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Takeovers and Private Equity Investors

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LIST OF ABBREVIATIONS

A_B	Agency costs of debt
AD	Announcement date
ADV	Adjusted compressed present value
AIFM	Alternative Investment Fund Manager
A_S	Agency cost of outside equity
A_T	Total agency costs
BHAR	Buy and hold abnormal return
BIMBO	Buyin management buyout
BVDA	Bureau Van Dijk Amadeus
C	Combined entity
CAPEX	Capital expenditure
CAPM	Capital asset pricing model
CAR	Cumulative abnormal returns
CEFS	Center for Entrepreneurial and Financial Studies
CF	Cash flow
CFR	Cash flow rights
CG	Corporate governance
CPI	Consumer price index
CRSP	Center for Research in Security Prices
DEBT	Long-term debt
DEP	Depreciation
DJ	Dow Jones
EBIT	Earnings before interest and tax
EBITDA	Earnings before interest, taxes, depreciation and amortization
EBO	Employee buyout
EPS	Earnings per share
EV	Enterprise value
FCF	Free cash flow

FY	Fiscal year
GP	General partner
H	Hypothesis
IBES	Institutional Brokers' Estimate System
IBO	Institutional buyout
INS	Insignificant
IRR	Internal rate of return
IT	Information technology
K	Cost of capital
K0	Low outside financing
K1	High outside financing
LBO	Leveraged buyout
LIBOR	London Interbank Offered Rate
LP	Limited partner
LR Chi2	Likelihood ratio chi-square test
Max.	Maximum
MBI	Management buyin
MBO	Management buyout
Med.	Median
Min.	Minimum
No.	Number
OBO	Owner buyout
OLS	Ordinary least square
OM	Operating margin
P	Offer price
PE	Private equity
PME	Public market equivalent
PV	Present value
PwC	PricewaterhouseCoopers
REIT	Real estate investment trust
S	Sales

SB	Stand-alone bidder
SDC	Securities Data Company
SEC	Securities and Exchange Commission
SPAC	Special purpose acquisition company
ST	Stand-alone target
St.Dev.	Standard deviation
T	Income tax rate
TV	Terminal value
UK	United Kingdom
US	United States (of America)
V*	Firm value
VIF	Variance inflation factor
VL	Value Line
VR	Voting rights
WC	Working capital
X	Post-takeover value of the firm
*	Statistical significance at the 10% level
**	Statistical significance at the 5% level
***	Statistical significance at the 1% level

1 Introduction

1.1 Relevance and objectives

Takeovers[1] are economic phenomena which represent one of the most incisive events during the life cycle of any firm.[2] Their execution bears enormous chances and risks, not only to directly involved owners and capital providers but also to the firm's remaining constituencies such as workers, customers, suppliers and competitors.[3] This high relevance of takeovers is further underlined by the sheer size of the market for corporate control. Estimates from the last takeover wave suggest that the global aggregated transaction value ranges from a sizeable $1.2 trillion in calm years (2002) to a staggering $4.2 trillion in highly active years (2007).[4] These values represent remarkable 3.7% and 11.5% in terms of worldwide gross domestic product (GDP).[5] Consequently, the takeover market represents one, if not the largest corporate market.

A central driver behind the last takeover wave was the resurgence of private equity investors[6] alongside traditional strategic investors. Private equity investors' market presence in terms of competing bids rose to a staggering 36% at the peak of their activity in 2006 compared to 14% at the bottom of their activity in 2001.[7] Similarly, in terms of completed deals, private equity investors captured 21% of the tremendous aggregate takeover volume at the wave's peak compared to 5% of the relatively

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[1] In line with Betton/Eckbo/Thorburn (2008), p. 1, this dissertation uses the term "takeover" for any transaction irrespective of whether the transaction is conducted as a merger when the prospective buyer negotiates with target management or as a tender offer when the bid is made directly towards the shareholders.

[2] Cf. Betton/Eckbo/Thorburn (2008), p. 1.

[3] Cf. Sudarsanam (2010), p. 1.

[4] Cf. ThomsonReuters/JPMorgan (2009), p. 8, values are inferred from graphs. Thus far, history has seen the takeover tide rising and falling six times: in the 1900s, the 1920s, the 1960s, the 1980s, the 1990s and the 2000s. Cf. Davidoff (2009) for a detailed description of each of these waves.

[5] Cf. ThomsonReuters/JPMorgan (2009), p. 8, values are inferred from graphs.

[6] PE investors are specialized investment firms who finance transactions with small equity portions and large debt fractions borrowed against the targets' assets and cash flows prospects. Consequently, these transactions are referred to as leveraged buyouts (LBOs). For more comprehensive definitions and a discussion of the private equity business model, see section 2.3.

[7] Cf. Dittmar/Li/Nain (2010), p. 34.

modest volume at the wave's bottom.[8] The high significance of these statistics and thus of the private equity industry itself becomes more tangible when looking at absolute values. It is estimated that over the last buyout wave cycle (January 2001 to July 2007) 13,482 leveraged buyouts (LBOs) resulted in an aggregate deal volume of $2.7 trillion.[9] These numbers amount to 63% and 68%, respectively, of the total private equity activity recorded since 1970.[10] The last wave was also characterized by the extension of the buyout market in terms of geographical scope. Private equity activity in the United States (US) was even slightly overtaken by Europe, a result which originates mainly from the sharp rise of these activities in continental Europe.[11] In particular, the US accounted for 45.2% of aggregate deal volume compared to 46.1% for Europe.[12] Continental Europe contributed two thirds to the European share, that is, 30.6%[13] of the aggregate volume which is particularly remarkable when compared to its mere 3%[14] equivalent during the first buyout wave.

Although LBOs took a swift downturn with the systemic financial crises, it seems rather likely that private equity is here to stay. Indeed, since the first quarter of 2009 LBO activity has shown signs of recovery: both aggregate deal values and numbers have steadily, albeit slowly, increased.[15] This upturn is expected to persist if not accelerate since the industry has a breath taking $500 billion in capital committed by investors ready to be invested in LBOs.[16] As debt markets show clear signs of

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[8] Cf. ThomsonReuters/JPMorgan (2009), p. 11, values are inferred from graphs.

[9] Cf. Strömberg (2007), p. 30.

[10] Cf. Strömberg (2007), p. 30.

[11] Cf. World Economic Forum (2008), p. 7 of executive summary.

[12] Cf. Strömberg (2007), p. 31. The figures refer to the period 2001 to 2007.

[13] Cf. Strömberg (2007), p. 31. The figures refer to the period 2001 to 2007.

[14] Cf. Kaplan/Strömberg (2009), p. 127. The figure refers to the period 1985 to 1989.

[15] Cf. Preqin research report January 2011, p. 1, see
http://www.preqin.com/docs/reports/2010dealstats.pdf, last accessed on March 29 2011.

[16] Cf. Bain report March 2011, p. 2, see
http://www.bain.com/bainweb/PDFs/Bain_and_Company_Global_PE_Report_2011.pdf, last accessed on April 15 2011.

improved liquidity,[17] a conservative estimate based on a 2/1 debt/equity ratio and discarding new funds suggests a deal activity of $1.5 trillion in the next few years.

Given the dramatic surge and increased relevance of private equity in the last boom period and its likely persistent economic significance, the industry has naturally attracted increased public attention. The respective debates comprehend a wide range of topics[18] but have one thing in common: they clearly illustrate the strong need for rigorous, unbiased research on the workings of private equity upon which well-grounded decisions can be made.

Although recent academic work has advanced our understanding of the private equity asset class in general and LBOs in particular,[19] high quality research is still rather in its infancy and much more needs to be learned. Partly, this situation originates from the notorious secrecy of the private equity industry. The respective dearth of comprehensive and reliable data has impeded the ability to draw clear pictures of even basic issues such as the risk return profile of the asset class. Recent initiatives by private equity associations themselves,[20] regulators,[21] commercial data providers[22] and academics[23] alike are promising steps towards mitigating this dearth of essential data for private equity research.

Nonetheless, there are slices of data available which can help to advance our knowledge of PE. At the transaction level, LBOs of publicly listed companies provide

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[17] Cf. Bain report March 2011, p. 2, see http://www.bain.com/bainweb/PDFs/Bain_and_Company_Global_PE_Report_2011.pdf, last accessed on April 15 2011.

[18] For instance, in terms of recent regulatory developments and discussions concerning the private equity industry see the Alternative Investment Fund Manager's Directive (AIFMD), the Dodd Frank Act and the Securities and Exchange Commission (SEC) registration rules and the change of the United Kingdom (UK) Takeover Code, amongst others.

[19] Cf. Kaplan/Strömberg (2009) for a recent literature review on the research about private equity and LBOs.

[20] Cf. for instance the Walker report.

[21] Cf. for instance the Alternative Investment Fund Manager's (AIFM) Directive.

[22] Cf. for instance Preqin.

[23] Cf. for instance initiatives at the Oxford Private Equity Institute and the Center for Entrepreneurial and Financial Studies (CEFS) at Technische Unversität München.

access to rich data due to the comprehensive disclosure requirements of stock exchanges.[24] Such transactions of large targets are mainly encountered during boom periods when they typically contribute the lion's share to aggregate deal volumes as evidenced during the first (second) buyout wave with 49% (34%).[25] This thesis draws on these transactions to address *three largely unanswered research questions* at the investment stage of the LBO process, i.e. the selection of targets and their pricing. These questions are derived from *two key motivations* as will become clear in the following.

The *first key motivation* originates from the previously mentioned fact that private equity has become an international phenomenon during the last buyout wave. Indeed, the European private equity market has grown slightly larger than its US counterpart in terms of transaction volume and number due to the strong growth of continental Europe.[26] Anecdotal evidence suggests that continental Europe is likely to play a continued strong role in the development of the private equity market. For instance, in a recent survey among international private equity fund managers by PricewaterhouseCoopers (PwC), the majority of the managers explicitly stated that their funds "view Western Europe as most attractive for future investment".[27]

Yet, the majority of research so far has focused on the US markets.[28] And there are plentiful essential reasons to assume that the results from the US markets may not be transferable to regions such as continental Europe.[29] In particular, the law and finance literature has stressed the significance of corporate governance (CG) differences across financial systems and their impact upon the financing and control of corporations. For

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[24] Clearly, the advantage of comprehensive and sharp market data stands vis-à-vis the drawback that such transactions represent a specific buyout type. Hence, the motives behind them may not be fully congruent with the ones of alternative buyout types.

[25] Cf. Kaplan/Strömberg (2009), p. 127. The large size of the public targets implies that such buyouts occur less frequently than buyouts of private companies.

[26] Cf. World Economic Forum (2008), p. 7 of executive summary.

[27] Cf. Scholich/Burton (2010), p. 9.

[28] Cf. for instance Renneboog/Simons/Wright (2007) who state "Hardly anything is known about the continental European private equity market" (Renneboog/Simons/Wright (2007), p. 620).

[29] Cf. section 3.1 and 4.1 for a discussion of these reasons.

this reason, a detailed examination of LBO acquisitions in the distinctive continental European context is both required and compelling. Consequently, this thesis responds to the increased relevance of LBOs in continental Europe and the respective lack of rigorous scientific evidence by addressing the following two questions:

1. *What are the investment motives of private equity investors in the distinctive continental European context?*
2. *How much do private equity investors pay for continental European firms?*

These questions will be answered with a self-collected dataset of all LBOs of public continental European companies completed between 1997 and 2007 for which the required data points are available. Notably, the research object of publicly listed continental European target companies unifies two characteristics which are usually encountered only separately: market prices and concentrated ownership. This combination confers a neat advantage for addressing the second question. Sharp pricing measures can be constructed for the public targets in contrast to private targets but the former still resemble the latter closely in terms of ownership. In a nutshell: public targets represent an interesting research object towards understanding LBO pricing in the continental European context.

The *second key motivation* arises from the previously stressed fact that private equity investors re-emerged in the last buyout wave as a vigorous competitor against traditional strategic investors on the market for corporate control. Private equity investors launched 36% of all competing bids[30] and closed 21% of the aggregate industry deal volume.[31] Despite this highly interesting competition pattern between the two investor types across market cycles, there is actually very little systematic research which directly opposes and compares these two basic protagonists who act upon the same market. One exception is Bargeron et al. (2008) who provide evidence that public (and thus predominantly operational) investors pay significantly higher takeover premiums than private equity investors. This gap amounts up to a remarkable 63% under standard calculus assumptions. However, they face difficulties in

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[30] Cf. Dittmar/Li/Nain (2010), p. 34.

