [0.0346]	-0.0111 [0.0406]	0.0609 [0.0536]
UK	0.1034 [0.0655]	-0.1841** [0.0883]	-0.0349 [0.1907]	-0.2647* [0.1427]	0.0189 [0.0973]	-0.1765** [0.0687]
Adjusted R <sup>2</sup>	0.3361	0.3766	0.0676	0.3167	0.3756	0.0591
Observations	429	429	429	360	360	360

### Table 9. Sample selection and changes in operating performance

This table reports estimates of Heckman two-stage regression models in which the dependent variables in the second stage are  $\Delta ROA$ ,  $Adj. \Delta ROA1$ , and  $Adj. \Delta ROA2$ . Here  $\Delta ROA$  is computed as  $ROA_{t+1} - ROA_{t-1}$ ;  $ROA$  is computed as EBIT over total assets at the beginning of the year;  $Adj. \Delta ROA1$  is computed as  $\Delta ROA$  minus the median change in  $ROA$  in the firm's industry and country; and  $Adj. \Delta ROA2$  is computed as  $\Delta ROA$  minus the change in  $ROA$  for a matched firm in the firm's industry and country. We select matching firms on the basis of past performance and size. Panel A presents the results for the second-stage model, where the dependent variable is the change between Year -1 and Year 1. Panel B presents the results for the second-stage model where the dependent variable is the change between Year -1 and Year 3. In both panels, the selection model (not reported) includes as variables the dummy for family control; an LBO dummy that takes the value one if the deal is carried out in the form of an LBO, and zero otherwise; the controlling shareholder dummy; the log of total assets; cash reserves; tangible assets; leverage;  $ROA$ ; self-dealing; and the long-term interest rate. The variable *Voting Rights* is the fraction of a company's voting rights controlled by the largest shareholder before the going private transaction takes place; *Controlling Shareholder* is a dummy variable that takes the value one when the firm is taken private by the controlling shareholder, and zero otherwise;  $Ln(Total Assets)$  is the natural logarithm of the firm's total assets; *Tangible Assets* is the ratio between tangible assets and total assets; *Leverage* is the ratio between total debt (short-term debt plus long-term debt) and total assets; *Cash Reserves* is defined as the amount of cash in the bank and in the hands of the company, scaled by total assets; *Ind. Adj. ROA* is the firm's return on assets computed as EBIT over the firm's total assets at the end of the previous year minus the median industry performance; *LTIR* is the year variation of long-term interest rates within the interval -1 and +1 with respect to the announcement date of the deal; *UK* is a dummy variable that takes the value one for delistings of UK firms, and zero otherwise; *Lambda* is the inverse Mills ratio; and  $Ln(Total assets)$ , *Tangible Assets*, *Leverage*, *Cash Reserves*, and *Ind. Adj. ROA* are measured at the end of the year before the delisting. All variables are winsorized at the 1% level. All regression models include time fixed effects. Robust standard errors are shown in brackets. Here \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% levels, respectively.

