Private Equity Investors as Corporate Governance Mechanism in Continental Europe

This version: January 2009

Ann-Kristin Achleitner[a], André Betzer[b] and Bastian Hinterramskogler[a*]

[a] *Center for Entrepreneurial and Financial Studies (CEFS) and KfW Endowed Chair in Entrepreneurial Finance, Technische Universität München, TUM Business School*
[b] *University of Bonn, Department of Economics / BWL1*

ABSTRACT

This paper investigates the strategy of private equity investors to take public companies private in blockholder-based economies. Drawing on a unique dataset, we provide strong evidence that private equity investors buy companies in order to mitigate potential agency problems and hence to improve the corporate governance. Firms with relatively low or high managerial ownership, high debt capacity and a combination of strong free cash flows and low growth opportunities are more likely to become a private equity target. With regard to the particular continental European ownership structure, the going private companies have larger blockholders and a higher ownership concentration than their publicly remaining counterparts. Hence, the gaining of irrevocable commitments seems to be more important to private equity investors than monitoring and private benefits considerations.

JEL Classification: G34

Keywords: Private equity, going private, continental Europe, ownership

[*] Corresponding author: Bastian Hinterramskogler, Technische Universität München, TUM Business School, KfW Endowed Chair in Entrepreneurial Finance, Arcisstr. 21, 80333 München, Germany. Phone: +49 (0)89 289 25181, Fax: +49 (0)89 289 25188, Email: bastian.hinterramskogler@wi.tum.de. Part of this work was written while Bastian Hinterramskogler was a visiting scholar at the Said Business School, University of Oxford. Financial support from the European Corporate Governance Training Network (ECGTN) and the German Academic Exchange Service (DAAD) is gratefully acknowledged.

1 INTRODUCTION

With a substantial time lag compared to the US market, private equity funds have become prominent players on continental European public equity markets. Usually, they take full control of listed companies and take them private as they intend to implement a different form of governance beyond the scrutinizing public eye (Jenkinson, 2007).

The business model of private equity investors aims at increasing the value of target companies through financial, governance and operational engineering (Kaplan and Strömberg, 2008). More precisely, private equity investors restructure companies that exhibit a suboptimal capital structure, feature misaligned incentives of managers and shareholders, are badly governed by supervisors and/or outside monitors and exhibit inefficient operations and/or a suboptimal strategic positioning.

Empirical studies on the expected shareholder gains for the Anglo-Saxon markets imply that private equity investors do indeed create value after the buyout. They pay takeover premiums to the target shareholders in the range of 33% to 56% (DeAngelo *et al.*, 1984; Lehn and Poulsen, 1989; Renneboog *et al.*, 2007; amongst others). Due to these large wealth gains induced by private equity funds, it seems to be a profitable investment strategy to identify characteristics of target firms and to buy shares in these companies. Therefore a strand of the literature investigates the rationales of private equity funds in their decision to invest in public companies. Findings for the Anglo-Saxon capital markets support the notion of private equity funds as control agents. Firms are more likely to go private if they (1) have large free cash flows and low growth opportunities (Lehn and Poulsen, 1989; Opler and Titman, 1993), (2) face misaligned incentives of managers and stockholders (Halpern *et al.*, 1999), (3) underperform at the stock market (Halpern *et al.*, 1999), (4) exhibit a high potential for increased debt tax

shields (Halpern *et al.*, 1999; Kieschnick, 1998), and (5) are characterized by high institutional ownership (Weir *et al.*, 2005).

So far, there exists no empirical study for continental Europe that analyzes the motives underlying the investment decision of private equity funds. Renneboog *et al.* (2007) state explicitly: 'Hardly anything is known about the LBO [defined as going private] market in continental Europe'. Based on this lack of research, there are three essential reasons which motivate us to take a closer look at the continental European going private decision: *first*, private equity investors' motives to take a continental European firm private are likely to deviate from those of Anglo-Saxon transactions, as the Continent is characterized by a distinct corporate governance setting. *Second* and remarkably, the going private volume in continental Europe, unlike in the Anglo-Saxon markets, seems not to have been slowed down by the recent credit market turmoil and is still expected to grow. *Third*, there is an active policy debate in Europe about regulations concerning the private equity industry, for which an understanding of their investment behaviour is crucial. We elaborate on all three points below:

First, with regard to the corporate governance setting, an analysis focusing on the continental European market is required because, compared to the Anglo-Saxon markets, the Continent exhibits a different ownership structure (Faccio and Lang, 2002), weaker minority shareholder protection (La Porta *et al.*, 1999) and a less developed market for corporate control (Franks and Mayer, 2001).

The most important difference lies in the composition of the ownership structure. Most publicly traded companies in the US and the UK tend to be widely held, whereas the shareholder structure of most continental European companies exhibits a large, dominant shareholder (typically family controlled) who exerts considerable control (Andres, 2008; Faccio and Lang, 2002). Due to their large stake, these investors both have the power and the incentives to monitor management. However, concentrated

ownership can also confer potential drawbacks. Large shareholders can use their control rights in order to maximize their own utility which might, through the extraction of private benefits, come at the expense of the remaining shareholders. In line with these arguments, Bebchuk (1999) shows in a theoretical model that in corporate governance systems such as those in continental Europe, where private benefits of control are significant, the ownership structure is characterized by larger blockholders who extract those private benefits. These arguments lead us to test the hypothesis whether private equity investors avoid companies, whose controlling shareholder potentially extracts private benefits of control and hence demands a premium on the market price of its controlling stake. Additionally, the market for corporate control is less developed and active in continental Europe (Franks and Mayer, 2001) and the protection of minority shareholders by binding corporate governance standards is hardly present (La Porta *et al.*, 1999). These latter two empirical facts imply that continental European firms with a less concentrated ownership structure will suffer more agency problems between management and shareholders than their Anglo-Saxon counterparts. Their (dispersed) shareholders can neither rely on a disciplining corporate control market nor obtain relevant information based on a good corporate governance regime. This rationale leads us to test the hypothesis that private equity investors target companies which suffer agency costs originating from the shareholder-management conflict in continental Europe.

Second, with regard to the market development, a study of continental Europe seems called for due to the following dynamics. The last global buyout wave was driven particularly by the increase of going private buyouts. Kaplan and Strömberg (2008) show that from 2005 until July 2007, going private buyouts contributed 34.5% to the

stunning overall buyout volume of $1.6 trillion[1], labelling them the premier deal type. While the amount of buyouts, and in particular of large going private deals, has sharply declined with the credit markets turning sour, remarkably, the going private activity in continental Europe has resisted this trend. From July 2007 to October 2008, private equity investors have successfully delisted 11 continental European firms and are currently in the process of acquiring 8 additional companies[2] while rumours about further transactions continue to circulate. Interestingly, the completed 11 going privates include no small transactions, but range from medium-sized deals such as Barclays Private Equity's €104 million buyout of the German IT wholesaler Computerlinks to large deals such as Candover's €1,500 million deal of the Dutch industrial group Stork NV.

Anecdotal evidence suggests that there is clearly still more appetite for continental European firms. In a recent article, a managing director of a private equity fund explicitly stated that they will pursue more targets in Germany - continental Europe's biggest economy - than in the past (Cowie, 2008). According to the practitioners, there are two reasons, in particular, why the importance of going private buyouts in continental Europe is likely to increase in the future. *First,* the general partners of the private equity firms have raised huge funds. As a significant part of their compensation fee is linked to the profits from investments, they are not likely to return the capital to the investors (Kaplan and Strömberg, 2008) but will be looking for promising investments. *Second,* and related to the first point, the practitioners stress that public continental European firms offer great potential at reasonable prices. Within the current economic downturn, public markets are characterized by relatively low valuation levels[3] and this seems to hold particularly for the less developed continental European markets.

[1] They measure the buyout volume in terms of enterprise value.
[2] I.e. have built substantial stakes and/or announced a public bid to the shareholders.
[3] From a historical point of view.

As a leading investment banker exemplifies for the German market (Cowie, 2008): *'Public-to-private deals are always more attractive in a bear market but the market valuation of German companies is further from their intrinsic value than in some markets. The average weekly price-to-earnings ratio [p/e] for companies in the MDax - the index of German mid-cap companies - stands at 14.2, the lowest point since March 2001. By comparison, the average weekly p/e ratio for companies in the FTSE 250 index of UK mid-sized companies is 26.9'.*

Third, with regard to the ongoing policy debate, opinions of European politicians about the extent to which the private equity sector is to be regulated still vary markedly. In essence, the discrepancy arises from the central question whether private equity investors predominantly create real economic value or exploit corporate stakeholders.[4] This question is clearly too ambitious for this piece of work due to the lack of private data. Nevertheless, the study will help to draw initial conclusions about the intent and social desirability of private equity activism in continental Europe.

The three reasons outlined above, i.e. the distinct corporate governance setting, the market development and the ongoing debate on the regulation, clearly underline the need for a detailed first examination of continental European going private activity.

We contribute to the private equity literature in the following ways: (1) Using a unique data set, this is the first empirical study that systematically investigates going private buyouts outside Anglo-Saxon countries. (2) Due to the distinct characteristics of the continental European markets, we are able to analyse the control agent role of private equity investors in a corporate governance setting different from Anglo-Saxon countries. In this context, we are able to design an empirical test which allows us to differentiate three competing hypotheses: (a) the monitoring, (b) the private benefits and (c) the irrevocable commitments hypotheses. (3) Unlike previous studies on going

[4] E.g. shareholders, debtholders, employees or the state as tax authority.

private transactions, we clearly distinguish between the tax and the disciplining advantage of leverage.

Against the background of weak corporate governance standards in continental Europe compared to the Anglo-Saxon countries, our logistic regressions provide strong evidence that firm-specific corporate governance reasons play an important role in the investment decision of private equity managers in continental European markets. The empirical findings show that the likelihood of a private equity investment decreases (increases) with the degree of low (high) managerial ownership. Hence, we can infer that private equity investors (1) establish sharp incentives for management by giving them substantial equity upside through stock options at low levels of managerial ownership and (2) prevent managers from value-destroying behaviour at high levels of managerial ownership. Furthermore, the probability of a going private transaction increases with the level of free cash flow combined with low growth opportunities. This indicates that private equity investors discipline management by increasing leverage because this lowers the ability of management to waste free cash flows.