[31] Cf. ThomsonReuters/JPMorgan (2009), p. 11, the value is inferred from graph 4.6.

empirically unfolding the sources and stress that more research is needed to resolve this crucial issue.[32] Not surprisingly, the aforementioned result has reinforced critical voices towards private equity investors by the public. An often raised argument concerns potential collusion with target managers to the detriment of the company vendors.[33] There is, however, an alternative argument which should be of central importance: that of expected operational synergies on behalf of strategic investors. This is an intuitive and important argument but its estimation is notoriously difficult, a task which this thesis tackles.

Consequently, given the controversy about the underlying sources of the pricing differential between strategic and financial takeovers and the lack of respective research, this thesis addresses the following question:

3. *Why do strategic investors pay so much more compared to private equity investors?*

This question will be answered based on a dataset of all takeovers involving US public companies as targets and US public companies or private equity investors as bidders, completed between 1987 and 2009.

1.2 Structure of analysis

This dissertation is comprised of six chapters. Chapter 1 introduces the motivation, research questions and structure of the thesis.

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[32] They argue that agency costs on behalf of public acquirers may play an important role since the premium differential declines with increasing managerial ownership. However, they also find that the premium differential does not vary with institutional ownership, a result which casts doubt on the agency argument since institutional investors are commonly assumed to act as monitors who curtail managerial misbehaviour.

[33] More precisely: managers of buyout targets are potentially facing severe conflict of interests when negotiating with the bidder. On the one hand, they have the obligation to bargain fiercely with the private equity bidder in order to obtain the optimal price for their shareholders. On the other hand, they may be offered high-powered incentive contracts by the private equity investor which are tied to their firm's value. Hence, they may have a personal incentive to agree to suboptimal takeover prices to the detriment of their shareholders in order to maximize their own personal benefit. For recent anecdotal evidence see for instance the buyout of J. Crew as described in the New York Times article "What's Next for J. Crew", http://dealbook.nytimes.com/2011/03/02/whats-next-for-j-crew/, last accessed on April 18 2011.

Chapter 2 constructs the framework which the three subsequent empirical chapters will be built upon. Section 2.1 introduces agency theory and corporate governance as the central tenets of this thesis. With respect to the latter tenet, its definition is followed by a systematic overview of the governance mechanisms available to mitigate the classical manager-financier agency conflict. Further, it is presented how these individual governance mechanisms interact in the two dominant corporate governance systems, the continental European and Anglo-Saxon model. This is of interest since the first and second research questions will examine LBOs in the continental European environment while the third research question will focus on LBOs in the US setting. Section 2.2 discusses takeovers as the governance mechanism which is in the focus of this thesis. The literature is reviewed on whether takeovers confer efficiency gains. Further, it is assessed how the ownership structure affects takeovers. Thereby, the framework for the empirical analyses is sharpened which will focus on LBOs in continental Europe where targets are closely held (chapter 3 and 4) and the US where targets are widely held (chapter 5). Section 2.3 outlays the private equity model and related academic evidence with an emphasis on the investment phase. Thereby, the focus is narrowed down to the very research object of this study, takeovers through private equity investors, i.e. LBOs.

Chapter 3 presents the first empirical study of this thesis. It focuses on the selection stage of the takeover process and addresses the first research question raised in the previous section: what are the investment motives of private equity investors in the distinctive continental European context? As ownership in continental Europe tends to be highly concentrated, it is argued that the incentives of the incumbent large shareholder to monitor the management and the private benefits of control he/she may derive from the firm are important investment considerations for the private equity investor. When measuring the likelihood of a private equity acquisition, there is strong and consistent evidence that both rationales have a significant negative impact. This pattern is predominantly driven by firms whose ultimate controlling shareholder is a family.

Chapter 4 is comprised of the second empirical study of this thesis. It concentrates on the bidding stage of the takeover process and analyses the second research question raised in the previous section: how much do private equity investors pay for continental European firms? The evidence shows that private equity investors pay a final mean premium of 28.3% and that shareholders gain abnormal returns of 13.0% around the announcement (event day -1 to +1 ([-1,+1])) . These values are 3.0 and 7.7 percentage points, respectively, lower than for comparable US transactions. In line with the previous chapter, it is argued that the distinctive ownership pattern of continental European firms plays a crucial role in explaining the effects. Indeed, the regression results lend strong support towards the following view: that both sharp monitoring incentives of blockholders for curtailing managerial misbehaviour and the restriction of their own private benefits consumption due to peer cross-monitoring confers lower premiums and abnormal returns.

Chapter 5 contains the third empirical study of this thesis. It focuses equally on the bidding stage of the takeover process and examines the third research question raised in the previous section: why do strategic investors pay so much more compared to private equity investors? This chapter first revisits the pricing differential. In addition to traditional equity premium measures, the chapter tests novel enterprise premium measures as suggested by Jenkinson/Stucke (2010). The enterprise premium estimates are of similar or even larger magnitude (depending on the calculation approach) than the equity premium estimates. Hence, the pricing differential is not grounded in the premium calculation approach. With respect to the sources, it is argued that a central reason behind the premium differential is expected operational synergies on behalf of strategic takeovers, a factor that has been traditionally very hard to grasp empirically. Exploiting analyst revisions around the takeover, the chapter calculates a conservative operational synergy estimate largely free of standalone restructuring potential to be approximately three times the size of the premium's dollar value. Further, controlling for operational synergies in a cross-sectional setting renders the premium differential insignificant. These results underline the decisive role of expected operational synergies in explaining the premium differential.

Chapter 6 concludes the thesis. It summarizes the results and contributions and provides avenues for future research.

2 Background

This chapter provides the basis on which the three empirical chapters will be built upon. Section 2.1 introduces agency theory and corporate governance as central tenets underlying the private equity model. Section 2.2 discusses takeovers as an important governance mechanism. Section 2.3 presents the private equity model with a special focus on the investment phase, i.e. takeovers through private equity investors which are commonly referred to as leveraged buyouts (LBOs).

2.1 Agency theory and corporate governance

This section introduces agency theory and corporate governance following Becht et al. (2005), Gillan (2006), Tirole (2006) and Moldenhauer (2007). These concepts represent the central theoretical tenets underlying the private equity model. Section 2.1.1 defines the concept of agency costs and shows how it is related to the ownership and capital structure of the firm. Section 2.1.2 defines corporate governance, outlines the mechanisms available to mitigate the agency conflict between investors and managers and presents how these interact in the two dominant corporate governance systems, the Anglo-Saxon and the continental European model.

2.1.1 Principal agent relationships and costs

> *"The directors of such [joint-stock] companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company." Adam Smith[34]*

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[34] Cf. Smith ([1994]1937), p. 700 according to Jensen/Meckling (1976), p. 305.

In his seminal work "An inquiry into the nature and causes of the wealth of nations" of 1776, Adam Smith already pointed towards the special problems arising in an agency, the delegation of work from one party (the principal) to another one (the agent). It was not before 200 years when this important notion was formally integrated into rigorous economic analysis by Ross (1973) and Jensen/Meckling (1976).[35] It became known as principal agent theory and established itself as one of the dominant tenets of the financial economics literature.

In contrast to the neoclassical view of firms as (simple) production functions, agency theory as a representative of the institutional perspective considers firms as an aggregate of economic agents with individual interests.[36] Firms are interpreted as "legal fictions" that serve as nexuses for contractual relationships between individual economic agents.[37] In this context, an agency relationship (or principal agent relationship) is defined as a contract under which one party, designated as the principal, engages another party, designated as the agent, to execute some task on their behalf and therefore assigns decision making authority.[38]

These relationships entail costs if the following two key assumptions are met. First, both the principal and agent behave as homo oeconomicus, i.e. they maximize their own personal utility which entails a conflict of interest.[39] Second, information asymmetries between the principal and agent: *adverse selection* relates to asymmetric information before the contract is closed, i.e. the party with more information is induced to behave opportunistically before an agreement is reached.[40] *Moral hazard* refers to information asymmetries after the contract is closed which motivates the party with more information to behave opportunistically after contract conclusion.[41]

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[35] It builds on property rights elements from Coase (1937).

[36] Cf. Rudolph (2006), p. 119.

[37] Cf. Jensen/Meckling (1976), pp. 310-311.

[38] Cf. Jensen/Meckling (1976), pp. 308.

[39] Cf. Jensen/Meckling (1976), pp. 308.

[40] Cf. Leland/Pyle (1977).

[41] Cf. Akerlof (1970). Moral hazard can be further systematized into hidden information and hidden action. Cf. Furubotn/Pejovich (1972), p. 196.

Jensen/Meckling (1976) analyse agency relationships between owner managers (agents) and outside financiers (principals), thereby delivering a formal analysis of the problems arising from the separation of ownership and control as first noted by Smith, Adam ([1994]1937) and substantiated by Berle/Means (1932). Under the outlined key assumptions, the firm incurs agency costs which can be systematized into three components:

- *Monitoring and incentivation costs: The expenses incurred by the principal for monitoring and incentivizing the agent not to take opportunistic actions.* [42]

- *Bonding costs: The costs incurred by the agent in order to signal the principal the quality of her/his actions.*

- *Residual loss: The loss due to remaining divergence of interest between the principal and agent after the optimal amount of monitoring and bonding has been incurred.*

Based on these agency costs, the authors develop a theory of the ownership and capital structure of the firm. As a starting point of their analysis, they use the case of an entrepreneurial firm which is held completely by the owner manager. Agency costs arise when the owner manager sells residual claims to outside financiers, i.e. to outside equity and debt providers:[43]

- *Agency cost of outside equity:* The owner manager maximizes her/his utility by consuming both pecuniary returns and non-pecuniary returns.[44] At the starting point of 100% ownership by the owner manager, the consumption of non-pecuniary returns by the manager is mirrored in an equal decrease of firm value. As soon as the firm raises outside equity, parts of the respective decrease in firm value are transferred to the outside equity holders. The owner manager

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[42] Jensen/Meckling (1976) denote these costs solely "monitoring costs" but mention in footnote 9 on page 308 that it includes the costs arising from incentivation.

[43] Cf. Junker (2005), p. 37.

[44] Jensen/Meckling (1976) mention as examples for non-pecuniary benefits "[…]the physical appointments of the office, the attractiveness of the secretarial staff, the level of employee discipline, the kind and amount of charitable contributions, personal relations ("love", "respect", etc.) with employees, a larger than optimal computer to play with, purchase of production inputs from friends, etc." (Jensen/Meckling (1976), p. 312).

does not bear the full costs anymore and thus over-consumes non-pecuniary returns resulting in agency costs. Consequently, the more outside equity is raised, the higher are the agency costs of equity.

- *Agency costs of debt:* In principle, the agency costs of outside equity could be avoided if one substitutes the outside equity for debt. However, debt incurs agency costs as well. In case debt is taken on, the manager owner is likely to engage in asset substitution, i.e. in actions to increase their payoff at the cost of debt holders.[45] Black/Scholes (1973) show that owning equity in the firm can be interpreted as a European call option on the value of the firm with an exercise price equal to the face value of debt. Put differently, the equity holders have the right to buy the firm back at the expiration date for the face value of debt. Since the value of the option rises with the variance of the underlying, the manager is induced to engage in higher risk investments leading to agency costs of debt. The more debt is raised, the higher are the agency costs of debt.

These mechanisms are exemplified in Figure 2-1. Function A_B shows agency costs of debt, A_S agency cost of outside equity and A_T total agency costs. All three functions are drawn for two different amounts of outside financing K_1 and K_0 ($K_1 > K_0$) while the value of the firm V* is held constant.