**Panel A: Second-Stage Results—Changes between Year -1 and Year 1**

	ΔROA		Adj. ΔROA1		Adj. ΔROA2	
	I	II	III	IV	V	VI
Constant	0.3226 [0.6032]	0.3247 [0.6073]	0.3702** [0.1714]	0.3794** [0.1741]	0.6782 [1.2585]	0.6717 [1.2464]
Voting Rights	0.0004 [0.0011]	0.0004 [0.0011]	0.0003 [0.0003]	0.0004 [0.0003]	0.001 [0.0024]	0.0009 [0.0023]
Controlling Shareholder	0.001 [0.0598]		0.0338* [0.0182]		-0.0198 [0.1248]	
Family Cont. Shar.		-0.0011 [0.0761]		0.0299 [0.0229]		-0.0165 [0.1563]
Ln(Total Assets)	-0.0063 [0.0162]	-0.0063 [0.0163]	-0.0051 [0.0042]	-0.005 [0.0043]	-0.0039 [0.0338]	-0.0039 [0.0335]
Tangible Assets	0.0072 [0.0976]	0.0075 [0.0981]	0.0011 [0.0252]	0.0031 [0.0259]	0.0688 [0.2037]	0.0674 [0.2013]
Leverage	-0.0522 [0.1331]	-0.0525 [0.1335]	-0.0618* [0.0338]	-0.0652* [0.0349]	-0.1299 [0.2776]	-0.1278 [0.2741]
Cash Reserves	0.0758 [0.1945]	0.0763 [0.1955]	0.0596 [0.0506]	0.0625 [0.0521]	0.2749 [0.4058]	0.273 [0.4013]
Ind. Adj. ROA	-0.4402** [0.2208]	-0.4399** [0.2223]	-0.7123*** [0.0614]	-0.7103*** [0.0625]	-0.2076 [0.4607]	-0.2089 [0.4562]
LTIR	-0.046 [0.1030]	-0.0462 [0.1031]	-0.0393 [0.0306]	-0.0441 [0.0307]	-0.0336 [0.2150]	-0.0308 [0.2116]
UK	0.2029 [0.5208]	0.2029 [0.5240]	-0.1712 [0.1522]	-0.1486 [0.1537]	0.1751 [1.0867]	0.1622 [1.0755]
Mills' Lambda	-0.6046 [0.8153]	-0.608 [0.8200]	-0.0831 [0.2190]	-0.1039 [0.2241]	-1.2615 [1.7012]	-1.2477 [1.6830]
Observations	625	625	625	625	625	625

**Panel B: Second-Stage Results—Changes between Year -1 and Year 3**

	ΔROA		Adj. ΔROA1		Adj. ΔROA2	
	I	II	III	IV	V	VI
Constant	0.7769 [0.6314]	0.7691 [0.5991]	0.5527 [0.4147]	0.5464 [0.3560]	0.6687 [0.5228]	0.656 [0.5258]
Voting Rights	0.0002 [0.0008]	0.0003 [0.0008]	0.0003 [0.0005]	0.0005 [0.0004]	0.0009 [0.0007]	0.0009 [0.0007]
Controlling Shareholder	0.0113 [0.0437]		0.0277 [0.0287]		-0.0076 [0.0389]	
Family Cont. Shar.		0.0025 [0.0520]		0.0154 [0.0309]		-0.0147 [0.0486]
Ln(Total Assets)	-0.0184 [0.0166]	-0.0178 [0.0157]	-0.0125 [0.0109]	-0.0116 [0.0093]	-0.0066 [0.0133]	-0.0064 [0.0133]
Tangible Assets	0.0253 [0.0741]	0.0258 [0.0700]	0.032 [0.0486]	0.0332 [0.0416]	0.0668 [0.0584]	0.0663 [0.0585]
Leverage	-0.0725 [0.0910]	-0.0729 [0.0860]	-0.09 [0.0598]	-0.0912* [0.0511]	-0.1119 [0.0708]	-0.1114 [0.0708]
Cash Reserves	0.0166 [0.1503]	0.0214 [0.1417]	0.0341 [0.0987]	0.0426 [0.0842]	0.3156*** [0.1193]	0.3170*** [0.1190]
Adj. ROA	-0.4727*** [0.1345]	-0.4747*** [0.1270]	-0.6727*** [0.0883]	-0.6765*** [0.0754]	-0.3274*** [0.1113]	-0.3276*** [0.1112]
LTIR	-0.1182 [0.0935]	-0.1189 [0.0884]	-0.0867 [0.0614]	-0.0892* [0.0525]	-0.1323* [0.0800]	-0.1308 [0.0801]
UK	0.0281 [0.1569]	0.0222 [0.1474]	-0.0114 [0.1030]	-0.0226 [0.0876]	-0.1109 [0.1285]	-0.1116 [0.1276]
Mills' Lambda	-0.3538 [0.5805]	-0.3343 [0.5479]	-0.2324 [0.3813]	-0.1986 [0.3255]	0.037 [0.4822]	0.0435 [0.4813]
Observations	429	429	429	429	429	429

## Appendix A. Correlation matrix

This table present the correlation matrix for the variables used in the paper. We refer to the previous tables for the definitions of the variables.