With regard to the particular ownership structure in continental Europe, we find evidence that private equity investors prefer companies with large blockholders, as their presence offers the potential of creating so called 'irrevocable commitments'. These commitments are privately negotiated and legally binding undertakings by large target blockholders to accept the subsequent public offer by the private equity investor (Berwin, 2007). This manoeuvre helps the private equity investor both to increase the success probability of the transaction and to deter rival bidders from extracting future rents through competitive auctions (Wright *et al.*, 2007). Lastly, we find some evidence of a potential redistribution of wealth from the government to private equity investors as the latter target companies with a combination of high tax payments and high debt capacity.

The paper proceeds as follows. In section 2 we review the related theoretical and empirical literature, derive the hypotheses and define the key variables of interest. Section 3 outlines the logit methodology, the sampling process and the construction of the data set. The empirical results and their interpretations are presented in section 4. Finally, the last section summarizes and concludes.

2 LITERATURE REVIEW AND HYPOTHESES

This section reviews academic studies that investigate the motives of a private equity investor to take a public company private and subsequently develops testable hypotheses. We differentiate between traditional hypotheses that have been highlighted in previous work for the Anglo-Saxon markets and three further hypotheses that directly originate from the blockholder-specific governance system of continental Europe.

2.1 Traditional arguments

According to the literature, inadequate incentivisation of managers, suboptimal capital structures as well as risk and valuation levels motivate private equity investors to take public companies private.

2.1.1 Management holding incentives

Jensen and Meckling's (1976) seminal paper describes the potential conflicts between owners and managers in large corporations due to the separation of ownership and control. The interests of both parties are not perfectly aligned as the owners want to increase their shareholders' wealth whereas the managers want to maximise their personal utility. In this context, Halpern *et al.* (1999) find empirical evidence that going private transactions are more likely for companies that exhibit either relatively low or relatively high managerial ownership for the following reasons:

Low managerial shareholdings cause managerial decisions to be based on distorted incentives because most of the benefits of acting in the best interest of shareholders are not received by them but by outside stockholders. Therefore, private equity firms require management teams to invest a substantial amount of their private wealth in the company through stocks and options. This results in a sharp incentive

structure as managers now face both a substantial equity up- but also downside (Kaplan and Strömberg, 2008).

H1 (management): Private equity firms invest in companies that exhibit relatively low managerial ownership.

However, relatively high managerial ownership can also be harmful to outside shareholders. Managers, who have invested a large share of their personal wealth in the company, do care about their unsystematic risk exposure at the detriment of outside shareholders (Halpern *et al.*, 1999; May, 1995).[5] Empirical studies investigating the relationship between managerial stockholdings and firm performance document a negative effect of relatively high managerial ownership on shareholder value. Among those studies are Morck *et al.* (1988) and McConnell and Servaes (1990) for the US and Short and Keasey (1999) and Weir *et al.* (2002) for the UK. We therefore control for a possible nonlinear relationship by including a squared term.

H2 (management2): Private equity firms invest in companies that exhibit relatively high managerial ownership.

Based on our data on blockholdings, we only employ managerial shareholdings in excess of 5% in our analysis because of data limitations.[6] The expected coefficient of the variable *Management* is negative while the coefficient of $Management^2$ is expected to be positive.

[5] I.e. managers engage in suboptimal diversifying investments at the cost of their shareholders.
[6] C.p. section 3.5.

2.1.2 Leverage

According to the seminal work of Modigliani and Miller (1958), capital structure decisions are irrelevant for the value of the firm when perfect capital markets are assumed. However, if some of their assumptions are relaxed, leverage might have a positive impact on firm value. One potential advantage of a highly leveraged capital structure is its debt tax shield which benefits the interests of the shareholders. Furthermore, more debt financing commits the management to pay out cash flows to investors and thus prevents managers from wasting resources on negative net present value projects.[7] These are the fundamental arguments explaining the high debt ratios of 60% to 90% encountered in private equity deals over the period 1997 to 2007. We shall elaborate on both points below.

Tax benefit of leverage:

In continental Europe, as in the US and the UK, interest payments lower the tax base of companies. Under the assumption that the firm is in a positive tax bracket, Modigliani and Miller (1963) show that a rise in leverage will increase shareholder value. Therefore, private equity investors increase leverage to profit from higher tax shields. *Thus, we expect private equity targets to have low leverage ratios and high levels of tax liabilities.* With regard to the former, Halpern *et al.* (1999) and Weir *et al.* (2008) provide limited evidence that going private targets in the US and UK exhibit lower debt ratios than non-targets.[8] With regard to the latter, empirical results are mixed. On the one hand, Lehn and Poulsen (1989), Kieschnick (1998) and Weir *et al.* (2005) found no significant influence of tax liabilities on the likelihood of going private. On the other hand, Lowenstein (1985) and Kaplan (1989) identified tax liabilities as one

[7] These advantages come at the cost of higher bankruptcy risk.
[8] Halpern et al. (1999) show that this hypothesis only holds for companies with low managerial ownership. However, as we control in our regressions for the size of the management stake, our prediction about leverage should be unaltered.

of the most important explanations for the going private decision which was confirmed empirically by Halpern *et al.* (1999).

H3 (tax benefit of leverage): The likelihood of a private equity investment is higher for companies with simultaneous low leverage ratios and high tax liabilities.

In the style of Axelson *et al.* (2007), we define the variable *leverage* as the book value of total debt divided by the enterprise value. We expect a negative coefficient. Following Lehn and Poulsen (1989), we define the variable *tax* as the firm's (net) tax payments standardized by the firm's operating income before depreciation and amortization in the fiscal year prior to the going private announcement. Its expected sign is positive. In a first step, we will employ both variables simultaneously in our regressions, while in a second step we will test interaction terms consisting of *Tax* and a dummy variable set equal to one if *Leverage* is in its first/second/third/fourth quartile. The expected coefficient for the highest quartile is positive.

Bonding benefit of leverage:

Proponents of the view that private equity is a superior organizational form, such as Jensen (1986), argue that the leverage increase in going private transactions is conducive to reducing managers' perks. The higher interest and principal payments force management to focus on value increasing projects. Debt can be seen as a corporate governance mechanism that brings greater discipline to management (Wright and Robbie, 1998). *Thus, we expect private equity targets to have low leverage ratios and high levels of free cash flows.* With regard to the former, Halpern *et al.* (1999) and Weir *et al.* (2008) provide limited evidence that going private targets in the US and UK

exhibit lower debt ratios than non-targets.[9] With regard to the latter, the evidence is more ambiguous: Lehn and Poulsen (1989), Singh (1990) and Opler and Titman (1993) show results consistent with the free cash flow hypothesis whereas findings by Servaes (1994), Kieschnick (1998), Halpern *et al.* (1999) and Weir *et al.* (2005) do not support Jensen's (1986) hypothesis.

H4 (bonding advantage of leverage): Private equity investors prefer investing in companies with simultaneous low leverage ratios and high free cash flow levels.

In the style of Axelson *et al.* (2007), we define the variable *Leverage* as the book value of total debt divided by the enterprise value. We expect a negative coefficient. Following Lehn and Poulsen (1989), we measure the level of free cash flow by operating income before depreciation and amortization minus tax, interest and dividend payments and scale it with total assets. We expect a positive coefficient for the variable.

Adjacent to the discussion above, Opler and Titman (1993) find empirical evidence that not the level of free cash flow itself determines the likelihood of a firm going private but the combination of unfavourable growth opportunities and high free cash flows. This is in line with Jensen's (1986) free cash flow theory which predicts that free cash flow problems are particularly severe in companies having large amounts of cash but no adequate investment opportunities. Therefore, we expect that the probability of going private is higher for companies with high levels of free cash flow and poor growth prospects.

We employ Tobin's Q as our proxy for the firm's growth opportunities. It is defined as the ratio of the firm's market value of assets divided by its replacement

[9] Halpern et al. (1999) show that this hypothesis only holds for companies with low managerial ownership. However, as we control in our regressions for the size of the management stake, our prediction about leverage should be unaltered.

costs.[10] Tobin (1969) describes firms with Q's less than one as firms that have no incentive to invest because their capital equipment is worth less than the costs of replacing it.

H5 (bonding advantage of leverage 2): Private equity investors prefer to invest in companies with a combination of low leverage, high free cash flows and low growth prospects.

*FCF*GrowthDummy* is an interaction term consisting of *FreeCashFlow* and a dummy for growth prospects. The growth prospect dummy is set equal to one if Tobin's Q is less than one. The expected coefficient is positive.

2.1.3 Capital expenditures

Murphy (1985) shows that managers have a tendency to increase their private benefits by empire building, i.e. to grow the firm beyond its optimal size. Therefore, private equity firms take a closer look at companies that 'overinvest' with regard to their industry peers. In those companies, a more efficient structuring of capital expenditures (CAPEX) will lead to a higher firm value. The empirical studies of Servaes (1994) and Halpern *et al.* (1999), however, do not lend support to the following hypothesis.

H6 (CAPEX): The likelihood of becoming a private equity target is higher for companies with relatively high capital expenditures.

[10] As other empirical studies, e.g. Malmendier and Tate (2008), we use the book value of assets as the substitute for its replacement costs.

Closely following Halpern *et al.* (1999) we try to detect inefficient investments by looking at the target firm's capital expenditures scaled by its total sales in order to control for firm size. We expect a positive coefficient for this proxy.

2.1.4 Risk

As outlined in the aforementioned discussion, buyouts are financed with a substantial increase in leverage. This results in higher interest and principal payments to the creditors, which have the right to take over control if the increased obligations are not met. Hence, private equity investors as new equity claimholders prefer companies with predictable and stable cash flows in order to reduce this risk. The less sensitive the company is to volatile market developments, the more likely is the private equity investor to retain control and to realize profits on his investment.

H7 (risk): Private equity investors prefer to invest in companies with stable cash flows.

We follow Achleitner *et al.* (2008) and proxy cash flow stability risk by the standard deviation of daily stock returns over 250 trading days counting backwards from two months prior to the announcement of the private equity investment. The expected coefficient is negative.