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[45] Cf. Jensen/Meckling (1976), p. 345-350. Further problems may be underinvestment as described by Myers (1977) and claim dilution as described by Smith/Warner (1979).
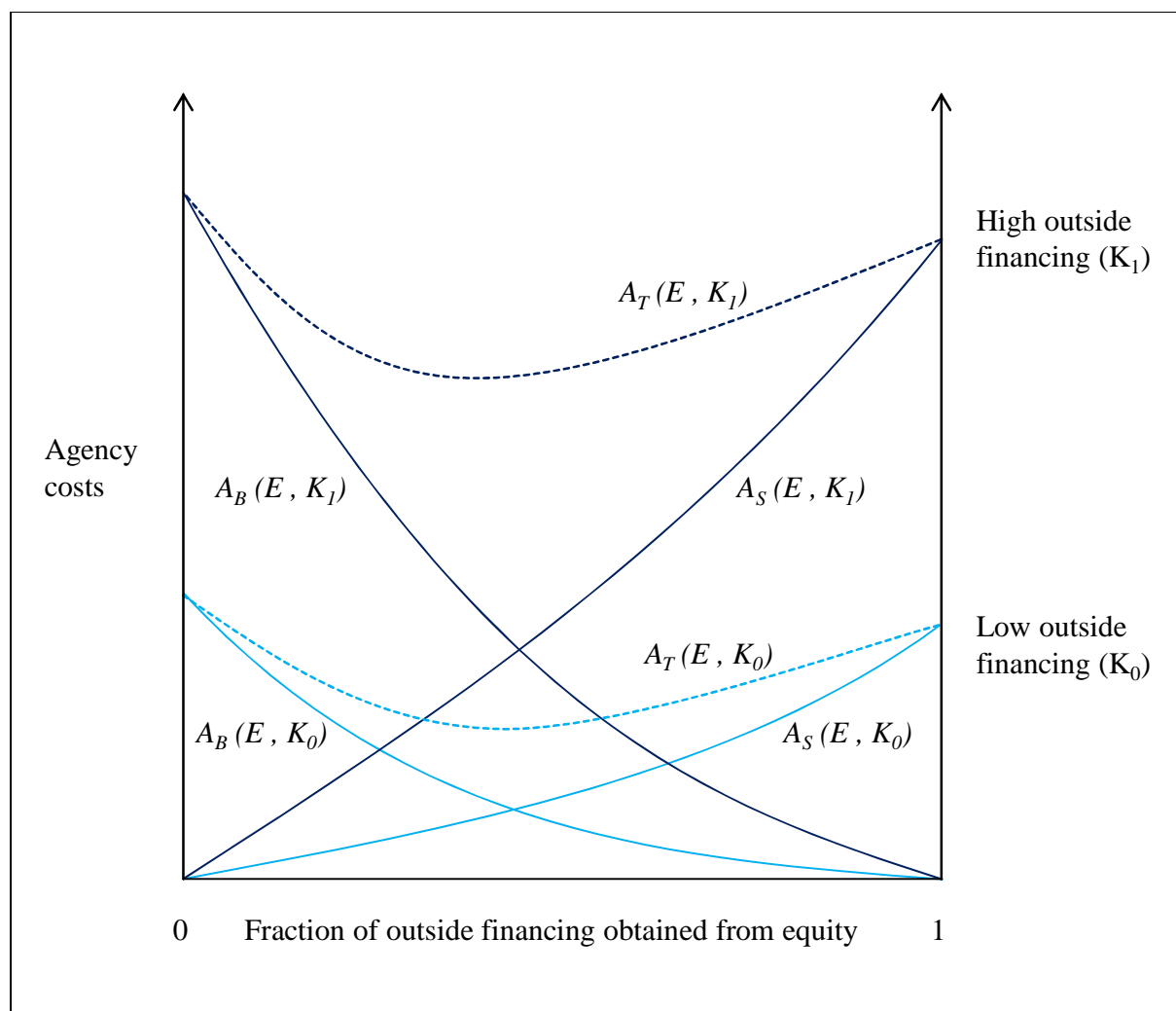
Figure 2-1:   Agency cost functions for different levels of outside financing
Source: Jensen/Meckling (1976), p. 363.

First, focusing on the three agency cost curves with respect to the level of outside financing K_1, one can see the aforementioned, intuitive relationship that agency costs of outside equity (debt) increase (decrease) with the proportion of outside equity to external financing. Agency costs of outside equity (debt) show a marginally increasing (decreasing) form. Consequently, there is an optimal mix of debt and outside equity which minimizes total agency costs. Second, the figure shows what happens if outside financing relative to inside financing is decreased, i.e. K_1 decreases to K_0 (but the value of the firm V* is kept constant). This leads to an overall decline of agency costs A_T which is caused by both agency costs of outside equity A_S and agency cost of debt A_B. Consequently, if manager-owners are incentivized with larger ownership stakes, agency costs are lower.

Both points lie at the heart of the private equity model (Jensen (1986), Jensen (1989)) as will become evident in the remainder of this chapter.

2.1.2 Corporate governance

Section 2.1.2.1 defines the term corporate governance and thereby establishes the ties to the previous chapter. Section 2.1.2.2 gives a systematic overview of the governance mechanism available to mitigate the classical principal agent conflict between investors and managers. Finally, section 2.1.2.3 presents how these mechanisms interact in the two dominant corporate governance systems, the Anglo-Saxon and the continental European model.

2.1.2.1 Definition

Corporate governance is a widely used term in almost any discipline of the social sciences. Consequently, there exists no unified definition; corporate governance is subject to a wide range of understandings. From an economist's perspective, a rather broad view of corporate governance is provided by the OECD (2004):

> *"Corporate governance is one key element in improving economic efficiency and growth as well as enhancing investor confidence. Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. [...] The presence of an effective corporate governance system, within an individual company and across an economy as a whole, helps to provide a degree of confidence that is necessary for the proper functioning of a market economy. As a result, the cost of capital is lower and firms are encouraged to use resources more efficiently, thereby underpinning growth."[46]*

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[46] Cf. OECD (2004), p. 11.

Hence, this definition stresses the systemic character of corporate governance in promoting the development of a strong market economy. A narrower definition of corporate governance has been articulated by Shleifer/Vishny (1997).

> *"Corporate Governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment."[47]*

This definition departs from the agency problems encountered in modern corporations as outlined in section 2.1.1 (Smith ([1994]1937), Berle/Means (1932), Jensen/Meckling (1976)). It focuses on the costs imposed by the separation of ownership and control, that is, the costs arising from conflict of interests between corporate managers and financiers. Consequently, this definition embeds the term corporate governance into a corporate finance framework and therefore represents the primary reference point for this dissertation unless otherwise specified.

2.1.2.2 Corporate governance mechanisms

How do investors get managers to give them their money back? The literature usually categorizes the respective measures into internal and external governance mechanisms as outlined in Figure 2-2.[48] These measures are framed by the underlying legal system: it shapes the specific design and effectiveness of the individual mechanisms and, in turn, their interdependencies.[49] This section systematically introduces the individual governance mechanisms. The next section presents how they interact in the two dominant corporate governance systems, the Anglo-Saxon and the continental European model.

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[47] Shleifer/Vishny (1997), p. 737.

[48] Cf. Jensen (1993), p. 850, Weston/Siu/Johnson (2001), pp. 598-615, Gillan (2006), pp. 382-384 and Moldenhauer (2007), pp. 17-22.

[49] Cf. Shleifer/Vishny (1997), p. 739; Gillan (2006), p. 383.
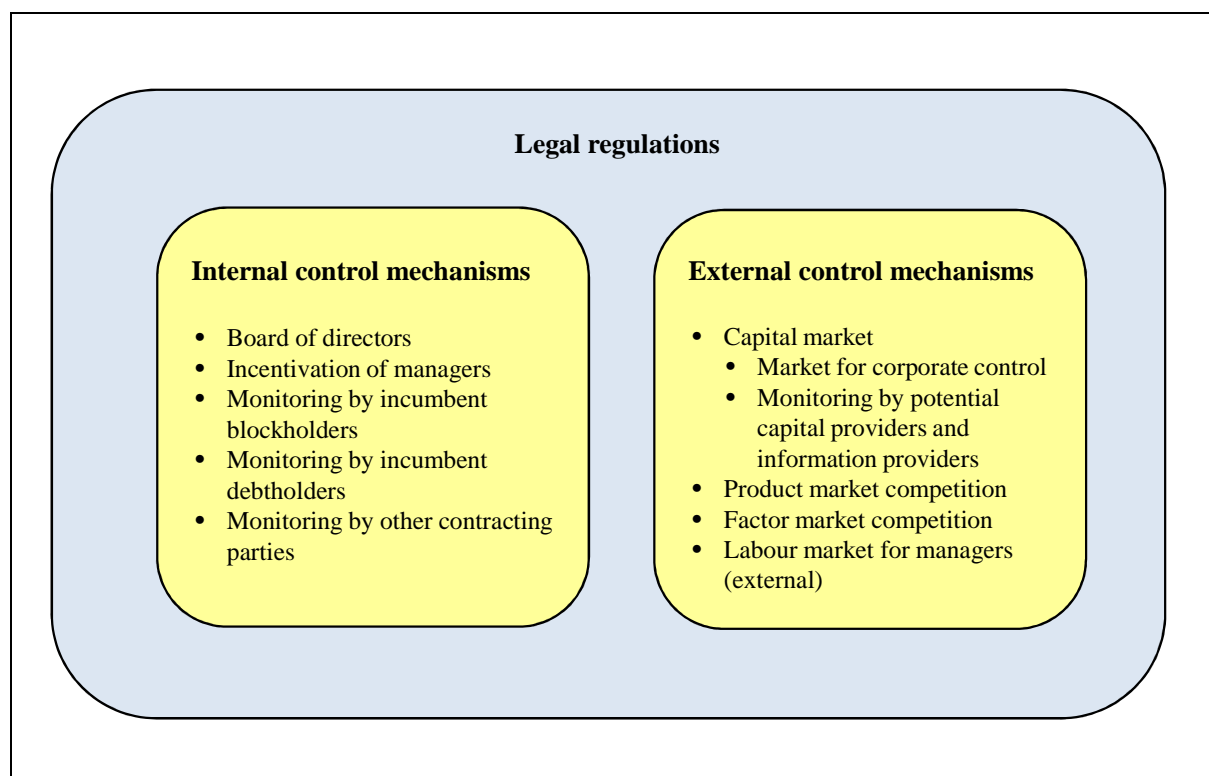
Figure 2-2:   Overview of corporate governance mechanisms
Source: Author's illustration following Jensen (1993), p. 850, Weston et al. (2001), pp. 598-615, Bott
                (2002), pp. 3-4, Gillan (2006), pp. 382-384 and Moldenhauer (2007), pp. 17-22.

With regard to the *internal governance mechanisms*, a primary role is often assigned to the *board of directors*, or in the case of two-tier boards, to the supervisory board.[50] Appointed by the shareholders, the board has a fiduciary duty to monitor the management. Their responsibilities span from evaluating central corporate decisions such as divestments, acquisitions or tender offers by potential acquirers to overseeing compensation, risk management and audits, amongst others.[51] Research on boards focuses mainly on their structure and the compensation of their members.[52] With regard to the board structure, much work has examined the effects of board size and directors (lack of) independence from management on firm value.[53] With regard to

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[50] Cf. Gillan (2006), p. 385 and Tirole (2006), p. 29.

[51] Cf. Tirole (2006), pp. 29-30.

[52] Cf. Moldenhauer (2007), p. 19.

[53] Research on the independence of directors is naturally constrained to one-tier board systems since in two-tier board systems, such as Germany, only outsiders are eligible to join the supervisory board. For work examining the costs and benefits of director independence see Fama (1980), Hermalin/Weisbach (1988), Rosenstein/Wyatt (1990), Barnhart/Marr/Rosenstein (1984),

compensation, structuring an efficient compensation system including performance-based components has been in the focus of interest.[54] While from a theoretical point of view, one would expect the board of directors to represent a rather effective governance mechanism due to its legal obligation towards shareholders, the more common perception is that boards are rather "[…] ineffective rubber-stampers controlled by, rather than controlling, management."[55]

Incentivation of the management board represents a complementary, more direct governance lever. Its objective is to discourage managerial malpractice ex-ante. While this idea sounds straightforward, structuring adequate compensation is not. The typical compensation package constitutes a fixed salary, a bonus based on short term accounting performance and a stock-based participation plan in the form of straight stocks and options. The latter two components are supposed to induce managers to internalize shareholder's interests. This notion has received academic evidence, in particular in the early 1990s,[56] and there has been a trend towards higher compensation levels with more emphasis on the variable compensation components.[57] However, there is also widespread concern about the efficacy of this trend by both practitioners and academics alike. In particular, concerns about too beneficial pay for performance relationships and drawbacks of options such as the danger of substantial risk taking by managers have received increased attention.[58]

Borokhovich/Parrino/Trapani (1996), Yermack (1996), Holderness/Kroszner/Sheehan (1999), Peasnell/Pope/Young (2003) and Hermalin/Weisbach (2003).