	$\Delta ROA (-1, 3)$	Adj. $\Delta ROA1 (-1, 1)$	Adj. $\Delta ROA2 (-1, 1)$	$\Delta ROA (-1, 3)$	Adj. $\Delta ROA1 (-1, 3)$	Adj. $\Delta ROA2 (-1, 3)$	Voting Rights	Controlling Shareholders	Ln(Total Assets)	Leverage	Cash Holdings	ROA	Ind. Adj. ROA	Tangible Assets	CEO Turnover	Family	CAR (-1, 1)	CAR (-30, -3)	CAR (-30, 30)
$\Delta ROA (-1, 3)$	1																		
Adj. $\Delta ROA1 (-1, 1)$	0.852*	1																	
Adj. $\Delta ROA2 (-1, 1)$	0.449*	0.520*	1																
$\Delta ROA (-1, 3)$	0.581*	0.490*	0.285*	1															
Adj. $\Delta ROA1 (-1, 3)$	0.488*	0.548*	0.211*	0.852*	1														
Adj. $\Delta ROA2 (-1, 3)$	0.299*	0.312*	0.432*	0.660*	0.644*	1													
Voting Rights	0.123*	0.102*	0.028	0.056	0.057	0.040	1												
Controlling Shareholders	0.113*	0.135*	0.045	0.056	0.021	-0.004	0.514*	1											
Ln(Total Assets)	-	-	-	-	-	-	0.038	0.083*	1										
Leverage	0.011	-0.017	-0.044	0.054	0.037	-0.051	0.040	-0.005	0.145*	1									
Cash Holdings	0.071	0.045	0.128*	0.04	0.069	0.125*	0.028	0.010	0.236*	0.243*	1								
ROA	-	-	-	-	-	-	0.041	0.024	0.170*	-0.013	0.152*	1							
Ind. Adj. ROA	-	-	-	-	-	-	-0.018	-0.025	0.086	0.097*	0.026	0.838*	1						
Tangible Assets	0.119*	0.115*	-0.038	-0.076	-0.065	-0.066	-0.070	-0.009	0.113*	0.299*	0.287*	0.140*	0.124*	1					
Stock Performance	-0.047	-0.003	-0.090	-0.026	0.014	-0.081	0.066	0.025	0.068	0.091*	0.084*	0.164*	0.034	0.068	1				
Family	0.077	0.094	0.008	0.052	0.026	-0.012	0.476*	0.730*	0.074*	0.008	0.031	0.000	-0.031	0.046	0.025	1			
CAR (-1, 1)	0.005	0.008	0.044	0.022	0.033	0.061	0.143*	-0.030	0.124*	-0.047	0.186*	0.097*	0.149*	0.061	0.219*	0.052	1		
CAR (-30, -3)	-0.001	0.016	0.031	0.007	-0.022	0.071	0.191*	-0.020	-0.004	0.125*	-0.021	-0.031	-0.025	0.035	0.001	0.015	0.016	1	
CAR (-30, 30)	0.067	0.088	0.079	0.051	0.068	0.126*	0.116*	-0.020	-0.015	0.113*	-0.007	0.132*	0.162*	0.042	-0.024	0.014	0.086*	0.996*	1

## APPENDIX B. Algorithm to select matching firm

The third measure of operating performance, *Adj.  $\Delta ROA_2$* , follows Barber and Lyon (1996). For each delisted company, we select its matching company in the year immediately prior to the acquisition announcement on the basis of the two-digit SIC code, country, size, and pre-delisting operating performance to filter out the effects of industry- and country-wide factors. To select matching firms, we follow this algorithm:

1) Identify all the firms in the same industry as the delisted company.

2) Select all the companies with size, measured as the book value of total assets, in the 70–130% range with respect to acquirer size. Then choose the firm whose ROA is the closest to the delisted firm's ROA.

3) If 2) fails, we expand the range to the entire industry and choose the firm whose ROA is the closest to the delisted firm's ROA.

4) If 3) fails, we expand the search to the entire country and choose the firm whose ROA is the closest to the delisted firm's ROA.

We track each control firm for three years after the completion of the delisting. If a matching firm does not have three years of data, we repeat the algorithm to select another matching company to complete the three-year time series. The measure *Adj.  $\Delta ROA_2$*  is then computed as the difference between the delisted firm  $\Delta ROA$  and the control firm  $\Delta ROA$ .