2.1.5 Performance

Private equity investors are particularly interested in relatively low-priced companies, i.e. whose stock price does not resemble the intrinsic potential of the company. A relatively low market valuation before the going private can arise for two reasons: First, in a scenario of semi-efficient capital markets where agents correctly

assess the value of the firm[11], poor stock performance indicates agency-conflicts within the company. Second, in the alternative scenario of non-semi-efficient capital markets, underperformance depicts the lack of market visibility. Dissatisfied managers, who see the market value of their company slumping and find no way to communicate their beliefs about the 'fair' value to the market participants, could be inclined to delist.[12] This explanation is supported by Weir *et al.* (2005b) who find that perceived undervaluation provides an impetus to go private. Such companies with a positive attitude towards a delisting and low valuation levels are particularly attractive to private equity investors. Although the aforementioned two reasons cannot be strictly separated, they can be united under the following hypothesis.

H8 (performance): The likelihood of a going private is inversely related to the stock price performance before the going private.

Performance is defined as the ratio of the closing market price two months prior to the announcement of the private equity investment divided by the average price, measured over 250 trading days counting backwards from two months prior to the announcement. In order to exclude market movements, we divide this figure by the equivalent ratio of the DJ EUROSTOXX market index, which embraces large, middle and small capitalisation companies of 12 European countries (UK not included). The expected coefficient is negative.

[11] Semi-efficient capital markets in the sense of Fama (1970).
[12] According to Renneboog et al. (2007), this problem might particularly hold for small companies which receive less coverage by the media and mutual funds and hence are less frequently traded.

2.2 Arguments originating from blockholder-specific governance systems

So far, the ownership structure of a firm has been scarcely considered in empirical investigations of the going private decision with Weir *et al.* (2005) representing a notable exception. However, like all going private studies, they draw their inferences from Anglo-Saxon transactions, thereby neglecting potential going private dynamics resulting from blockholder-dominated ownership structures.[13] This study intends to fill that gap. Essentially, we argue that blockholder-dominated ownership structures might influence going private transactions through three *competing* channels which we will refer to as the *monitoring, private benefits* and *irrevocable commitment* channels. As will become clear in the subsequent discussion, we try to empirically differentiate between these channels by looking primarily at the stakes of the largest and second largest shareholder, which in our sample on average add up to 88% of the total blockholdings.

2.2.1 Monitoring

Shareholders' incentive to overcome the traditional free-rider problem and to engage in active monitoring of the management increases with their equity stake invested in the company (Jensen and Meckling, 1976). Hence, companies under the monitoring eye of large stakeholders are supposed to be run more efficiently by their corporate management. Such firms with relatively effective governance structures in place should be less interesting to private equity investors, as they offer less potential for reducing agency costs.

[13] Cp. for example Faccio and Lang (2002).

H9 (monitoring): The propensity of private equity investors to take a firm private should decrease in the presence of large blockholders, who can monitor the management closely.

We employ the stake of the first and second largest blockholder as monitoring proxies and expect for both variables a negative sign. We opt for this empirical design as it (1) allows us to oppose the monitoring hypothesis to the two remaining ones, (2) both stakes account on average for 88% of our institutional holdings and therefore adequately approximate the sum of all blockholdings and (3) the remaining shareholders (with lower ranks in the ownership hierarchy) are likely to underinvest in monitoring[14] and therefore can be neglected. In the course of additional regression models, however, we will also test the sum of the three largest stakes (*3 blocks*), the sum of all stakes *(All stakes)* and the Herfindahl index (*Herfindahl*) as alternative monitoring proxies.

2.2.2 Private benefits

Many continental European companies are characterized by a dominant large shareholder (Faccio and Lang, 2002). This is particularly true in our going private sample, where 72.2% (39.8%) of the firms have a shareholder controlling more than 25% (50%) of the voting rights. Given this dominance of the largest blockholder, it becomes clear that there is potential for downright expropriation at the cost of the remaining (minority) shareholders. Bebchuk (1999) theoretically derives a positive relationship between ownership concentration and the size of private benefits and Dyck and Zingales (2004), Zingales (1994) and Barclay and Holderness (1989) provide empirical evidence for it. The potential to appropriate private benefits implies that blockholders sell their stakes in a control transfer only at a substantial premium,

[14] Due to the inherent two larger blockholders.

Bebchuk (1999).[15] Hence, we argue that private equity investors primarily avoid companies where large blockholders might be able to enjoy private benefits.

H10 (private benefits): Private equity investors are less likely to enter companies where large blockholders potentially appropriate private benefits of control.

Similar to Gugler and Yurtoglu (2003) we argue, that the entrance of private equity investors should *simultaneously* (1) decrease in the stake of the largest shareholders, as he would be more tempted to extract private benefits with increasing voting rights, and (2) increase in the stake of the second largest shareholder, as he will increasingly protect his (and the remaining shareholder's) claims from expropriation. As a sanity check, we will also substitute our dynamic monitor-of-the-monitor proxy, i.e. the size of the second largest shareholder (*Stake2*), through static dummies set to one if he exceeds the 5% or 10% threshold *(Stake2 Dummy>5%* and *Stake2 Dummy>10).*

2.2.3 Irrevocable commitments

In a Grossmann and Hart (1980) world, dispersed shareholders don't tender their shares to the bidder whenever they assume that the intrinsic value of the firm is higher than the offer price. As they are not pivotal in the success of the takeover, they prefer to free-ride and wait until the new acquirer has increased the value of the firm. Shleifer and Vishny (1986) demonstrate in a model that large shareholders provide a mechanism to overcome the free-rider problem. In particular, they reason that bidders with small existing stakes signal low value improvements and therefore have to pay large premia to convince the target shareholders to tender. This negative relationship between stakes

[15] In the context of IPOs, Bebchuk (1999) shows in his rent-protection theory of corporate ownership that '[…] when private benefits of control are large, maintaining a lock on control would enable the company's initial shareholders to capture a larger fraction of the surplus from value-producing transfers of control'.

and premia results in a positive link from stakes to the success likelihood of bids. Consequently, private equity investors should be more interested in companies, in which they can gain large stakes before announcing a public bid. This prediction is underpinned by a recent study by Wright *et al.* (2007). They document that private equity investors frequently approach target shareholders to reach irrevocable sale commitments, as going private buyouts with transactions cost amounting up to 10% of the deal value (CMBOR, 1999) are far more risky than alternative buyouts. These undertakings help the private equity investor to deter rival bidders from extracting future rents through competitive auctions (Wright *et al.*, 2007). In the same vein, interview evidence gathered by CMBOR (2001) shows that private equity firms (more precisely venture capitalists) prefer targeting companies with large shareholders in order to increase the success probability of the bid.

H11 (irrevocable commitments): Private equity firms prefer to target firms in which they see a potential to build up large stakes through privately negotiated irrevocable commitments.

We argue that the potential for irrevocable commitments is a function of the blockholdings and, in particular, of the first and second largest shareholder. We expect a positive sign for both variables. As previously pointed out, we opt for this empirical design as (1) it allows us to oppose the irrevocable commitments hypothesis to the two remaining ones, (2) both stakes account on average for 88% of our institutional holdings and therefore adequately approximate the sum of all blockholdings (3) both stakes are pivotal for the going private success due to their size and are therefore most likely to be included in private negotiations. In the course of additional regression models, however,

we will also test the sum of the three largest stakes, all stakes and the Herfindahl index as alternative irrevocable commitments proxies.

Table 1 summarizes the expected relationships of our three hypotheses.

[Insert Table 1 about here]

In our first test, we look *simultaneously* at the stake of the first and second largest shareholder. This allows us to differentiate between the three hypotheses. In supplemental tests, we employ alternative proxies for the monitoring and irrevocable commitments hypotheses.

3 METHODOLOGY AND DATA

3.1 Methodology

In order to test our hypotheses, we compare going private firms with firms remaining public by means of a binary logistic model with the dependent variable defined by:

$$Y_i = \begin{cases} 1 \text{ if the firm belongs to the going private group} \\ 0 \text{ if the firm belongs to the remaining public group.} \end{cases}$$

The going private probability can be written as

$$P_i = F(Z_i) = E(Y = 1 \mid \mathrm{Z_i}) = \frac{1}{1 + e^{-Z_i}} ,$$

where $Z_i = \beta X_i$ with X_i representing the set of variables with potential explanatory ability from the preceding section and β is the set of unknown parameters to be estimated through the logistic model

$$L_i = \ln\left(\frac{P_i}{1 - P_i}\right) = Z_i .$$

Our baseline model takes the following functional form:

$$Z_i = \beta_0 + \beta_1 Stake1_i + \beta_2 Stake2_i + \beta_3 Management_i + \beta_4 Management^2{}_i + \beta_5 Leverage_i + \beta_6 Tax_i + \beta_7 Capex_i + \beta_8 Performance_i + \beta_9 Risk_i + \beta_{10} Size_i .$$

3.2 Sampling

For the sampling of our two firm groups of interest, going private versus firms remaining public, the literature poses two valid procedures: random and choice-based sampling.[16] With regard to the former, a random sample from the complete universe of publicly listed companies is drawn without considering takeover events in the first place. The classification into the groups of interest, going private versus remaining public firms, is carried out in a subsequent second step. With regard to the latter, choice-based sampling, one first identifies all takeovers and then creates a control group. The control group is drawn either randomly (random procedure) or subject to matching criteria (matched procedure) from the remaining population of listed companies.

In accordance with the majority of the going private literature[17], we opt for choice-based sampling with the matching route for the following reasons: first, going private companies constitute a decent share of the stock market universe. In particular, continental European going privates approximately amount to up to 0.23% of all listed companies.[18] Hence, following random (i.e. non-choice-based) sampling would lead to an overwhelming proportion of remaining public companies in the sample. Estimations of such samples with their limited information content deliver relatively inaccurate parameter estimates (Palepu, 1985).[19] Second, choice-based sampling with the matching route will result in an overstatement (understatement) of the number of going privates (remaining public firms) when compared to the true population distribution. However, this deviation will only bias the constant but not the parameter estimates as long as the model estimation is based on a logistic distribution (Maddala, 1991).

[16] Sometimes, choice-based sampling is also referred to as 'state-based' sampling. See e.g. Palepu (1985).
[17] Cp. Weir et al. (2005) or Weir et al. (2008).
[18] Our calculations are based on all listed companies including financial firms. Kaplan and Strömberg (2008) show similar results for the US: Over the period 1980 – 2006, US going privates as a fraction of stock market capitalization amounted from 2% in boom to almost 0% in bust years.
[19] An approach to mitigate (but not erase) this problem would be to collect a very large sample. Due to the fact that our study requires hand-collected ownership data, however, this would mean a very high cost without any clear advantage to our approach explained subsequently.