[54] For work examining the link between board compensation and firm value see Mehran (1995) and Core/Guay/Larcker (2003), amongst others.

[55] Cf. Tirole (2006), p. 30.

[56] For work on ownership see according to Gillan (2006), p. 387, for example Demsetz/Lehn (1985), Morck/Shleifer/Vishny (1988) and McConnell/Servaes (1990). For work on compensation see for example Murphy (1999), Bebchuk/Fried (2003), Core/Guay/Larcker (2003) and Core/Guay/Thomas (2005).

[57] Cf. Tirole (2006), p. 24.

[58] For work on the executive compensation controversy see for example Jensen/Murphy (1990), Haubrich (1994), Core/Guay (1999) and Guay (1999). For work on the drawbacks of stock options such as increased risk taking see for example Acharya/John/Sundaram (2000), Brenner/Sundaram/Yermack (2000), Chance/Kumar/Todd (2000), Carter/Lynch (2001), Chidambaran/Prabhala (2003), Coles/Hoi (2003) and Rogers (2005).

The incentives to closely follow the actions of the management and to stop value-decreasing policies increase with the stake of *ownership* in the company. With the exception of the US and the United Kingdom (UK), a certain degree of equity ownership concentration is encountered in most companies around the world.[59] M*onitoring of the firm by incumbent (i.e. internal) blockholders* has been associated with increased shareholder value.[60] However, this observation has to be treated with care. First, the relationship between concentrated ownership and firm value is blurred by endogeneity issues.[61] Second, while increased ownership is likely to result in more stringent oversight of managers, it may also incur costs, such as the potential for self-dealing on private information at the cost of remaining shareholders.[62]

Similarly*, monitoring by incumbent debt holders* represents an important governance mechanism. When large amounts of debt financing are provided, creditors such as banks typically include rigorous covenants in the respective debt contracts.[63] Consequently, creditors have the right to enforce a change of control when interest and or principal payments are not met. Therefore, monitoring by incumbent creditors to ensure proper interest and principal payment shall discipline manager's incentives to divert free cash flows.[64]

In addition to these four central internal governance mechanisms, all institutions or persons with which the company has a contractual relationship can be interpreted as internal governance mechanisms. For example, employees may be disappointed by self-dealing managers and consequently might whistle-blow such insider information to the press.[65]

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[59] Cf. for instance Becht/Bolton/Röell (2005), p. 47 and Tirole (2006), pp. 39-40.

[60] Cf. Shleifer/Vishny (1986), Dlugosz et al. (2006), Cronqvist/Fahlenbrach (2009) and further sources in Gillan (2006) and Bebchuk/Weisbach (2010).

[61] Cf. Demsetz (1983), Demsetz/Lehn (1985) and Demsetz/Villalonga (2001).

[62] Cf. Tirole (2006), pp. 41-42.

[63] Cf. Harvey/Lins/Roper (2004).

[64] Cf. Jensen (1986) and Jensen (1993).

[65] Cf. Moldenhauer (2007), p. 20.

Whereas internal control mechanisms stem from a firm's contractual relationships, firm governance is also determined by *external mechanisms* which evolve from its competitive environment. In particular, prior work has stressed the controlling forces of *product and factor markets*, the *labour market* (for managers) and the *capital market* including (i) monitoring by potential capital providers and information providers (such as stock analysts) and (ii) the market for corporate control.

In all cases, the underlying argument is that competition would not allow managers to divert substantial corporate resources; otherwise these companies would be driven out of the market. Hence, the author refrains from presenting each of these external governance mechanisms in detail. Section 2.2 will provide a detailed picture of the market for corporate control since takeovers are in the focus of this dissertation.

2.1.2.3 *Corporate governance systems*

The interaction of the internal and external governance mechanisms described in the previous section is shaped by the policy environment, that is, laws that govern contracts and their enforcement as well as more macroeconomic oriented policy levers such as tax and labour regulations.[66] Consequently, each jurisdiction can be understood as a particular governance regime or system. While globalization has led to some convergence of governance systems in most advanced economies, there still exist marked differences. Departing from the two broad legal traditions of common and civil law, the literature exemplifies these differences by contrasting two stylized, polar systems: the Anglo-Saxon, capital market-oriented system and the continental European, corporate law-oriented system.

The Anglo-Saxon capital market-oriented system is based on strong protection of investor's property rights. Shareholders enjoy strong minority protection, can transfer their stakes at little cost, rely on shareholder-oriented fair value accounting standards and have powerful rights to sue managers for breaching their fiduciary duty to act in

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[66] Cf. Tirole (2006), pp. 53-54.

the best interest of shareholders, such as class-action lawsuits.[67] This strong protection affects the development of equity capital markets.[68] In common-law-oriented countries such as the US and the United Kingdom (UK), relatively more companies go public and the ratio of equity capital market capitalization to gross domestic product is larger than in civil law countries such as Germany.[69] In the same vein, countries with strong investor protection are less likely to require a concentrated ownership with large blockholders who have the incentive and power to curb managerial misbehaviour. There is widespread evidence for this notion: Anglo-Saxon companies are predominantly owned by a set of widely dispersed shareholders.[70] These shareholders, however, can rely on a highly active takeover market as disciplinary mechanism.[71]

The remaining stakeholders of the corporation are endowed with comparably few rights in the Anglo-Saxon system. Creditors such as banks have historically enjoyed relatively little protection in the US. The bankruptcy process allocates substantial rights to the judge which severely limits bank influence in the restructuring and liquidation process.[72] Further, until 1999 the Glass-Steagall act prevented banks from directly owning significant stakes in industrial corporations and thus from strengthening their influence, for instance by sending representatives to the board.[73] Similarly, employees have less voice in the Anglo-Saxon model, for instance they have no say in appointing board members. Consequently, that is why the Anglo-Saxon corporate governance system is often referred to as shareholder-oriented.

In comparison to the Anglo-Saxon system, outside and minority shareholders are generally less protected in the continental European jurisdictions with the

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[67] Cf. Shleifer/Vishny (1997), pp. 769-770, Dietl (1998), pp. 147-155 and Scott (1999), p.6 according to Moldenhauer (2007), p. 23.

[68] Cf. Porta et al. (1997), pp. 1131-1150.

[69] Cf. Tirole (2006), pp. 54-55.

[70] Cf. Shleifer/Vishny (1997), p. 754 and Becht/Bolton/Röell (2005), p. 73, amongst others.

[71] Cf. Shleifer/Vishny (1997), pp. 769-770 and Martynova/Renneboog (2008), p. 2148, amongst others.

[72] Cf. Hotchkiss et al. (2008), p. 13.

[73] Cf. Becht/Bolton/Röell (2005), p. 51 and Moldenhauer (2007), p. 24. In the United Kingdom (UK), creditors enjoy better rights due to the receivership approach. However, banks do not own significant stakes in corporations such as in Germany. Cf. for instance Davydenko/Franks (2008).

Scandinavian civil law system offering the most, the German intermediate and the French the lowest protection.[74] This pattern is in line with the observation that equity capital markets in continental Europe are relatively small when set in relation to gross domestic production.[75] Further, the relatively poor shareholder protection may explain why ownership in these jurisdictions is generally concentrated in the hand of large, long-term oriented blockholders.[76] These large shareholders have the ability to interfere with management and therefore to limit the higher risk stemming from the lower shareholder protection. An alternative, more pessimistic view is that it enables them to consume private benefits at the cost of minority shareholders.

Creditors which consist predominantly of banks play an important role in the continental European system. Corporations usually engage in long-term relationships with their banks. Thereby banks can accumulate valuable information about their clients. Due to their crucial function as debt provider (for future rounds), they have a voice in the government of the firm, even if they do not hold substantial equity stakes.[77] Furthermore, banks usually fulfil a dual role in the continental European system in the sense that they act as (shadow) equity holders. On the one hand, banks sometimes own direct equity stakes in firms, on the other hand they can exert control through proxy voting for absent shareholders.[78]

Employees as further stakeholders are typically granted more beneficial rights in the continental European context, though there are obvious variations among jurisdictions. Most notably, employees' interests in Germany have historically been considered by

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[74] Cf. Porta et al. (1997), p. 1132.

[75] Cf. Tirole (2006), pp. 54-55.

[76] Cf. Gugler/Mueller/Yurtoglu (2004), p. 137. A complementary view is that in Anglo-Saxon jurisdictions there are regulations which hamper financial institutions and large investors in their monitoring efforts. See Becht/Bolton/Röell (2005), p. 34 and sources therein.

[77] Cf. Becht/Bolton/Röell (2005), p. 52.

[78] Cf. Baums/Fraune (1995) according to Becht/Bolton/Röell (2005), p. 51.

the act of codetermination, i.e. the right to appoint half of the supervisory board members which oversee management.[79]

The market of corporate control as the primary external governance mechanism has historically been less vital than in the Anglo-Saxon markets. However, this stylized fact has changed with the fifth takeover wave of the 1990s when continental European firms matched their US and UK counterparts for the first time in pursuing takeovers.[80] Further, when focusing on LBOs, the transaction volume in continental Europe has surpassed the UK in the second buyout wave of the 2000s.[81]

2.2 Takeovers

This chapter introduces takeovers as a central external governance mechanism following Burkart/Panunzi (2008). Section 2.2.1 outlines the economic functions of takeovers and the related evidence on efficiency gains. Section 2.2.2 analyses the effect of ownership structures on takeovers. Thereby takeovers are embedded into the two stylized corporate governance systems described in the previous section and the theoretical foundation for the empirical chapters 3 and 4 is set which focus on LBOs in continental Europe.

2.2.1 Economic function and efficiency

There are two broad economic rationales for takeovers: first and in line with a pure agency cost perspective, improved management of the firm's existing resources which is also often referred to as managerial skill or, respectively, as rectification of managerial failure argument. Second, generation of synergies, i.e. additional value stemming from the combination of two firms which would have not been available to

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[79] With the introduction of the Societas Europaea (SE), companies have nowadays theoretically the option to diminish employees' say in boards. In practice, however, this has not happened as evidenced by the cases of Allianz, Fresenius und BASF. With respect to traditional legal corporate forms, Moldenhauer (2007) notes that "similar but less stringent forms of codetermination exist in Hungary, Slovenia, Slovakia, Poland, Austria, Luxembourg and the Netherlands. […] France and Italy have provided companies since 1996 and 2003, respectively, with a choice to implement one tier Anglo-Saxon or two-tier German board models" (Moldenhauer (2007), p. 25).

[80] Cf. Martynova/Renneboog (2008), p. 2148.

[81] Cf. Kaplan/Strömberg (2009), p. 127.

these companies operating independently.[82] Outsiders, who expect to be more competent in running the firm's existing resources and/or generating synergies, will try to gain control in the market for corporate control since they expect to realize a profit.[83] Hence, takeovers shall lead towards a value-maximizing policy complementing other external and internal governance mechanisms.[84] More precisely, the market for corporate control can promote value generation in two ways: in the explicit form of an actual takeover and in the implicit form of a general takeover threat. In the following, the empirical evidence on value creation stemming from the former is first reviewed before the respective evidence on the latter is discussed which is more difficult to grasp.

The economic consequences of takeovers are often approximated using stock price reactions to bid announcements. The evidence from this stream of the literature can be summarized as follows:

- target shareholders gain significantly with abnormal returns ranging from 15% to 30% in the Anglo-Saxon context[85] to 10% in the continental European context,[86]
- acquiring shareholders seem to neither gain nor loose substantially with the evidence being far more variable; some studies reporting slightly positive,[87] negative[88] or statistically insignificant[89] abnormal returns,
- the combined effect being slightly positive in the range from 1% to 3%.[90]

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[82] Cf. Damodaran (2005), p. 3 and Burkart/Panunzi (2008), p. 2.

[83] A takeover can be either conducted as a *merger* when the prospective buyer negotiates with target management or as a *tender offer* when the bid is made directly towards the shareholders and hence, target management is bypassed.

[84] This positive view dates back to Manne (1965).

[85] Cf. Andrade/Mitchell/Stafford (2001), Bruner (2002) and McCahery et al. (2004) for literature reviews.

[86] Cf. Campa/Hernando (2004) and Goergen/Renneboog (2004).