3.3 Going private sample

We collect our sample of private equity sponsored going private transactions of continental European firms by consulting three databases: Thomson's SDC Platinum, Mergermarket and Private Equity Insight from Incisive Media, a data provider focusing on the private equity industry. We extract all completed transactions announced between January 1, 1997 and July 31, 2007 and delete duplicate observations.[20] Financial firms are excluded since their balance sheets differ strikingly from nonfinancial firms. This procedure leaves us with a preliminary sample of 193 potential private equity backed going private transactions. To ensure the accuracy of our sample, we run two central sanity checks:

1. We investigate whether the acquiring parties are indeed private equity sponsors. To this end, we examine their mission statements and investment histories as reported on their web pages, read the financial press and talk to industry experts. In case they target predominantly majority stakes (as opposed to hedge funds) of mature companies (as opposed to venture capitalists) and pursue a limited investment horizon (as opposed to strategic buyers), we classify them as private equity investors. In case the databases list universal or investment banks such as JP Morgan as acquirers, we find out whether the transaction was conducted by their private equity arms. Similarly, we also verify whether transactions by formerly pure private equity players such as Blackstone, which have evolved into multifinancial companies, have been carried out by their private equity divisions. This filter results in a rejection of 25 transactions.
2. Second, we scrutinize whether the transactions were indeed completed, i.e. represent going private transactions. Therefore, we determine the delisting date by examining the time series of stock prices and corroborate our findings with

[20] Mergermarket and Private Equity Insight don't record transactions before 1998.

press searches. This precise two-step procedure is important as can be seen at the example of MobilCom AG / Freenet AG. In May 2005, the private equity investor Texas Pacific Group bought a stake in Mobilcom. Subsequently, Moblicom merged with Freenet and as a result MobilCom's original listing ceased. However, the merged company refloated immediately after the merger had become effective. Hence, we delete this observation as it is not a going private transaction by its very nature. Overall, we detect 32 transactions which cannot be classified as going private transactions and thus have to be excluded from our examinations.

Of the remaining 136 firms, comprehensive data could not be retrieved for 28 companies, despite our best efforts.[21] This leaves us with a final sample of 108 continental European firms taken private by private equity investors.

3.4 Control sample

We base our peer selection on the Thomson Financial universe of listed companies[22] and apply the following matching algorithm for each going private observation (similar to Weir *et al.*, 2005; North, 2001; Klein and Zur, 2009):

1. We select all public companies which are headquartered in the same country as the going private firm.
2. We refine our selection by industry. In a first step, we pick all companies which operate in the same two-digit SIC industry. In case there are fewer than 5

[21] C.p. section 3.5.
[22] In particular, we use Thomson One Banker which covers the same listed companies than the more familiar Thomson Datastream database. The reason for this choice lays in the availability / non-availability of SIC codes in One Banker / Datastream, which we already have available for our going private sample and thus can use for the matching process.

potential matching firms[23], we enlarge the industry criterion to the one-digit SIC code.[24]

3. In order to identify the final matching firm, we employ a size criterion. In particular, we collect the amount of sales of all remaining firms in the fiscal year preceding the going private announcement. The firm with the smallest absolute sales deviation from the going private firm is chosen as the matching firm.

As a final sanity check, we verify by an examination of the stock prices that our matching firm has stayed public for at least 2 years after the going private announcement.

3.5 Ownership and financial data

We construct the ownership structure by considering all voting blocks equal or larger than 5%, the lowest common disclosure threshold across our countries and time horizon under observation. The respective data collection follows the subsequent process:

As our starting point, we use historical snapshots of Bureau Van Dijk's Amadeus database (BVDA) that reports ownership information at the end of January, April, July and October.[25] We choose the BVDA reporting point which is closest or equal to the fiscal year date preceding the announcement of the going private. In case BVDA does not provide us with (reliable) ownership information, we try to (re)collect it from (1) primary sources such as the company's annual reports and websites or via direct requests addressed at the companies[26] (2) stock market or regulatory authorities

[23] North (2001) sets the boundary for the US capital market at 10 firms. Due to the narrowness of the continental European markets, we reduce the boundary to 5 firms.
[24] Finally, 21 out of 108 peers were matched at the one-digit SIC level.
[25] From 1997 - 2002, we can only draw on semiannual snapshots from April and October versions. In robustness comparisons with other ownership sources, however, we observe that the ownership structure is relatively stable. Hence, our results should not be affected by this limitation.
[26] Only in one case, a company was able and willing to provide us with information about their historical ownership structure.

such as e.g. the 'Commissione Nazionale per la Società e la Borsa' (Consob) in Italy (3) private directories such as e.g. the 'Hoppenstedt Aktienführer' in Germany (4) press searches based on Factiva (5) and web searches based on Google.

We use the resulting ownership structure as the basis for the construction of the management stake. For our matching of blockholders with managers, BVDA should deliver the required historical board information for the identification of the managers. However, we encountered two shortages of the database's board module[27]: *first*, in the case of two-tier boards, the database often does not precisely indicate whether the directors are members of the management or of the supervisory body. *Second*, in the case of unitary boards, the database does not differentiate between non-executive and executive directors, the latter being considered managers in our study.[28] Hence, we turned to the annual reports and hand-collected the required information in order to ensure the accuracy of our management stake measure.

The source of stock and accounting data is Thomson's Datastream tape and, if required, is complemented by information from the firm's annual reports. With regard to accounting data, we collect the information at the closest available fiscal year (FY) date prior to the going private announcement.

In order to ensure that our results are not driven by outliers, we winsorize both accounting and stock based variables on their upper and lower tails at the 1% level. To our best knowledge, no comparable data set has previously been constructed.

[27] In Bureau van Dijk, the module is named 'Managers'.
[28] Barontini and Caprio (2006) proceed similar.

4 EMPIRICAL RESULTS

4.1 Descriptive statistics

Table 2 displays the distribution of our going private sample across continental Europe. Not surprisingly, 45% of our 108 private-equity-backed buyouts take place in France and Germany. Both countries by far outnumber the other continental European countries in terms of the number of capital market listed firms. In countries like Spain, Italy, Finland, Hungary, Belgium, Austria and Luxembourg we only observe five or fewer going private transactions over the whole sample period.

[Insert Table 2 about here]

Table 3 reports the number and size (in terms of enterprise values) of continental European going private deals over time. The activity took off in 1999 with 19 deals amounting to a value of € 3.7 billion. During 2000 to 2003, the number and total value of deals remained relatively constant with 2001 lagging slightly behind. Strikingly, the year 2004 marks the starting point of significantly higher deal volumes exceeding the € 10 billion barrier. Clearly, this pattern is not driven by an increase in the number of transactions but resembles the trend to larger average deal sizes which has been favoured by the supply of relatively cheap debt. While the average buyout during the period 2000 to 2003 was valued at approximately € 300 million, its size more than doubled in the subsequent private equity boom of 2004 to 2007.

[Insert Table 3 about here]

Table 4 compares the characteristics of our going private sample with the control group of non-targets. Going private targets are matched with the control firms by

country, industry and in terms of sales. We present the results of a t-test and a rank-sum test for differences in means and medians.

[Insert Table 4 about here]

Panel A of Table 4 shows that the mean and median of all proxies measuring the concentration of ownership - *Herfindahl, All blocks and 3 blocks* - are significantly higher for going private targets than for those firms that stay listed. This result is strengthened by the finding that the ownership structure of going private candidates exhibits a significant larger controlling shareholder than the companies remaining public. This suggests that private equity investors build up large stakes through privately negotiated irrevocable commitments in order to increase the success probability of the deal and to deter rival bidders from extracting future rents through competitive auctions (Wright *et al.*, 2007). Therefore, they approach large shareholders of the target company and try to convince them to tender their shares. The finding lends support to our hypothesis H11 and hence Grossmann and Hart's (1980) free-riding argument in takeover situations. Furthermore, it confirms empirical findings by Weir *et al.* (2005) and Wright *et al.* (2007) for the UK market.

We do not find any statistical differences between the mean and median stake of the second largest controlling shareholder in going private targets and their listed counterparts. There is some evidence in the univariate results that private equity firms invest in companies that exhibit relatively low managerial ownership (H1). The average management stake is about 3.5 percentage points lower for going private targets compared to non-targets. Furthermore, the median managerial ownership stake is significantly lower (at the 10% level). Hence, private equity firms seem to acquire companies at which there is potential to increase the incentive package for managers.

In Panel B of Table 4, we find strong evidence that private equity targets have a substantially higher debt capacity than firms remaining public which is documented by a significantly lower (at the 1% level) leverage ratio for going private firms. Untapped debt capacity can be used (1) to increase the debt tax shield (H3) or (2) to further discipline the management (H4). At first glance, the descriptive analysis does not provide clear evidence for one of the former motives, as our sample firms do neither differ from their peers in terms of tax payments nor in the level of free cash flow. But as stated in the hypotheses section, we have to take a closer look at extensions in our multivariate analysis in order to capture the tax and bonding advantage of leverage more accurately.

Consistent with our expectation there is weak evidence that going privates show significantly higher levels of capital expenditures than their listed counterparts. The median of the variable *Capex* is significantly higher (at the 10% level). Finally, we cannot distinguish going private targets and non-targets in terms of prior stock price performance, risk and size.

In a nutshell: the descriptive statistics provide us with evidence that private equity firms buy companies in order to mitigate potential agency problems and hence improve the corporate governance of these companies. In particular, our going privates are characterized by relatively low managerial ownership, a high debt capacity and relatively high capital expenditures. With regard to the particular continental European ownership structure, the targets exhibit larger blockholders and a higher ownership concentration. Gaining irrevocable commitments seems to be more important to the private equity investor than monitoring and private benefits considerations.

4.2 Multivariate results

The two-dimensional results presented in the preceding section do not account for interactions between the independent variables such as leverage and tax liabilities or free cash flow and growth opportunities. Therefore we now turn to a multivariate logistic regression analysis in order to investigate the motives of private equity investors in greater detail.

[Insert Table 5 about here]

Table 5 contains the first set of logistic multivariate results. It takes a closer look at the role of the controlling shareholders in the private equity investor's buyout decision. Inter alia, this will shed light on the question, which of our three competing blockholder channels derived in section 2.2 will hold. All models except those including year and country dummies, are overall significant (at least at the 5% level). As neither any country nor any time dummy is significant and the coefficients of the other variables remain unaffected in these regression models, we disregard country and time dummies in the following discussion of our empirical results. The pair-wise correlation coefficients in Table 7 raise concerns that the models might suffer from muliticollinearity issues with regard to the variables *Leverage, Tax* and *FreeCashFlow*. However, the variance inflation factors (VIF) of these variables are less than 1.9 in all models. As an additional robustness check, we test supplemental models including only one of the three variables at a time in order to control for any multicollinearity problem. The coefficients and significance levels do not change substantially.[29]

Models 1 and 2 show that the larger the equity stake of the first and the second controlling shareholder, the more likely is a going private transaction. Furthermore, results from models 5 to 7 show that all three different measures of concentrated

[29] The supplemental regression models are not reported in the paper. They are available from the contact author.

ownership - *Herfindahl, All blocks and 3 blocks* - have a significant positive influence on the private equity investor's decision to take a company private. These findings corroborate the results of our univariate analysis. They provide strong empirical evidence in favour of Grossmann and Hart's (1980) free-riding argument in takeover situations and our irrevocable commitments hypothesis (H11), which suggests that private equity firms prefer to target firms in which they see a potential to build up large stakes through private negotiations. Such undertakings both reduce the high failure risk of going private transactions which amount up to 10% of the deal value (CMBOR, 1999) and discourage rival bidders from driving up prices through competing bids. Our results are in line with the empirical evidence of Weir *et al.* (2005) and Wright *et al.* (2007) for the UK market. Hence, we do not find empirical support for our competing monitoring (H9) and private benefits (H10) hypotheses. Private equity investors do on average not look for companies that are badly governed by outside shareholders and they do not avoid companies whose controlling shareholders potentially receive private benefits (and thus are likely to demand significant premia). The last finding is further strengthened by the positive influence of the dummy variable *stake2dummy* in models 3 and 4 which is set equal to one if the second largest shareholder exceeds the 5% or 10% threshold, respectively.

Furthermore, the results document that firms going private are more likely to have either relatively low or high managerial shareholdings. The coefficients on the variables *Management* (*ManagementSq)* are significantly positive (negative) in all models (at the 10% level or better) except for model 5. These findings support our hypotheses H1 and H2 and confirm Halpern *et al.'s* (1999) heterogeneity hypothesis which postulates that there are two types of poorly performing firms that are taken private: These firms are characterized by either relatively low managerial shareholdings and hence suffer from incentive problems or they are characterized by relatively high

managerial shareholdings and as a result suffer from the problem that management engages in suboptimal diversifying investments.

In addition, models 1 to 8 provide strong evidence that the likelihood of a going private transaction is higher for companies that have a high debt capacity. The coefficient on the variable *Leverage* is negatively significant (at the 1% level) in all eight models. This result indicates that private equity investors prefer to pick companies where increased leverage could lead to additional tax breaks (H3) and/or brings greater discipline to management (H4). Following the standard empirical design applied by the literature, i.e. to include separate measures for the free cash flow and tax level, does not reveal any insights into this interesting question. Both the *Tax* and *FreeCashFlow* variables are insignificant in the regressions. We will return to this question later.

Finally, we do not find any statistical or economic influence of the variables *Capex*, *Performance* and *Risk* on the decision to take a company private. Likewise, our control variable *Size* is, with the exception of model 8, not significant.

In the second set of our logistic multivariate regressions, we return to the previously highlighted question of whether private equity investors buy companies with a high debt capacity due to tax and/or management bonding reasons. Therefore, we employ interaction terms which capture the underlying rationales more precisely. The results are presented in Table 6.

[Insert Table 6 about here]

Again, all models are overall significant (at the 1% level) except for the models including year and country dummies. The management variables, the leverage variable and the proxy for concentrated ownership remain significant as expected.

First, with regard to the bonding advantage, we examine Jensen's (1986) argument that particularly managers of mature companies, i.e. businesses with

unfavourable growth opportunities, should be tempted to waste free cash flows. In all of the models 9 to 13, the interaction term *FCF*growthdummy* is significantly positive (at least at the 5% level), while the metric *FreeCashFlow* is insignificant. These results support hypothesis H5, that private equity investors prefer companies with a combination of unfavourable growth opportunities and high cash flows where leverage could be employed as a bonding mechanism. The result is consistent with Opler and Titman's (1993) finding for the US market.

Second, and with regard to the tax advantage, we refine our previous analysis by splitting our tax liabilities measure into quartiles according to the leverage level. The interaction term *Tax*DLev1Quartile,* which comprises the companies with the lowest leverage levels, is significantly positive (at the 5% level) in all included models, whereas all other interaction terms are insignificant. These results indicate that private equity investors pick companies that simultaneously have high tax liabilities and high debt capacities. These companies offer great potential for future tax breaks, as the high tax liabilities could be reduced by increases in the leverage levels. This confirms previous empirical results by Halpern *et al.* (1999) for the US market.

Overall, our multivariate logistic regression results provide strong evidence that private equity investors acquire companies in order to mitigate potential agency problems and hence improve the corporate governance of these companies. In particular, our multivariate results show that firms having relatively low or relatively high managerial ownership, exhibiting a high debt capacity and a combination of high free cash flows with low growth opportunities are more likely to become private equity targets. With regard to the particular continental European ownership structure, the going private companies have larger blockholders and a higher ownership concentration. Gaining irrevocable commitments seems to be more important to the private equity investor than monitoring and private benefits considerations. Finally, we

also find some evidence that the potential for increased debt tax shields induces the private equity investor to enter.

5 CONCLUSION

With the second buyout wave, private equity's interest spilled over into the continental European public equity markets. This paper addresses the dearth of private equity research for the continental European market by taking a first systematic look at going private buyouts.

We aim to identify the investment rationales of private equity funds against the background of the distinctive continental European corporate governance framework. The different setting might affect the significance of traditional going private explanations and, in addition, poses a new question: how does the blockholder-oriented ownership pattern affect their investment strategy? Is it the monitoring, private benefits or the irrevocable commitments aspect of the blockholder structure which matters for the private equity funds' investment decision? Designing an empirical test and drawing on a unique data set allows us to arrive at the following conclusions:

With regard to the traditional explanations, our results are fairly consistent with the studies for the Anglo-Saxon markets and lend strong support to our notion that private equity investors mitigate potential agency problems, i.e. improve the corporate governance of companies. We find that private equity targets are characterized by either relatively low or relatively high managerial shareholdings. This finding confirms Halpern *et al.'s* (1999) heterogeneity hypothesis which postulates that there are two types of poorly performing firms that are taken private due to either incentive problems (low managerial ownership) or the fact that management cares about the firm's unsystematic risk exposure (high managerial shareholdings). Furthermore, private equity investors pick companies with a high debt capacity. We investigate in detail both underlying arguments for this finding, i.e. the bonding and tax advantage of leverage. With regard to the former, we observe that private equity investors choose companies,

where an increase in leverage will reduce the danger of inefficient free cash flow spending originating from poor investment alternatives[30] (Jensen, 1986; Opler and Titman, 1993). With regard to the latter, we find that the tax advantage seems only to matter for the private equity's investment decision when the target has ample debt capacity.[31] Hence, under the outlined specific circumstances, private equity investors employ leverage for both governance (bonding) and financial (tax) engineering purposes.

With regard to the particular blockholder pattern in continental Europe, we find that private equity investors prefer companies with a concentrated ownership structure and large blockholders. This evidence corroborates the findings of Weir *et al.* (2005) and Wright *et al.* (2007) for the UK. It implies that gaining irrevocable commitments outweighs monitoring and private benefits considerations of private equity investors. Hence, private equity funds primarily want to increase the probability of deal success.

Taking into account that the going private activity in continental Europe compared to Anglo-Saxon markets has not been slowed down by the recent credit crunch and is expected to grow[32], further research seems particularly worthwhile. For example, it would be interesting to contrast directly the going private decision of continental European versus Anglo-Saxon transactions and to compare the explanatory power of firm specific versus previously neglected macroeconomic drivers (such as interest rates). Clearly, further research of continental European going privates should also aim at investigating their post-acquisition performance. Such an examination of the private phase would greatly help to better understand the corporate control role of private equity investors.

[30] I.e. low growth opportunities.
[31] Ample in the sense that the target firms leverage is in the sample's highest quartile.
[32] C.p. the introduction.

REFERENCES

Achleitner, A.-K., Andres, C., Betzer, A. and Weir, C., 'Economic consequences of private equity investments on the German stock market', *Working Paper* (Center for Entrepreneurial and Financial Studies, Technische Universität München, TUM Business School, 2008).

Andres, C., 'Large shareholders and firm performance - an empirical examination of founding-family ownership', *Journal of Corporate Finance*, Vol. 14, 2008, pp. 431-45.

Axelson, U., Jenkinson, T., Strömberg, P. and Weisbach, M. S., 'Leverage and pricing in buyouts: an empirical analysis', *Working Paper* (Swedish Institute for Financial Research conference on the economics of the private equity market, 2007).

Barclay, M. J. and Holderness, C. G., 'Private benefits from control of public corporations', *Journal of Financial Economics*, Vol. 25, 1989, pp. 371-95.

Barontini, R. and Caprio, L., 'The effect of family control on firm value and performance: evidence from continental Europe', *European Financial Management*, Vol. 12, 2006, pp. 689-723.

Bebchuk, L. A., 'A rent-protection theory of corporate ownership and control', *Working Paper* (National Bureau of Economic Research, 1999).

Berwin, S. J., 'Public-to-private: an overview', (SJ Berwin: London, 2007).

CMBOR, 'Recent developments in the UK public to private buy-out market', *Quarterly Review from the Center for Management Buy-out Research* (Nottingham University Business School, 1999), pp. 19-40.

CMBOR, *Quarterly Review from the Centre for Management Buy-out Research* (Nottingham University Business School, 2001).

Cowie, D., 'German equity downturn drives take-private deals', *DowJones Financial News*, 8 September, 2008.

DeAngelo, H., DeAngelo, L. and Rice, E. M., 'Going private: minority freezeouts and stockholder wealth', *Journal of Law and Economics*, Vol. 27, 1984, pp. 367-401.

Dyck, A. and Zingales, L., 'Private benefits of control: an international comparison', *Journal of Finance*, Vol. 59, 2004, pp. 537-600.