[87] Cf. for instance Goergen/Renneboog (2004) and Schwert (1996).

[88] Cf. for instance Andrade/Mitchell/Stafford (2001).

[89] Cf. for instance Stulz/Walkling/Moon (1990).

[90] Cf. for instance Andrade/Mitchell/Stafford (2001) and Campa/Hernando (2004).

Hence, on average takeovers create gains for shareholders with the majority, if not all, being consummated by target shareholders. Since shareholders are the residual claimants of the corporation after all other contractual obligations have been met, these gains are often interpreted in the sense that takeovers do create value. This conclusion, however, is based on strong assumptions such as the absence of redistribution and externalities as well as efficient stock markets. Hence, shareholder wealth gains are only indicative of efficiency improvements.

If takeovers lead indeed to efficiency improvements, they should be reflected in improved operating performance. The evidence on operating performance following takeovers, however, is not clear-cut. While some studies find a significant improvement relative to peers in the post-takeover period,[91] others find a statistically insignificant[92] or even negative[93] performance development. It has to be stressed, however, that operating performance studies have to be interpreted with care. They are plagued by methodological difficulties such as the lack of adequate benchmarks and the low degree of comparability due to different performance measures and assessment periods, amongst others.[94]

The lack of unambiguous evidence for value creation (stemming from the operative performance literature) and the high takeover premiums for target shareholders gives rise to the conjecture of wealth transfers. On the one hand, there is the potential for the redistribution of wealth from the acquirer (shareholders) to the target (shareholders). Explanations for such transfers include over-optimism[95] or simply self-serving actions (diversification of human capital risk[96] and/or empire building[97]) on behalf of acquiring managers. The empirical literature has lent evidence to the redistributive role

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[91] Cf. for instance Lichtenberg et al. (1987), Lichtenberg/Siegel (1989) and Healy et al. (1992).

[92] Cf. for instance McGuckin/Nguyen (1995) and Schoar (2002).

[93] Cf. for instance Ravenscraft/Scherer (1987).

[94] The evidence on improved operating performance following a takeover is rather clear for leveraged buyouts. The majority of the private equity literature finds that LBO targets improve their performance following the buyout. Cf. section 2.3.2 for details.

[95] Cf. Roll (1986).

[96] Cf. Amihud/Lev (1981).

[97] Cf. Marris (1963) and Marris (1964).

of both rationales.[98] However, target shareholders cannot solely gain at the cost of the acquirer shareholders since the combined shareholder returns are (slightly) positive. Alternatively, target shareholders can also benefit from a redistribution of wealth from target stakeholders, i.e. employees, creditors, consumers and the government as the tax authority. There is empirical evidence which supports these concerns.[99] However, the stakeholder wealth losses are relatively small when compared to the target shareholder gains. Consequently, from an overall perspective it appears that takeovers lead to efficiency improvements even if they are limited in their size.

In addition to actual takeovers, the general threat of a takeover is also contended to induce managers to maximize the value of the firm. An often mentioned example underlying this claim is the 1980s when high takeover activity driven by private equity funds coincided with ample restructuring by internal managers.[100] However, the threat of a takeover can also confer distorted managerial behaviour not necessarily in line with value maximization. Often cited examples for such behaviour include the adoption of takeover defences (such as poison pills, staggered boards, litigation and the likes[101]), entrenchment (e.g. in the form of changing the firm's direction more towards their own managerial skill set[102]) or underinvestment (e.g. in firm-specific human capital[103] or research and development, i.e. sacrificing long-term for short-term profitability[104]) due to the risk of getting fired.

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[98] With respect to evidence on the overoptimism argument see for instance Malmendier/Tate (2008). With respect to evidence on the self-serving rationale, see for instance Lewellen/Loderer/Rosenfeld (1985) who show that acquirers with high managerial ownership engage in takeovers with higher bidder returns.

[99] Cf. Shleifer/Summers (1988). For work focusing on employees see for instance Rosett (1990), for work on creditors see for instance Marais/Schipper/Smith (1989), for work on consumers, i.e. market power see for instance Eckbo (1983) and for work on the government, i.e. tax savings see for instance Auerbach/Reishus (1988).

[100] Cf. Holmstrom/Kaplan (2001), p. 121.

[101] Cf. Tirole (2006), pp. 45-46.

[102] Cf. Shleifer/Vishny (1989).

[103] Cf. Shleifer/Summers (1988).

[104] Cf. Stein (1988).

Empirical evidence on whether takeover threats are ultimately rather beneficial or detrimental to shareholders is inconclusive. Most of the work examines the effect of takeover defences on share returns and firm performance.[105] The evidence tends towards the view that anti-takeover devices slightly increase shareholder value[106] without preventing many takeovers but the evidence is weak at best.[107]

Consequently, there is more research needed in order to evaluate whether the mere threat of a takeover leads to additional value generation besides the modest efficiency gains arising from actually completed transactions.

2.2.2 Takeovers and target ownership structure

Motivated by the observation from section 2.1.2.3 that companies are held differently in the Anglo-Saxon and continental European corporate governance systems, in the following, the effect of the ownership structure on takeovers is assessed.

The seminal work of Grossman/Hart (1980) represents the reference base for this analysis. They analyse the bid process for a value-increasing takeover of a target which is owned by a large number of shareholders, each of them holding only an atomistically small proportion of the shares. In this setting, each individual shareholder assumes that s/he is not pivotal for the success of the transaction and opposes the costs and benefits under the two outcome scenarios: success and failure of the takeover. In case the takeover fails, i.e. less than 50% of the shares are tendered, her/his individual decision will be irrelevant since the value of her/his share will remain unchanged either way. In case the takeover succeeds, s/he would receive offer price p when tendering but post-takeover value x when holding. Hence, it follows that the individual shareholder will not consider tendering before p equals at least x. However, at this point, the bidder would not make any profit anymore but incur a loss if cost c for launching a bid is assumed. Consequently, even though the takeover would be value increasing, it will not proceed due to the free-riding behaviour of the small individual

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[105] For surveys, see Coates (2000) and Weston/Mitchell/Mulherin (2003).

[106] In particular, most studies find insignificant share reactions but higher takeover premiums.

[107] Cf. Burkart/Panunzi (2008), pp. 9-12.

shareholders to hold out for the maximal gain. Certainly, this theoretical result is extreme but offers a plausible explanation why most of the takeovers gains - as noted in the previous section - accrue to target shareholders.

In practice, there are several ways of how to mitigate the free-rider problem in takeovers, i.e. to increase the share of gains consummated by the bidder:

1. Post-takeover dilution of minority shareholders, for instance, in the form of a two-tier offer where the second offer to remaining (minority) shareholders is below the initial offer or, in the form, of self-serving asset transfers below fair market values (Grossman/Hart (1980)).
2. Pre-takeover acquisition of a toehold (Shleifer/Vishny (1986) and Chowdhry/Jegadeesh (1994)), i.e. the purchase of a company stake in the market at pre-bid prices.
3. Financing the takeover with debt backed by the target's assets and future cash flows (Müller/Panunzi (2004)), the increase in debt lowers the post-takeover share value (since debt is senior to equity) and thereby the shareholder's incentive to hold out.
4. Squeeze-out rights, i.e. the right to force remaining shareholders to sell their shares (Yarrow (1985) and Amihud (2004)).

These mechanisms underline that takeovers of firms with a dispersed ownership structure can be profitable for bidders. However, the empirical evidence presented in the previous section illustrates that the upside is limited.

Most companies around the world do not have a widely dispersed but rather a concentrated ownership structure. How does such an alternative ownership pattern influence takeovers? This is a complex issue being driven by several factors which may be categorized into *bargaining* and *agency cost* reasons.[108] From a *bargaining* view, the presence of a blockholder may help to mitigate the free-rider problem. Bidders may start a takeover by directly approaching and negotiating with the blockholder. In such bilateral private negotiations to gain an irrevocable commitment,

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[108] A comprehensive, meta-analysis of this topic is missing in the finance literature.

the bidder may be able to purchase a stake below the post-takeover value making the takeover profitable and consequently more likely.[109] Certainly, the ultimate price will depend on how pivotal the blockholder stake is for the successful completion of the transaction. However, since the free-rider problem has been shown to be of rather minor importance in practice (Eckbo (2009)), the empirical chapters 3 and 4 of this dissertation will rather not examine the blockholder structure from a *bargaining* view but from an *agency cost* view. According to this view, there are three important considerations. First, incumbent blockholders may already have actively engaged in monitoring thereby making the target less attractive given their lower potential for reducing agency costs, i.e. creating value. Second, blockholders may appropriate substantial private benefits thereby making a takeover less likely since the target will only be sold if the blockholder receives a premium which compensates her/him for the foregone private benefits of control.[110] Third, the monitoring and private benefit incentives are likely to be determined not only by the size of the blockholder but also by her/his identity.[111] Overall, given these three rationales, it will be interesting to test empirically how they affect the takeover decision by the private equity investor.

2.3 Private equity and buyouts

The following sections describe the private equity (PE) model with an emphasis on the investment phase, i.e. buyouts. Section 2.3.1 introduces the reader to the private equity terminology and briefly outlines the stylized roles of private equity investors over the lifecycle of a fund. Section 2.3.2 focuses on the investment phase, i.e. buyouts. The business model of private equity investors in terms of governance, operational and

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[109] Further, if the ownership block is sufficiently large, the raider may bypass the free-rider problem altogether gaining instantaneous control. Cf. Wright/Weir/Burrows (2007) and Burkart/Panunzi (2008), pp. 17-18.

[110] In many firms there is a violation of the one-share one-vote principle (Grossman/Hart (1988)) as the large shareholder holds more voting rights than cash flows rights. Hence, the potential for minority shareholder expropriation is substantial as the large shareholder has sufficient control to dominate the firm combined with relatively low ownership which reduces her/his direct cost from stealing the firm's assets. Bebchuk (1999) predicts a positive relationship between control exercised by the large shareholder and the size of her/his private benefits. Barclay/Holderness (1989), Zingales (1994) and Dyck/Zingales (2004) provide empirical evidence in favour of such a relationship.

[111] For a more detailed discussion, cf. section 3.2.1 and 4.2.1.

financial engineering is examined and the empirical literature on how it impacts (i) takeover pricing, (ii) operational performance at the portfolio company level and (iii) financial returns (gross- and net-of-fees) at the fund level is reviewed.

2.3.1 Definitions and basics

There exist no uniform definitions of the terms "private equity" and "private equity investors", respectively.[112] A classification which has received a relatively wide acceptance in the literature is provided by Fenn et al. (1997). They view private equity from a broad perspective and define it as "professionally managed equity investments in the unregistered securities of private and public companies […]. Private equity managers acquire large ownership stakes and take an active role in monitoring and advising portfolio companies."[113]

According to Kaserer et al. (2007), "private equity in its broad sense" can then be subdivided according to the lifecycle stage of the target company (see Figure 2-3). Investments into early stage companies are referred to as "venture capital" and investments into later stage, i.e. mature companies are referred to as "private equity in its narrow sense". With respect to the latter, one can differentiate further between minority and majority investments according to the share of common equity.[114] This thesis will focus solely on majority investments, i.e. buyouts.

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[112] For details, see Lahr (2010), pp. 7-9 and Tappeiner (2010), pp. 8-9.

[113] Cf. Fenn/Liang/Prowse (1997), p. 2. Thereby, this definition explicitly includes investments in public equity, i.e. public to private transactions (PTP) and private-investments-in-public-equity (PIPE).