Faccio, M. and Lang, L. H. P., 'The ultimate ownership of Western European corporations', *Journal of Financial Economics*, Vol. 65, 2002, pp. 365-95.

Fama, E. F., 'Efficient capital markets: a review of theory and empirical work', *Journal of Finance*, Vol. 25, 1970, pp. 383-417.

Franks, J. and Mayer, C., 'Ownership and control of German corporations', *Review of Financial Studies*, Vol. 14, 2001, pp. 943-77.

Grossman, S. J. and Hart, O. D., 'Takeover bids, the free-rider problem, and the theory of the corporation', *Bell Journal of Economics*, Vol. 11, 1980, pp. 42-64.

Gugler, K. and Yurtoglu, B. B., 'Corporate governance and dividend pay-out policy in Germany ', *European Economic Review*, Vol. 47, 2003, pp. 731-58.

Halpern, P., Kieschnick, R. and Rotenberg, W., 'On the heterogeneity of leveraged going private transactions', *Review of Financial Studies*, Vol. 12, 1999.

Jenkinson, T., 'The new model army of private equity is a threat to the stock market's throne', *The Times*, 5 March, 2007.

Jensen, M. C., 'Agency costs of free cash flow, corporate finance and takeovers', *American Economic Review*, Vol. 76, 1986, pp. 323-29.

Jensen, M. C. and Meckling, W. H., 'Theory of the firm: managerial behavior, agency costs and ownership structure', *Journal of Financial Economics*, Vol. 3, 1976, pp. 305-60.

Kaplan, S. and Strömberg, P., 'Leveraged buyouts and private equity', *Working Paper*, (National Bureau of Economic Research, 2008).

Kaplan, S. N., 'Management buyouts: evidence on taxes as a source of value', *Journal of Finance*, Vol. 44, 1989, pp. 611-32.

Kieschnick, R. L., 'Free cash flow and stockholder gains in going private transactions revisited', *Journal of Business Finance & Accounting*, Vol. 25, 1998, pp. 187-202.

Klein, A. and Zur, E., 'Entrepreneurial shareholder activism: hedge funds and other private investors', *Journal of Finance*, forthcoming 2009.

La Porta, R., Lopez-de-Silanes, F. and Shleifer, A., 'Corporate ownership around the world', *Journal of Finance*, Vol. 54, 1999, pp. 471-517.

Lehn, K. and Poulsen, A., 'Free cash flow and stock holder gains in going private transactions', *Journal of Finance*, Vol. 44, 1989, pp. 771-87.

Lowenstein, L., 'Management buyouts', *Columbia Law Review*, Vol. 85, 1985, pp. 730-84.

Maddala, G. S., 'A perspective on the use of limited-dependent and qualitative variables models in accounting research', *Accounting Review*, Vol. 66, 1991, pp. 788-807.

Malmendier, U. and Tate, G. A., 'Who makes acquisitions? CEO overconfidence and the market's reaction', *Journal of Financial Economics*, Vol. 89, 2008, pp. 20-43.

May, D. O., 'Do managerial motives influence firm risk reduction strategies?' *Journal of Finance*, Vol. 50, 1995, pp. 1291-308.

McConnell, J. J. and Servaes, H., 'Additional evidence on equity ownership and corporate value', *Journal of Financial Economics*, Vol. 27, 1990, pp. 595-613.

Modigliani, F. and Miller, M. H., 'The cost of capital, corporation finance and the theory of investment', *American Economic Review*, Vol. 48, 1958, pp. 261-97.

Modigliani, F. and Miller, M. H., 'Corporate income taxes and the cost of capital: a correction', *American Economic Review*, Vol. 53, 1963, pp. 433-43.

Morck, R., Shleifer, A. and Vishny, R. W., 'Management ownership and market valuation - an empirical analysis', *Journal of Financial Economics*, Vol. 20, 1988, pp. 293-315.

Murphy, K. J., 'Corporate performance and managerial remuneration: an empirical analysis', *Journal of Accounting and Economics*, Vol. 7, 1985, pp. 11-42.

North, D. S., 'The role of managerial incentives in corporate acquisitions: evidence from the 1990s', *Journal of Corporate Finance*, Vol. 7, 2001, pp. 125-49.

Opler, T. and Titman, S., 'The determinants of leveraged buyout activity: free cash flow vs. financial distress costs ', *Journal of Finance*, Vol. 48, 1993, pp. 1985-99.

Palepu, K. G., 'Predicting takeover targets', *Journal of Accounting and Economics*, Vol. 8, 1985, pp. 3-35.

Renneboog, L., Simons, T. and Wright, M., 'Why do public firms go private in the UK? The impact of private equity investors, incentive realignment and undervaluation', *Journal of Corporate Finance*, Vol. 13, 2007, pp. 591-628.

Servaes, H., 'Do takeover targets overinvest?' *Review of Financial Studies*, Vol. 7, 1994, pp. 253-77.

Shleifer, A. and Vishny, R. W., 'Large shareholders and corporate control', *Journal of Political Economy*, Vol. 94, 1986, pp. 461-88.

Short, H. and Keasey, K., 'Managerial ownership and the performance of firms: evidence from the UK', *Journal of Corporate Finance*, Vol. 5, 1999, pp. 79-101.

Singh, H., 'Management buyouts: distinguishing characteristics and operating changes prior to public offering', *Strategic Management Journal*, Vol. 11, 1990, pp. 111-29.

Tobin, J., 'A general equilibrium approach to monetary theory', *Journal of Money, Credit and Banking*, Vol. 1, 1969, pp. 15-29.

Weir, C., Laing, D. and McKnight, P. J., 'Internal and external governance mechanisms: their impact on the performance of large UK public companies', *Journal of Business Finance & Accounting*, Vol. 29, 2002, pp. 579-611.

Weir, C., Laing, D. and Wright, M., 'Incentive effects, monitoring mechanisms and the market for corporate control: an analysis of the factors affecting public to private transactions in the UK', *Journal of Business Finance & Accounting*, Vol. 32, 2005, pp. 909-43.

Weir, C., Laing, D. and Wright, M., 'Undervaluation, private information, agency costs and the decision to go private', *Applied Financial Economics*, Vol. 15, 2005, pp. 947-61.

Weir, C., Wright, M. and Scholes, L., 'Public-to-private buy-outs, distress costs and private equity', *Applied Financial Economics*, Vol. 18, 2008, pp. 801-19.

Wright, M. and Robbie, K., 'Venture capital and private equity: a review and synthesis', *Journal of Business Finance & Accounting*, Vol. 25, 1998, pp. 521-70.

Wright, M., Weir, C. and Burrows, A., 'Irrevocable commitments, going private and private equity', *European Financial Management*, Vol. 13, 2007, pp. 757-75.

Zingales, L., 'The value of the voting right: a study of the Milan Stock Exchange experience ', *Review of Financial Studies*, Vol. 7, 1994, pp. 125-48.

APPENDIX

Table 1

Empirical Design of Hypotheses Arising from the Blockholder-oriented Corporate Governance System

This table summarizes the tests and expected signs of our three competing hypotheses, i.e. the monitoring (H9), private benefits (H10) and irrevocable commitments (H11) hypotheses.

	Monitoring hypothesis	*Private benefits hypothesis*	*Irrevocable commitments hypothesis*
(i) Discrimination test for competing hypotheses			
- Stake1	-	-	+
- Stake2 (or dummy if > 5 or 10%)	-	+	+
(ii) Supplemental tests for hypotheses			
- Sum of 3 largest stakes	-	n.a.	+
- Sum of all stakes	-	n.a.	+
- Concentration of all stakes	-	n.a.	+

Table 2

Number of Going Private (GP) Companies across Countries

This table reports the distribution of our going private companies across the countries, where they are headquartered.

Country	Number of GPs	Percentage of GPs
France	30	27.8%
Germany	18	16.7%
Sweden	13	12.0%
Netherlands	12	11.1%
Denmark	8	7.4%
Norway	7	6.5%
Spain	5	4.6%
Italy	4	3.7%
Finland	4	3.7%
Hungary	3	2.8%
Belgium	2	1.9%
Austria	1	0.9%
Luxembourg	1	0.9%
Total	**108**	**100%**

Table 3

Number and Enterprise Values of Going Private (GP) Companies across Time

This table shows the number and enterprise values of our going private (GP) companies which were announced and successfully delisted by July 2007. Year denotes the year of the going private (GP) announcement. Additionally, we report recent statistics for the entire year 2007 as of October 2008, the completion date of this research. It is important to note that at October 2008 there were still imminent deals which had been announced in 2007 but were not completed by then. Enterprise values are defined as market capitalization plus net debt on the fiscal year date prior to the GP announcement.

Year	Number of GPs	Total EVs (in m€)	EV Mean	EV Median	EV Min	EV Max
1997	1	20	20	20	20	20
1998	1	6	6	6	6	6
1999	19	3,694	194	153	15	653
2000	14	3,994	285	222	30	1,402
2001	7	1,956	279	106	22	738
2002	11	3,097	282	231	17	708
2003	13	4,263	328	133	7	1,548
2004	15	11,322	755	577	52	2,789
2005	10	10,641	1,064	563	28	4,325
2006	13	16,178	1,244	391	36	8,412
Jan. - Jul. 2007	4	1,893	473	124	33	1,612
Total	**108**	**57,064**	**528**	**199**	**6**	**8,412**
2007 (as of Oct. 2008)	10	8,338	834	563	33	2,600

Table 4

Descriptive Statistics – Going Privates (GP) versus Control Group (CG)

The following table compares our sample of 108 going privates (GP) companies with a control group (CG) of time-, country-, industry- and size-matched companies remaining public. *Panel A* depicts ownership based variables. They are based on the firms' blockholder structure on the quarterly Bureau van Dijk reporting time point, which is closest or equal to the FY date before the going private announcement. *Panel B* shows accounting and stock based variables. We collect accounting data on the fiscal year (FY) date prior to the going private announcement. In order to control for the influence of outliers, we winsorize all accounting and stock based variables at the upper and lower tails at the 1% level. ***, **, * indicate that coefficients are statistically significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	Going Privates (GP)					**Control Group (CG)**					**Δ**			
Variable	Mean	St. Dev.	Med.	Min	Max	Mean	St. Dev.	Med.	Min	Max	$Mean_{GP}$ - $Mean_{CG}$	t test (p-values)	$Med._{GP}$ - $Med._{CG}$	Ranksum test (p-values)
Panel A: Ownership based variables														
Herfindahl	0.280	0.257	0.174	0.003	1.000	0.211	0.199	0.144	0.000	1.000	0.069	*0.028* **	0.030	*0.049* **
All blocks	60.889	22.415	63.485	5.190	100.000	50.947	26.097	56.845	0.000	100.000	9.942	*0.003* ***	6.640	*0.010* **
3 blocks	57.024	23.360	57.805	5.190	100.000	48.583	25.052	53.610	0.000	100.000	8.442	*0.011* **	4.195	*0.037* **
Stake1	43.505	25.981	37.500	5.010	100.000	36.913	24.015	32.500	0.000	100.000	6.592	*0.054* *	5.000	*0.093* *
Stake2	9.882	8.950	9.000	0.000	43.000	8.280	7.374	7.040	0.000	30.800	1.602	*0.153*	1.960	*0.236*
Management	10.759	23.390	0.000	0.000	100.000	14.264	22.806	0.000	0.000	83.500	-3.506	*0.266*	0.000	*0.064* *
Panel B: Accounting and stock based variables														
Leverage	0.276	0.205	0.252	0.000	0.895	0.383	0.283	0.328	0.000	1.183	-0.107	*0.002* ***	-0.076	*0.008* ***
Free cash flow	0.083	0.070	0.088	-0.214	0.240	0.068	0.084	0.083	-0.261	0.240	0.016	*0.138*	0.005	*0.143*
Tax	0.170	0.123	0.186	-0.223	0.840	0.167	0.224	0.167	-0.380	0.992	0.003	*0.893*	0.018	*0.634*
Capex	0.081	0.196	0.042	0.001	1.990	0.096	0.296	0.036	0.001	1.990	-0.014	*0.672*	0.006	*0.061* *
Performance	1.047	0.330	1.017	0.404	1.980	1.015	0.332	0.984	0.404	1.980	0.032	*0.478*	0.033	*0.511*
Risk	2.422	1.065	2.261	0.691	8.157	2.696	1.385	2.431	0.691	8.157	-0.274	*0.105*	-0.170	*0.166*
Size	598.314	984.521	239.977	12.184	5528.999	460.460	852.017	197.623	12.184	5528.999	137.855	*0.272*	42.355	*0.129*

The *Herfindahl* index is derived as the sum of squared ownership percentages of all blockholders owning an equity stake equal or bigger than 5%. *AllBlocks* is calculated as the sum of all equity blockholdings. *3Blocks* is calculated as the sum of the three largest equity blockholdings. *Stake1* is defined as the largest equity stake. *Stake2* is defined as the second largest equity stake. *Management* is the sum of all stakes of the firms' executive officers. *Leverage* is defined as total debt through enterprise value (Axelson *et al.*, 2007). The level of *FreeCashFlow* is approximated by operating income before depreciation and amortization minus tax, interest and dividend payments (Lehn and Poulsen, 1989). We scale this metric with total assets. *Tax* measures tax payments as a percentage of operating income

before depreciation and amortization. *Capex* represents capital expenditures divided by sales. *Performance* is defined as the ratio of the closing market price two months prior to the announcement of the private equity investment divided by the average price, measured over 250 trading days counting backwards from two months prior to the announcement. In order to exclude market movements, we divide this figure by the equivalent ratio of the DJ EUROSTOXX market index, which embraces large, middle and small capitalisation companies of 12 Eurozone countries (UK not included). *Risk* is measured as the standard deviation of daily stock returns over 250 trading days counting backwards from two months prior to the announcement of the private equity investment. The variable *Size* represents the firms' total assets.

Table 5

Logistic Regression Results I

The table presents potential determinants of our going private transactions by means of binary logit regressions. The response variable is coded 1 for going private firms and 0 for control firms. Regression 1 tests our base model. In regression 2 we additionally control for time- and country-fixed effects. In regressions 3 and 4 we substitute our dynamic monitor-of-the-monitor proxy, i.e. the size of the second largest shareholder, by static dummies set equal to if it exceeds the 5% or 10% threshold. Regressions 5, 6 and 7 extend our analyses by testing the variables Herfindahl (Model 5), 3Blocks (Model 6) and AllBlocks (Model 7) as alternative monitoring and irrevocable commitments proxies. In regression 8 we control additionally for time- and country-fixed effects. In order to test for potential multicollinearity problems between *Leverage, FreeCashFlow and Tax*, we reran models 1 and 7 by including the variables separately. The results from our reported regressions remain unchanged. The additional regressions are available upon request.

The independent variables are defined as following: Stake1 is defined as the largest equity stake. *Stake2* is defined as the second largest equity stake. The *Herfindahl* index is derived as the sum of squared ownership percentages of all blockholders owning an equity stake equal or bigger than 5%. *AllBlocks* is calculated as the sum of all equity blockholdings. *3Blocks* is calculated as the sum of the three largest equity blockholdings. *Management* is the sum of all stakes of the firm's executive officers. *ManagementSq* is the squared metric of Management. *Leverage* is defined as total debt through enterprise value (Axelson *et al.*, 2007). The level of *FreeCashFlow* is approximated by operating income before depreciation and amortization minus tax, interest and dividend payments (Lehn and Poulsen, 1989). We scale this metric with total assets. *Tax* measures tax payments as a percentage of operating income before depreciation and amortization. *Capex* represents capital expenditures divided by sales. *Performance* is defined as the ratio of the closing market price two months prior to the announcement of the private equity investment divided by the average price, measured over 250 trading days counting backwards from two months prior to the announcement. In order to exclude market movements, we divide this figure by the equivalent ratio of the DJ EUROSTOXX market index, which embraces large, middle and small capitalisation companies of 12 Eurozone countries (UK not included). *Risk* is measured by the standard deviation of daily stock returns over 250 trading days counting backwards from two months prior to the announcement of the private equity investment. The variable *Size* represents the firm's total assets.

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Stake1	**0.01172**	**0.01539**	**0.01184**	**0.01140**				
	(1.76)*	(1.87)*	(1.73)*	(1.72)*				
Stake2	**0.03962**	**0.04509**						
	(1.98)**	(2.10)**						
Stake2 Dummy>5%			0.31492					
			(0.89)					
Stake2Dummy>10%				**0.60187**				
				(1.90)*				
Herfindahl					**1.24289**			
					(1.68)*			

3Blocks						**0.01589**		
						(2.39)**		
AllBlocks							**0.01881**	**0.02431**
							(2.84)***	(3.14)***
Management	**-0.05753**	**-0.06316**	**-0.05138**	**-0.05741**	**-0.04397**	**-0.04976**	**-0.05097**	**-0.05540**
	(2.49)**	(2.46)**	(2.28)**	(2.48)**	(1.93)*	(2.29)**	(2.33)**	(2.31)**
ManagementSq	**0.00073**	**0.00079**	**0.00063**	**0.00072**	0.00052	**0.00059**	**0.00060**	**0.00065**
	(2.08)**	(2.06)**	(1.86)*	(2.05)**	(1.50)	(1.83)*	(1.87)*	(1.86)*
Leverage	**-1.73160**	**-2.08779**	**-1.75536**	**-1.79563**	**-1.75613**	**-1.74323**	**-1.75223**	**-2.11389**
	(2.59)***	(2.85)***	(2.66)***	(2.68)***	(2.68)***	(2.64)***	(2.64)***	(2.91)***
FreeCashFlow	0.73156	1.01115	0.57408	0.84433	0.59974	0.80021	0.82204	1.20521
	(0.35)	(0.46)	(0.27)	(0.40)	(0.28)	(0.38)	(0.39)	(0.54)
Tax	-0.18408	-0.19422	-0.29656	-0.21571	-0.31947	-0.24023	-0.19209	-0.13508
	(0.20)	(0.20)	(0.33)	(0.23)	(0.35)	(0.26)	(0.21)	(0.14)
Capex	0.10021	-0.08961	0.16106	0.16793	0.15758	0.15433	0.19730	-0.03112
	(0.15)	(0.12)	(0.25)	(0.25)	(0.24)	(0.23)	(0.30)	(0.04)
Performance	0.06690	0.11309	0.12044	0.03292	0.14578	0.07728	0.03745	0.13081
	(0.15)	(0.19)	(0.27)	(0.07)	(0.33)	(0.17)	(0.08)	(0.22)
Risk	-0.10374	-0.11946	-0.12329	-0.09712	-0.13597	-0.11055	-0.09991	-0.10678
	(0.75)	(0.77)	(0.90)	(0.70)	(1.00)	(0.80)	(0.72)	(0.68)
Size	0.00018	0.00027	0.00015	0.00021	0.00016	0.00020	0.00022	**0.00033**
	(1.08)	(1.50)	(0.90)	(1.23)	(0.93)	(1.16)	(1.29)	(1.80)*
Constant	0.01991	0.39852	0.17989	0.15588	0.57333	0.01116	-0.20931	-0.52241
	(0.02)	(0.18)	(0.21)	(0.20)	(0.76)	(0.01)	(0.25)	(0.22)
Year Dummies	no	yes	no	no	no	no	no	yes
Country Dummies	no	yes	no	no	no	no	no	yes
Observations	216	216	216	216	216	216	216	216
Pseudo R^2	0.091	0.108	0.080	0.090	0.079	0.089	0.098	0.118
LR Chi^2	27.363***	32.458	24.006**	26.901***	23.613***	26.659***	29.252***	35.417

Table 6

Logistic Regression Results II

The table presents potential determinants of our going private transactions by means of binary logit regressions. The response variable is coded 1 for going private firms and 0 for control firms. Regressions 9 - 13 extend our analyses of Table 4 by examining the tax and bonding effect of leverage in greater detail. Regression 9 tests whether free cash flow matters mainly for mature companies as suggested by Jensen (1986). In regression 10 we include time and country dummies. In regressions 11 and 12 we employ alternative empirical specifications for testing the tax benefits hypotheses of leverage. Regression 13 adds time and country dummies to model 12. In order to test for potential multicollinearity problems, we reran model 9 without leverage. The results from our reported regressions remain unchanged. The additional regression model is available upon request.