[114] Cf. Kaserer et al. (2007), p. 13-15.
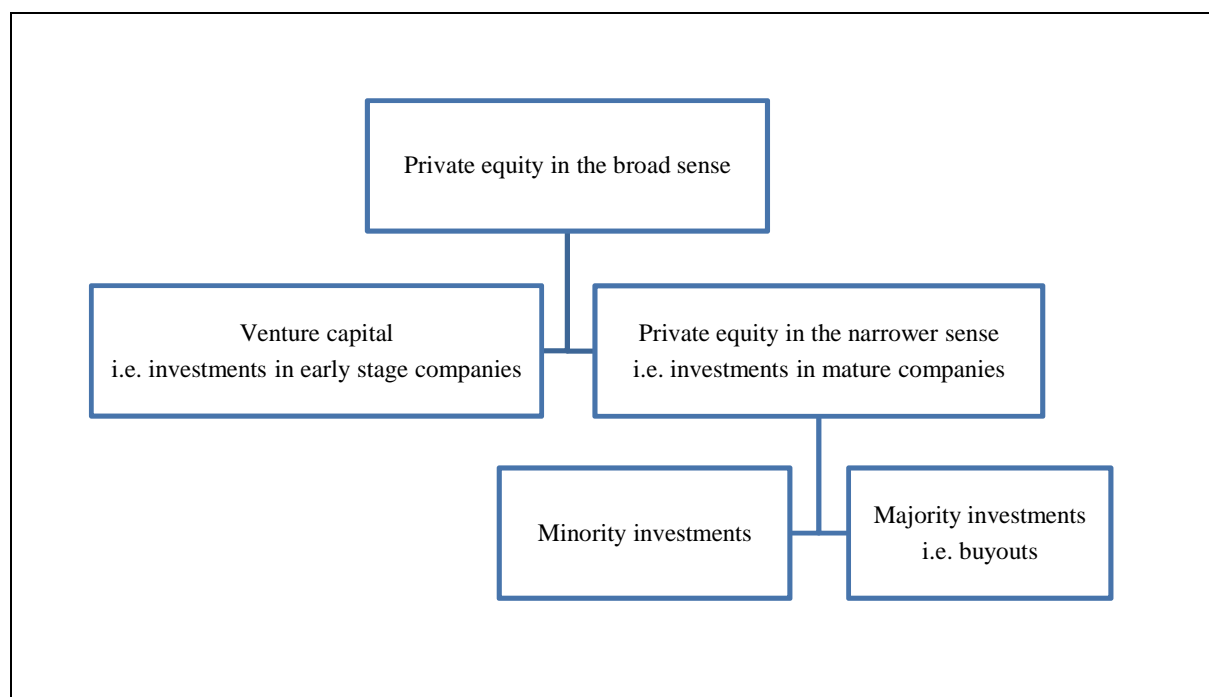
Figure 2-3:   Classification of private equity
Source: Kaserer et al. (2007), p. 14   .

Buyouts are typically financed with a relatively large share of debt ranging from 60% to 90% leading to the term leveraged buyout (LBO).[115] Buyouts are also sometimes further sub-classified according to (i) the bidder party besides the private equity investor and (ii) the selling party. With respect to the former, however, the classifications are not sharply delineated from each other and do only partly cover the richness of bidder syndicates encountered in practice. Hence, this thesis refrains from a discussion of this sub-classification.[116] With respect to the latter, one can differentiate between private to private buyouts (buyouts of independent, private companies such as family firms), divisional buyouts (buyouts of company divisions or subsidiaries), privatization buyouts (buyouts of government or state-owned entities), secondary buyouts (buyouts of firms already owned by private equity investors), distressed buyouts (buyouts of firms close to or in receivership) and going private buyouts

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[115] Cf. Kaplan/Strömberg (2009), p. 124.

[116] For delineation attempts of the terms management buyout (MBO), management buyin (MBI), buyin management buyout (BIMBO), owner buyout (OBO), employee buyout (EBO) and institutional buyout (IBO) see Klöckner (2009), pp. 24-26 and Renneboog/Simons/Wright (2007), pp. 592-593.

(buyouts of publicly listed companies).[117] The empirical chapters of this dissertation will focus on going private buyouts since ample and sharp market data is available for the respective target companies. The drawback is that going private buyouts represent a specific buyout type and the motives for such transactions may not be fully congruent with the alternative buyout types.

Buyouts are executed by *private equity investors* (which are also referred to as private equity firms). They are financial intermediaries, i.e. they raise capital from third parties and invest it directly in portfolio companies. Generally, private equity investors are organized as limited partnerships. The firm partners, who are referred to as general partners (GPs), set up funds by collecting capital commitments from institutional investors which thereby become limited partners (LPs) of the fund. Typically, the funds have a closed-end structure with a finite lifetime of approximately 10 years.[118]

Figure 2-4 summarizes the stylized roles of private equity investors over the lifecycle of a fund. In the *fundraising stage* (stage I), the GPs collect capital commitments from LPs such as pension funds, endowments or insurance companies. During the *investment stage* (stage II), portfolio companies are identified, financing is structured and when a bid has been successful, value-increasing measures are implemented in the portfolio company. In the *divestment/exit stage* (stage II), GPs sell portfolio companies and distribute proceeds to investors.[119] Since this dissertation focuses on the selection and pricing of portfolio companies, the subsequent discussion will be limited to the investment phase.

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[117] Cf. Axelson et al. (2010), p. 13 and Klöckner (2009), p. 25.

[118] Cf. Metrick/Yasuda (2010), p. 2.

[119] Cf. Achleitner (2002), p. 748 and Gompers/Lerner (2004) according to Tappeiner (2010), pp. 20-21.
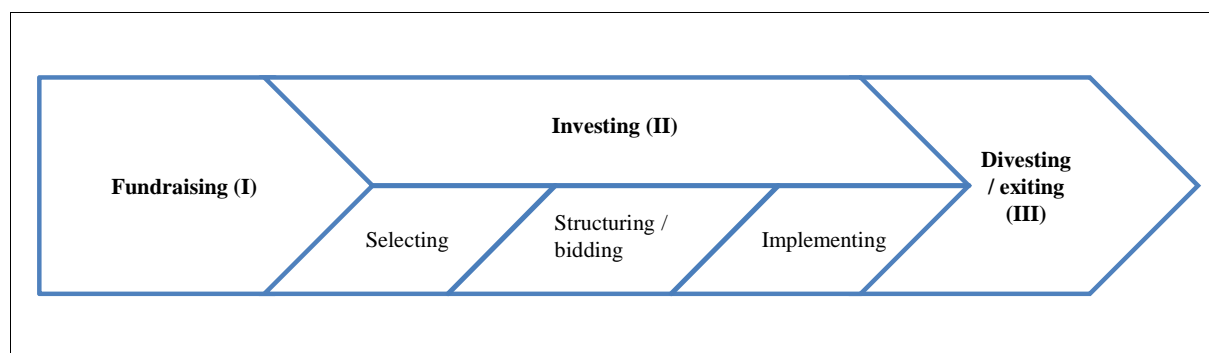
Figure 2-4: Role of private equity investors over the lifecycle of a fund
Source: Achleitner (2002), p. 748.

2.3.2 Buyouts and returns

The objective of private equity investors is to realize a financial return on their investments.[120] In order to do so, proponents of the private equity model claim that private equity investors implement a multitude of changes at portfolio companies which result in operational improvements, and, hence, create economic value.[121] These measures can be broadly categorized into (i) governance, (ii) financial and (iii) operational engineering.[122] In the following, each of them will be briefly presented before the empirical literature on whether they lead indeed to efficiency gains is reviewed.

With respect to governance engineering (i), private equity investors typically strengthen management incentivation (by requiring managers to tie substantial portions of their net wealth to performance-based compensation), restructure boards (by decreasing the number of members) and actively monitor the latter (by increasing the number of meetings and contacts as well as replacing underperforming managers).[123]

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[120] Cf. Berg/Gottschalg (2005), p. 9.

[121] Cf. Kaplan/Strömberg (2009), p. 130.

[122] Cf. Kaplan/Strömberg (2009), p. 130. In the subsequent discussion, it will become clear that these mechanisms are rather intertwined than mutually exclusive components of the private equity model.

[123] Cf. Kaplan (1989a), Gertner/Kaplan (1996), Kaplan/Strömberg (2009) and Acharya/Hahn/Kehoe (2010).

With respect to financial engineering (ii), private equity investors finance acquisitions with large shares of leverage usually ranging from 60% to 90%.[124] Leverage is intended to fulfil two beneficial roles. On the one hand, high interest and principal payments shall limit managers' discretion to dissipate free cash flows (Jensen (1986), Jensen (1989)) and thereby enforce the governance role of private equity investors. On the other hand, debt interest payments are tax deductible in most countries and, thereby, can increase firm value up to the point where the marginal benefit of tax savings equals the marginal cost of expected financial distress.[125]

With respect to operational engineering (iii), private equity investors draw on industry-specific expertise to develop and implement operational value creation plans aiming at increasing productivity (for instance via improving process efficiency or reducing purchasing and/or overhead costs) and spurring (in-)organic growth (for instance via new products, distribution channels and/or review of pricing).[126]

There is academic evidence that private equity investors employ these three engineering mechanisms and thereby create efficiency gains at the portfolio company level.

Starting with the motives for LBOs, there is support that private equity investors direct bids at firms with (i) low managerial ownership,[127] large free cash flows and low growth opportunities[128] which indicates the potential for governance and operational

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[124] For a detailed description of the financial structure of LBOs see Axelson et al. (2010).

[125] Cf. Jensen (1986), Jensen (1989), Kaplan (1989b), Kaplan/Stein (1993), Axelson et al. (2010) and Jenkinson/Stucke (2010).

[126] Cf. Acharya/Hahn/Kehoe (2010).

[127] Cf. Kaplan (1989a), Halpern/Kieschnick/Rotenberg (1999) and Acharya/Hahn/Kehoe (2010). Halpern/Kieschnick/Rotenberg (1999) provide further evidence that companies with relatively high managerial share ownership are also more likely to be targeted by private equity investors. They argue that managers, who have invested a large share of their personal wealth in the company, tend to be more risk averse. In turn, increased risk aversion may hamper shareholder wealth and consequently shall increase the likelihood for an LBO.

[128] Cf. Lehn/Poulsen (1989) and Opler/Titman (1993). However, Maupin/Bidwell/Ortegren (1984) and Halpern/Kieschnick/Rotenberg (1999) find no support in favor of Jensen's (1989) free cash flow hypotheses and, hence, the evidence remains heterogeneous.

engineering and (ii) low leverage levels and high tax liabilities[129] which points towards the potential for financial engineering.[130]

Further, the vendors of going private buyout targets generally receive substantial premiums in the range of 30 % to 55% over the market value of equity.[131] Since public shareholders are the residual claimants of the corporation after all other contractual obligations have been meet, these gains are often interpreted in the sense that LBOs do create value. This conclusion, however, is based on strong assumptions such as the absence of redistribution and externalities as well as efficient stock markets.[132] Hence, shareholder wealth gains are only indicative of efficiency improvements.

If LBOs lead indeed to efficiency improvements, then the latter should be reflected in improved operating performance following the buyout. There is widespread consensus that this is the case. Irrespective of whether (i) performance is measured in terms of operating margins, cash flow margins or total factor productivity, (ii) the buyout sample under investigation stems from the US or Europe and (iii) took place in the first or second buyout wave, the clear majority of studies reports performance improvements in the phase under private equity ownership.[133] A sensitive question,

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[129] Cf. Kieschnick (1998), Halpern/Kieschnick/Rotenberg (1999).

[130] Moreover, there is also evidence that firms with low prior stock performance are more likely to become LBO targets. This aggregate measure is, however, difficult to interpret: it may be that it indicates a low capital market visibility of target companies, superior target picking skills of private equity investors (with an excellent network in the financial industry) or, more generally, simply unobserved value creation potential not controlled for in the analysis. Further, the overall ownership structure has been shown to influence the takeover likelihood. Weir/Laing/Wright (2005) stresses the monitoring role of institutional investors, Achleitner et al. (2011 forthcoming) the deterring impact of private benefits of incumbent owners and Wright/Weir/Burrows (2007) the importance of irrevocable commitments.

[131] Most notably DeAngelo/DeAngelo/Rice (1984), Kaplan (1989a), Lehn/Poulsen (1989), Bargeron et al. (2008) and Jenkinson/Stucke (2010). Further studies are Lowenstein (1985), Torabzadeh/Bertin (1987), Amihud (1989), Kaplan (1989a), Kaplan (1989b), Marais/Schipper/Smith (1989), Asquith/Wizman (1990), Frankfurter/Gunay (1992), Lee (1992), Harlow/Howe (1993), Slovin/Sushka (1993), Travlos/Cornett (1993), Easterwood et al. (1994), Betzer (2006), Andres/Betzer/Weir (2007), Renneboog/Simons/Wright (2007), Achleitner/Hinterramskogler (2008), Cao/Lerner (2009), Guo/Hotchkiss/Song (2011 forthcoming), Officer/Ozbas/Sensoy (2010) and Achleitner et al. (2011 forthcoming).