The independent variables are defined as following: The *Herfindahl* index is derived as the sum of squared ownership percentages of all blockholders owning an equity stake equal or bigger than 5%. *AllBlocks* is calculated as the sum of all equity blockholdings. *3Blocks* is calculated as the sum of the three largest equity blockholdings. Stake1 is defined as the largest equity stake. *Management* is the sum of all stakes of the firm's executive officers. *ManagementSq* is the squared metric of Management. *Leverage* is defined as total debt divided by enterprise value (Axelson *et al.*, 2007). The level of *FreeCashFlow* is approximated by operating income before depreciation and amortization minus tax, interest and dividend payments (Lehn and Poulsen, 1989). We scale this metric with total assets. *FCF*DTobin* is an interaction term consisting of FCF and a dummy for growth prospects. The growth prospect dummy is set equal to one if Tobin's Q (defined as the market value of total assets divided by its book value, cp. Malmendier and Tate, 2008) is less than one. *Tax* measures tax payments as a percentage of operating income before depreciation and amortization. *Tax*DLev<=50* is an interaction term consisting of Tax and a dummy set to one if Leverage is below (or equal to) its median. *Tax*DLev>50* is an interaction term consisting of Tax and a dummy set equal to one if Leverage is above its median. *Tax*DLev1Quartile / Tax*DLev2Quartile / Tax*DLev3Quartile / Tax*DLev4Quartile* are interaction terms consisting of Tax and a dummy set equal to one if Leverage is in its first / second / third / fourth quartile. *Capex* represents capital expenditures divided by sales. *Performance* is defined as the ratio of the closing market price two months prior to the announcement of the private equity investment divided by the average price, measured over 250 trading days counting backwards from two months prior to the announcement. In order to exclude market movements, we divide this figure by the equivalent ratio of the DJ EUROSTOXX market index, which embraces large, middle and small capitalisation companies of 12 Eurozone countries (UK not included). *Risk* is measured by the standard deviation of daily stock returns over 250 trading days counting backwards from two months prior to the announcement of the private equity investment. The variable *Size* represents the firm's total assets.

	Model 9	**Model 10**	**Model 11**	**Model 12**	**Model 13**
AllBlocks	**0.01947**	**0.02558**	**0.02074**	**0.01987**	**0.02705**
	(2.83)***	(3.15)***	(3.06)***	(2.91)***	(3.38)***
Management	**-0.05012**	**-0.05795**	**-0.05006**	**-0.05106**	**-0.05771**
	(2.19)**	(2.30)**	(2.29)**	(2.27)**	(2.34)**
ManagementSq	**0.00059**	**0.00067**	**0.00059**	**0.00061**	**0.00070**
	(1.73)*	(1.81)*	(1.80)*	(1.83)*	(1.95)*
Leverage	**-2.33950**	**-2.76826**			
	(3.19)***	(3.46)***			
FreeCashFlow	-2.74025	-2.77260	-0.32559	-1.51215	-1.61339
	(1.03)	(0.98)	(0.14)	(0.59)	(0.58)

*FCF*DTobin<1*	**7.99696**	**9.36913**	**6.42093**	**7.47151**	**8.78350**
	(2.62)***	(2.76)***	(2.16)**	(2.41)**	(2.54)**
Tax	-0.11286	0.08974			
	(0.12)	(0.09)			
*Tax*DLev<=50*			1.40008		
			(1.29)		
*Tax*DLev>50*			-0.72057		
			(0.62)		
*Tax*DLev1Quartile*				**3.60288**	**4.62576**
				(2.17)**	(2.55)**
*Tax*DLev2Quartile*				0.59485	0.90279
				(0.46)	(0.64)
*Tax*DLev3Quartile*				1.46947	1.86241
				(0.69)	(0.82)
*Tax*DLev4Quartile*				-1.59370	-1.47222
				(1.12)	(0.97)
Capex	0.29115	0.12839	0.17102	0.48312	0.21890
	(0.42)	(0.17)	(0.26)	(0.68)	(0.28)
Performance	0.06263	0.00102	-0.01140	-0.12656	-0.13702
	(0.13)	(0.00)	(0.02)	(0.27)	(0.22)
Risk	-0.09793	-0.06710	-0.09666	-0.10261	-0.09166
	(0.65)	(0.40)	(0.67)	(0.71)	(0.56)
Size	0.00023	**0.00033**	0.00025	0.00026	**0.00036**
	(1.34)	(1.81)*	(1.45)	(1.54)	(1.98)**
Constant	-0.14196	0.15295	-1.15234	-1.09121	-1.00412
	(0.17)	(0.07)	(1.49)	(1.40)	(0.44)
Year Dummies	no	yes	no	no	yes
Country Dummies	no	yes	no	no	yes
Observations	216	216	216	216	216
Pseudo R^2	0.122	0.146	0.092	0.107	0.129
LR Chi^2	36.622***	43.680	27.451***	31.993***	38.650

Table 7

Correlations

This table contains Spearman rank correlation coefficients for the variables included in our regression models.

N = 216	*Herfindahl*	*3Blocks*	*AllBlocks*	*Stake1*	*Stake2*	*Manage-ment*	*Manage-mentSq*	*Leverage*	*FreeCashFlow*	*FCF*D Tobin<1*	*Tax*	*Tax*DLev<=50*	*Tax*DLev>50*	*Tax*Dlev1Quartile*	*Tax*Dlev2Quartile*	*Tax*Dlev3Quartile*	*Tax*Dlev4Quartile*	*Capex*	*Perfor-mance*	*Risk*	*Size*
Herfindahl	1.00																				
3Blocks	0.95	1.00																			
AllBlocks	0.88	0.95	1.00																		
Stake1	0.99	0.91	0.82	1.00																	
Stake2	-0.08	0.16	0.23	-0.17	1.00																
Management	0.16	0.13	0.12	0.16	0.02	1.00															
ManagementSq	0.16	0.13	0.12	0.16	0.02	1.00	1.00														
Leverage	-0.15	-0.13	-0.14	-0.15	0.02	-0.06	-0.06	1.00													
FreeCashFlow	0.06	0.05	0.09	0.06	-0.02	0.02	0.02	-0.38	1.00												
*FCF*DTobin<1*	0.00	-0.01	-0.02	0.02	0.01	-0.04	-0.04	0.23	0.23	1.00											
Tax	0.07	0.06	0.06	0.07	-0.03	0.12	0.12	-0.38	0.24	-0.14	1.00										
*Tax*DLev<=50*	0.11	0.07	0.07	0.11	-0.07	0.13	0.13	-0.80	0.25	-0.30	0.60	1.00									
*Tax*DLev>50*	-0.10	-0.08	-0.06	-0.10	0.06	-0.10	-0.10	0.50	0.04	0.34	0.18	-0.59	1.00								
*Tax*DLev1Quartile*	0.11	0.10	0.09	0.11	-0.04	-0.01	-0.01	-0.74	0.28	-0.27	0.35	0.62	-0.37	1.00							
*Tax*DLev2Quartile*	0.00	-0.02	-0.01	0.01	-0.03	0.13	0.13	-0.23	0.01	-0.06	0.24	0.53	-0.35	-0.31	1.00						
*Tax*DLev3Quartile*	-0.04	-0.03	-0.01	-0.04	0.06	-0.11	-0.11	0.20	0.16	0.32	0.07	-0.43	0.67	-0.27	-0.26	1.00					
*Tax*DLev4Quartile*	-0.09	-0.08	-0.07	-0.09	0.02	-0.03	-0.03	0.40	-0.07	0.15	0.11	-0.29	0.61	-0.18	-0.18	-0.15	1.00				
Capex	-0.03	-0.04	-0.04	-0.02	-0.03	-0.07	-0.07	0.08	0.17	0.14	-0.04	-0.12	0.16	-0.13	0.00	0.11	0.11	1.00			
Performance	0.07	0.10	0.12	0.07	0.10	0.00	0.00	-0.09	0.24	0.10	0.03	0.06	-0.07	0.08	-0.03	0.02	-0.11	0.01	1.00		
Risk	0.07	0.05	0.01	0.08	-0.15	0.03	0.03	0.15	-0.14	0.01	-0.05	-0.13	0.03	-0.07	-0.10	-0.04	0.04	-0.08	-0.15	1.00	
Size	-0.17	-0.15	-0.13	-0.16	0.09	-0.15	-0.15	0.12	-0.06	0.10	-0.14	-0.18	0.17	-0.17	-0.02	0.11	0.13	0.22	0.13	-0.27	1.00

The *Herfindahl* index is derived as the sum of squared ownership percentages of all blockholders owning an equity stake equal or bigger than 5%. *AllBlocks* is calculated as the sum of all equity blockholdings. *3Blocks* is calculated as the sum of the three largest equity blockholdings. Stake1 is defined as the largest equity stake. *Stake2* is defined as the second largest equity stake. *Management* is the sum of all stakes of the firm's executive officers. *ManagementSq* is the squared metric of Management. *Leverage* is defined as total debt divided by enterprise value (Axelson *et al.*, 2007). The level of *FreeCashFlow* is approximated by operating income before depreciation and amortization minus tax, interest and dividend payments (Lehn and Poulsen, 1989). We scale this metric with total assets. *FCF*DTobin* is an interaction term consisting of FCF and a dummy for growth prospects. The growth prospect dummy is set to one if Tobin's Q (defined as the market value of total assets divided by its book value, cp. Malmendier and Tate, 2008) is less than one. *Tax* measures tax payments as a percentage of operating income before depreciation and amortization. *Tax*DLev<=50* is an interaction term consisting of Tax and a dummy set to one if Leverage is below (or equal to) its median. *Tax*DLev>50* is an interaction term consisting of Tax and a dummy set to one if Leverage is above its median. *Tax*DLev1Quartile / Tax*DLev2Quartile / Tax*DLev3Quartile / Tax*DLev4Quartile* are interaction terms consisting of Tax and a dummy set to one if Leverage is in its first / second / third / fourth quartile. *Capex* represents capital expenditures divided by sales. *Performance* is defined as the ratio of the closing market price two months prior to the announcement of the private equity investment divided by the average price, measured over 250 trading days counting backwards from two months prior to the announcement. In order to exclude market movements, we divide this figure by the equivalent ratio of the DJ EUROSTOXX market index, which embraces large, middle and small capitalisation companies of 12 Eurozone countries (UK not included). *Risk* is measured as standard deviation of daily stock returns over 250 trading days counting backwards from two months prior to the announcement of the private equity investment. The variable *Size* represents the firm's total assets.