[132] Cf. Burkart/Panunzi (2008), p. 8.

[133] Cf. Kaplan (1989a), Lichtenberg/Siegel (1990), Smith (1990), Wright/Wilson/Robbie (1996), Desbrieres/Schatt (2002), Harris/Siegel/Wright (2005), Bergström/Grubb/Jonsson (2007), Weir/Jones/Wright (2008a), Guo/Hotchkiss/Song (2011 forthcoming), Acharya/Hahn/Kehoe (2010)

more from a political rather than an economic point of view, is whether these operational performance improvements may have been achieved by lowering wages and cutting jobs. Academic evidence on the impact of private equity on employment is heterogeneous.[134] When focused on recent, large sample empirical evidence, it seems that "buyout target firms become strategically more focused, which lead to existing job loss where inefficiency existed, and at the same time result in focused expansions and job creations in areas of their core strengths."[135]

The documented efficiency gains coupled with market timing skills of private equity investors[136] lead on average to deal level returns above the large takeover premiums paid. Based on the hitherto largest database of 7,500 worldwide investments over the last 40 years, Lopez de Silanes et al. (2011) report a median investment internal rate of return (IRR) (public market equivalent (PME)) of 21% (1.3). The return variance is, however, high: every tenth portfolio company becomes insolvent and every fourth earns an IRR above 50%.[137]

These positive investment level returns do not necessarily translate into positive returns for the limited partners (LPs) due to the layer of fees charged by the general partners (GPs). GP compensation usually includes a fixed component which basically consists of the so-called *management fee* and a variable component which largely

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and Boucly/Sraer/Thesmar (2011 forthcoming). The studies of Guo/Hotchkiss/Song (2011 forthcoming) and Weir/Jones/Wright (2008a) find only a modest increase in operating performance.

[134] Cf. Kaplan (1989a), Lichtenberg/Siegel (1990), Amess/Wright (2007a), Amess/Wright (2007b), Davis et al. (2008) and Bernstein et al. (2010) for empirical work and Achleitner/Lutz (2009) for a comprehensive literature review on this topic.

[135] Cf. Metrick/Yasuda (2011 forthcoming), p. 18. Further concerns are that the improved operating performance may have been caused at the cost of future performance, i.e. cutbacks in research and development as well as capital expenditures. Cao/Lerner (2009) report evidence that reverse LBOs consistently outperform other initial public offerings (IPO) and Sorensen/Stromberg/Lerner (2011 forthcoming) show that private equity backed companies do not decrease investments in innovation as measured by patenting. Consequently, the improved operating performance of buyout portfolio companies seems not to be caused by cutbacks in investments which would hurt future performance. However, more research is needed before a final conclusion can be drawn.

[136] Both in terms of multiple expansion and arbitrage of capital market mispricing (Axelson et al. (2010)).

[137] Cf. Achleitner et al. (2010) for alternative evidence.

consists of the so-called *carried interest.* [138] The annual management fee is intended to cover the costs of running the fund. It typically amounts to 2% of committed capital during the investment period and decreases thereafter (either by lowering the fee percentage itself, switching the fee basis from committed to invested capital, or both). The carried interest is intended to create sharp incentives for the GPs to maximize their efforts. It typically amounts to 20% of the profits (carry level) earned on committed capital (carry basis) compounded with a preferred return to LPs of about 8% (carry hurdle). From a timing perspective, the most common arrangement is that cash flows accrue exclusively to LPs until the hurdle is reached, GPs are then entitled to claim all proceeds until their relative profit share equals 20%, and thereafter, each additional dollar gain is split 20/80 between both parties.[139]

This compensation arrangement indicates that gross and net-of-fees fund returns may substantially deviate from each other. Kaplan/Schoar (2005) and Phalippou/Gottschalg (2009) examine the Thomson Venture dataset and provide fund level evidence that this is indeed the case. Phalippou/Gottschalg (2009), who extend Kaplan/Schoar (2005) by adjusting for sample selection, self-reporting and weighting issues, report that private equity funds[140] outperform public equity markets (S&P 500) by 3% in terms of gross performance. When fees are netted out, however, the relationship turns and private equity funds underperform public equity markets by 3%. Moreover, additional risk adjustments lower performance by a further 3% resulting in an overall net-of-fees alpha of -6%. Consequently, the evidence indicates that private equity funds do not earn risk-adjusted returns for their investors. This picture would be even more pronounced if one would additionally factor in an illiquidity discount of the asset class.

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[138] Cf. Metrick/Yasuda (2010). Transaction fees represent a further fixed compensation component whereas monitoring fees is a further variable compensation component.

[139] Cf. Axelson/Strömberg/Weisbach (2009), p. 1571. Consequently, the incentivation package represents an option-like claim on fund returns and may induce GPs to excessive risk taking, particularly in the final stages of a fund's lifecycle.

[140] It is important to note that Phalippou/Gottschalg (2009)'s sample includes both buyout and venture capital funds.

2.4   Summary

Chapter 2 provides the framework which the three subsequent empirical chapters will be built upon. Section 2.2 introduces agency theory and corporate governance as the central tenets of this thesis. With respect to the latter tenet, a systematic overview of the governance mechanisms available to mitigate the classical manager-financier agency conflict is given. Further, it is presented how these individual governance mechanisms interact in the two dominant corporate governance systems, the continental European and Anglo-Saxon model. Thereby, the meta-framework for the empirical studies of the thesis is established since chapter 3 and 4 examine LBOs in the continental European environment while chapter 5 investigates LBOs in the US setting. Section 2.2 details the level of analysis by discussing takeovers, a governance mechanism, as the key object of this thesis. Following a rigorous review of the literature, it is first shown that takeovers confer modest efficiency gains. Further, it is assessed how the ownership structure affects takeovers. Thereby, the framework for the empirical analyses is sharpened which will focus on LBOs in continental Europe where targets are closely held (chapter 3 and 4) and the US where targets are widely held (chapter 5). Finally, section 2.3 narrows down the chapter to the very research object of this study: takeovers through private equity investors, i.e. LBOs. The private equity model is presented and it is shown the current state of research suggests that LBOs create value at the portfolio level but returns to the limited partners are, on average, not positive due to the layer of fees charged by general partners.

3 Investment Criteria of Private Equity Investors in Continental Europe[141]

3.1 Introduction

Private equity investors are believed to create value in the companies they acquire through financial, governance and operational engineering Kaplan/Strömberg (2009). More precisely, the former restructure companies suffering from suboptimal capital structure, managerial incentives that are misaligned with shareholders' interests, a lack of monitoring, operational inefficiencies and/or suboptimal strategic positioning. The definition of a private equity transaction adopted in this chapter is based on Weir et al. (2008a). Such a transaction consists of the acquisition of a publicly quoted company, usually by an unlisted company specifically set up for the purpose of the deal (Jensen (1993)). The bid often takes the form of a leveraged buyout (LBO) involving mainly debt financing. Contrary to other empirical studies, such as Halpern et al. (1999) who focus on management buy-outs (MBOs), this chapter studies those transactions that are sponsored by private equity investors not related to the management and, in particular, the motives behind these transactions.[142]

Studies based on Anglo-Saxon capital markets suggest that firms are more likely to be the target of a going private transaction if (1) managers' incentives are misaligned with stockholder interests (Halpern et al. (1999)), (2) they underperform relative to the

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[141] A previous version of this chapter, which is joint work with Ann-Kristin Achleitner and André Betzer, circulates under the title "Private Equity Investors as Corporate Governance Mechanism in Continental Europe". It was awarded the best paper prize at the "7th International Conference on Corporate Governance" (Birmingham). Further, it was also presented at the "European Financial Management Symposium on Corporate Governance and Control" (Cambridge). The current version of the chapter, which is joint work with Ann-Kristin Achleitner, André Betzer and Marc Goergen, is forthcoming in the European Financial Management Journal under the title "Private Equity Acquisitions of Continental European Firms: the Impact of Ownership and Control on the Likelihood of Being Taken Private". The publisher John Wiley & Sons grants the right to reuse own articles: "AUTHORS - If you wish to reuse your own article (or an amended version of it) in a new publication of which you are the author, editor or co-editor, prior permission is not required (with the usual acknowledgements)". Cf. http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291468-036X/homepage/Permissions.html, last accessed on 20 April 2011. See also Appendix A.

[142] While e.g. Halpern et al. (1999) analyse both pure MBOs (i.e. MBOs that do not involve financing by other parties such as private equity investors) and those which are financed jointly by the management and private equity investors, we include the latter but not the former. In other words, our sample includes only those acquisitions involving private equity funding.

stock market (Halpern et al. (1999)), (3) they have unused debt tax shields (Kieschnick (1998) and Halpern et al. (1999)), (4) they are characterized by high institutional ownership (Weir et al. (2005)) and (5) acquirers are able to obtain irrevocable commitments from existing small-block holders (Wright et al. (2007)). There is also some weak evidence suggesting that firms with large free cash flows and low growth opportunities are more likely targets of going private transactions (Lehn/Poulsen (1989) and Opler/Titman (1993)).

While the private equity market in the UK and the US has a long history, private equity funds have only recently emerged in continental Europe. Recent transactions include Barclays Private Equity's €104 million buyout of the German information technology (IT) wholesaler Computerlinks and Candover's €1,500 million deal of the Dutch industrial group Stork NV. Anecdotal evidence suggests that the continental European private equity market is likely to grow further over the next years as there is clearly still more appetite for continental European firms. For example, in a recent survey among international private equity fund managers by PricewaterhouseCoopers (PwC), the majority of the managers explicitly stated that their funds "view Western Europe as most attractive for future investment."[143]

There are as yet no empirical studies on the motives behind continental European private equity sponsored going private transactions (Renneboog et al. (2007)). Given that corporate governance in continental Europe differs markedly from that in the UK and US (Faccio/Lang (2002) and Drobetz et al. (2004)), the motives for private equity transactions and the characteristics of targets are also likely to be very different. The most important difference concerns ownership and control. The stake owned by the main blockholder in our continental European private equity targets is approximately twice as large as in Anglo-American targets. Indeed, Renneboog et al. (2007) show that the dominant shareholder (at the first tier) in the average (median) Anglo-American firm owns 23.5% (18.7%) whereas in our sample the dominant shareholder

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[143] Cf. Scholich/Burton (2010), p. 9.

(at the first tier) in the average (median) firm owns 43.5% (37.5%) of the votes.[144] Given the size of their stake, these large shareholders are likely to have the right incentives to monitor the management. If the large shareholder monitors the management, this is likely to make the firm less attractive to private equity investors given that there is less potential for value creation by the latter. Conversely, a large shareholder who is not able to monitor the management, maybe because of a lack of skills, may be more intent on selling her/his firm to private equity investors. Given the monitoring of management undertaken by the large shareholder, such firms are unlikely to attract private equity investors' intent on improving a firm's corporate governance. Further, strong control may also generate costs as the large shareholders may use their control rights to their own benefit and extract private benefits of control. As a result, private equity investors may avoid companies, whose controlling shareholders extract private benefits of control and are only willing to sell their stakes at a premium which is high enough to compensate them for the loss of their benefits.

This chapter contributes to the private equity literature in the following ways. First, it contributes to the as yet limited literature (see e.g. Andres et al. (2007), Achleitner/Hinterramskogler (2008), Achleitner et al. (2011 forthcoming) and Geranio/Zanotti (2011 forthcoming)) on private equity transactions outside Anglo-Saxon countries. Whereas previous studies mainly focus on the wealth effects of going private transactions or LBOs[145] and their determinants, this chapter investigates the motivation of private equity investors to acquire target firms.[146]

Second and more importantly, this chapter analyses the role of private equity investors in the continental European market which is characterized by very different corporate governance compared to Anglo-Saxon countries. Given the concentration of control,

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[144] At the ultimate level, the dominant shareholder in the average (median) firm owns 50.4% (48.0%) of the votes.

[145] Croci (2007) is the first study investigating the corporate governance role of active investors ("corporate raiders") in continental Europe. He examines whether corporate raiders are governance champions by looking at their post-acquisition interventions and their impact on the target firms' stock price performance.

[146] Another study by Cumming/Zambelli (2010) examines the effect of a regulatory change in Italy on the deal structure of Italian leverage buyout transactions.

the incumbent large shareholder may monitor the firm's management and/or extract private benefits of control from the firms. In turn, monitoring and the extraction of private benefits by the large shareholder are likely to have an impact on the firm's attractiveness to private equity investors. In this context, Andres et al. (2007) find that wealth effects of LBOs are larger in countries with a weaker protection of minority shareholders' interests.

Third, this chapter finds further evidence about the types of large shareholders that are likely to monitor the management and those that are unlikely to oversee the activities of the latter. The existing literature on the types of shareholders that are active rather than passive is as yet sparse and does not provide consistent conclusions.

Fourth, unlike previous studies on going private transactions, this chapter clearly distinguishes between the tax advantage and the disciplinary role of leverage. We find evidence in favour of both roles of leverage.

Our logistic regressions, which predict the likelihood of a company becoming the target of a private equity acquisition, provide strong evidence that the monitoring of the management and the private benefits of control enjoyed by the large shareholder are important factors determining the investment decision of private equity managers in continental Europe. We find strong evidence that the likelihood of a firm being taken over by a private equity investor decreases if it has a large shareholder with strong monitoring incentives as measured by the latter's percentage of cash flow rights. We also find consistent evidence that firms with large shareholders who enjoy substantial private benefits of control – as measured by the votes they hold and the difference between the votes and the cash flow rights they own – are less likely to be acquired by a private equity firm. Hence, there is strong evidence that it is important to take into account ownership and control when studying the motives of private equity investors operating in continental Europe. As stated above, we also find support that the tax benefit from increasing leverage and the bonding role of further leverage influence the likelihood of a firm being acquired by a private equity investor. In addition, we also find that firms with illiquid shares are more likely to be the targets of private equity investors.

The chapter proceeds as follows. Section 3.2 reviews the related theoretical and empirical literature and derives the hypotheses. Section 3.3 discusses the sampling process, the selection of the control sample of non-acquired firms, the logit methodology and the definition of the variables. The empirical results and their interpretations are presented in section 3.4. Finally, the last section 3.5 summarizes and concludes.

3.2 Literature review and hypotheses

This section reviews the likely motives of a private equity investor for taking private a public company. It starts with the motives that refer predominantly to the blockholder-dominated corporate governance system of continental Europe followed by the traditional motives that have been highlighted in previous work on the Anglo-Saxon markets. Based on the review of these motives, a series of testable hypotheses is developed.

3.2.1 Motives applying to blockholder-dominated corporate governance systems

Apart from Maupin et al. (1984) and Weir et al. (2005), studies investigating how private equity investors choose their targets have typically ignored ownership and control. In any case, given that these studies are based on Anglo-Saxon private equity transactions, they are not able to analyse the motives that may be generated by the existence of a large shareholder in the target firm. This study intends to fill this gap. In what follows, it is argued that concentrated ownership and control influence private equity transactions via the *monitoring incentives* and the *private benefits of control* of the large shareholder.

3.2.1.1 Monitoring incentives

A shareholder's incentive to overcome the traditional free-rider problem and to engage in active monitoring of the management increases with her/his equity stake in the company (Jensen/Meckling (1976)). Hence, companies being monitored by a large shareholder are expected to be run more efficiently by their management and should therefore be less attractive targets for private equity investors, given their lower potential for reducing agency costs and thereby creating value.

H1 (monitoring): The probability of a firm being taken over by a private equity investor decreases if there is an active, monitoring shareholder.

As a proxy for the largest blockholder's monitoring incentives, her/his ownership stake is taken. In other words, the higher the amount of her/his own wealth the blockholder has invested in the company, the higher is the likelihood that the company is being monitored by the latter and the lower is the likelihood that the company will be targeted by private equity investors who intent to reduce agency costs.

3.2.1.2 Private benefits of control

Many continental European companies have a dominant, large shareholder (Faccio/Lang (2002)). This pattern is also observed for our sample as roughly 71% of the firms have a shareholder controlling more than 25% of the voting rights. In addition, in 39% of the firms there is a violation of the one-share one-vote principle (Grossman/Hart (1988)) as the large shareholder holds more voting rights than cash flows rights. Hence, the potential for minority shareholder expropriation is substantial as the large shareholder has sufficient control to dominate the firm combined with relatively low ownership which reduces her/his direct cost from stealing the firm's assets.

Bebchuk (1999) predicts a positive relationship between control exercised by the large shareholder and the size of her/his private benefits. Barclay/Holderness (1989), Zingales (1994) and Dyck/Zingales (2004) provide empirical evidence in favour of such a relationship. The potential for extracting private benefits of control from the firm implies that the blockholder will only sell her/his stake to a private equity investor if he receives a premium which compensates her/him for the foregone private benefits of control (Bebchuk (1999)). Hence, we argue that private equity investors avoid companies with large shareholders who enjoy substantial private benefits of control.

H2 (private benefits): Companies with large shareholders who enjoy private benefits of control are less likely to be the target of private equity investors.

3.2.1.3 Types of large shareholders

In the empirical analysis in section 3.4, we also distinguish between various types of large shareholders such as families and corporations. We find that it is important to take into account the type of the large shareholder as the monitoring incentives and private benefits of control only have an impact on the likelihood of a private equity transaction for some of these types.

Connelly et al. (2010) review the existing empirical research on the impact of different types of large shareholders. They find that family shareholders, except for founder-CEOs, typically do not create shareholder value as they tend to look after their own interests rather than those of the entire body of shareholders. Corporations as large shareholders are "a mixed blessing" (Connelly et al. (2010), p.7). On one side, they may provide additional funding to the firm, thereby increasing the growth of the latter. On the other side, they may expropriate some of the firm's resources. Further, while there is still some theoretical uncertainty about the impact of government ownership, most of the empirical literature finds a negative impact.

As banks are an important type of large shareholder in Germany, most of the existing empirical literature on the role of banks studies the German economy. However, the evidence remains inconclusive. Emmons/Schmid (1998), Cable (1985), Gorton/Schmid (2000b), Gorton/Schmid (2000a), Lehmann/Weigand (2000) and Köke/Renneboog (2005) find that banks as large shareholders have a positive impact on firm performance. However, Edwards et al. (2000) find that this effect only holds for the "3 big banks". In complete contrast, Agarwal/Elston (2001) and Chirinko/Elston (1998) do not find any statistically significant differences between the profitability of bank- and non-bank controlled firms. Further, Januszewski et al. (2002) report that firms controlled by banks experience lower growth in productivity than other firms.

Finally, Banerjee et al. (1997) analyse whether French holding companies, which are the main type of large shareholder in France, create shareholder value. Their results suggest that holding companies reduce rather than increase financial performance.

To summarize, we expect that families are unlikely to monitor their firms, but are likely to extract private benefits of control. While the monitoring role of corporations has not yet been confirmed, some of the evidence suggests that this type of large shareholder may also extract private benefits of control from their firms. Governments tend to be weak monitors and finally the jury is still out on whether banks are good monitors or not.

3.2.2   Traditional motives

In addition to monitoring incentives and private benefits of control, there are other reasons that may determine the likelihood of a firm becoming the target of a private equity investor. According to the existing literature, these motives are inadequate incentivisation of the managers, a suboptimal capital structure, risk and illiquid shares.[147]

3.2.2.1 Managerial incentives[148]

Jensen/Meckling's (1976) seminal paper describes the conflicts of interest between owners and managers that may occur in large corporations as the result from the separation of ownership and control. These conflicts are caused by the misalignment of managers' interests with those of the owners or shareholders. One way of realigning managers' interests with those of the shareholders is via managerial share ownership. In relation to the latter, Halpern et al. (1999) find empirical evidence that companies are more likely to be targets of private equity transactions if they have either relatively low or relatively high managerial share ownership. They justify this result as follows.

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[147] The existing literature also frequently considers the firm's valuation as a motive. In particular, firms with poor corporate governance or poor visibility may suffer from undervaluation and may hence be more likely targets. This section does not include a hypothesis based on the firm's valuation for two reasons. First, we already take into account the firm's corporate governance (via the monitoring incentives and the private benefits of control of the large shareholder) and the firm's visibility (via the stock liquidity). Second, we also conduct robustness checks which do not suggest that the firm's valuation has a significant impact on the likelihood of the firm being taken over by a private equity investor.

[148] In what follows, we consider managers to be professional managers, i.e. they are not identical to the large shareholder. We shall return to this issue in section 3.3.3.2.

Low (or no) managerial ownership causes managerial decisions to be based on distorted incentives because most of the benefits from acting in the best interest of the shareholders are not received by the managers but by the latter. Therefore, private equity firms typically require management teams to invest a substantial amount of their own wealth in the company through stocks. This results in a much improved incentive structure as managers now face not only the equity downside, but also the upside (Kaplan/Strömberg (2009)).[149]

However, relatively high managerial ownership can also be harmful to outside shareholders as managers, who have invested a large share of their personal wealth in the company, tend to be more risk averse than the former. In turn, managers' attitude towards risk has a negative impact on shareholder wealth (May (1995) and Halpern et al. (1999)). Empirical studies on the relationship between managerial stockholdings and firm performance document a negative effect of the former on the latter when managerial ownership is high. Among those studies are Morck et al. (1988) and McConnell/Servaes (1990) for the US and Short and Short/Keasey (1999) and Weir et al. (2002) for the UK.

We therefore expect a nonlinear relationship between the level of managerial ownership and the likelihood of the firm being taken over by a private equity firm. In other words, we expect that private equity investors are particularly keen on firms with very little managerial ownership as well as those with high managerial ownership as both types of firms suffer from a misalignment of managers' interests with those of the other shareholders.

H3 (management): Private equity firms are more likely to invest in companies with relatively low or relatively high managerial ownership.

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[149] There is only one case in our sample where the percentage of votes held by the management is different from its percentage of cash flow rights. The difference is also very small (5.38% versus 4.88%). Hence, in what follows we do not make a difference between managerial control and managerial ownership and use the latter term to refer to both.

3.2.2.2 Leverage

According to the seminal work of Modigliani/Miller (1958), capital structure decisions are irrelevant for the value of the firm when capital markets are perfect. However, if the assumptions behind perfect capital markets are relaxed, leverage may have a positive impact on firm value via the tax shield debt generates. Furthermore, more debt financing commits more of the cash flows, thus preventing managers from wasting resources on negative net present value projects.[150] Both reasons may explain the high debt ratios of 60% to 90% observed in private equity deals over the period of 1997 to 2007 (see e.g. Kaplan/Strömberg (2009) and Axelson et al. (2010)). We shall elaborate on both points below.

Tax benefit from leverage:

As is the case in the UK and the US, in continental Europe interest payments lower the firm's tax liability as they are charged to profits before corporate tax. Based on the assumption that the firm is in a positive tax bracket, Modigliani/Miller (1963) show that a rise in leverage increases shareholder value. Typically, private equity investors increase leverage to benefit from higher tax shields. Thus, we expect private equity targets to have low leverage ratios and large tax liabilities. With regard to the former, Halpern et al. (1999) and Weir et al. (2008b) provide limited evidence that going private targets in the UK and US have lower debt ratios before taken over than other firms. With regard to tax liabilities, the empirical evidence is mixed. On the one hand, Lehn/Poulsen (1989), Kieschnick (1998) and Weir et al. (2005) find no significant influence of firm's tax liabilities on the likelihood of being taken private. On the other hand, Lowenstein (1985), Kaplan (1989b) and Halpern et al. (1999) identify tax liabilities as one of the most important reasons for firms being targeted by private equity investors.

H4 (tax benefit from leverage): The likelihood of being taken over by a private equity investor is higher for companies with low leverage ratios and high tax liabilities.

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[150] However, this advantage comes at the cost of increased bankruptcy risk.

Bonding benefit from leverage:

Those who view private equity as a superior organizational form, such as Jensen (1986), argue that the increase in leverage via going private transactions is driven by the desire to reduce wastage of free cash flows. In other words, debt can be seen as a corporate governance mechanism that brings greater discipline to the management (Wright/Robbie (1998)). Thus, we expect private equity targets to have high debt capacity as evidenced by low leverage and a high potential for wastage by the management as evidenced by high levels of free cash flows. As stated above, there is some limited evidence that a low debt ratio increases the likelihood of the firm being taken over by a private equity investor. With regard to free cash flows, the evidence is more ambiguous. Lehn/Poulsen (1989), Singh (1990) and Opler/Titman (1993) find support for the free cash flow hypothesis whereas Servaes (1994), Kieschnick (1998), Halpern et al. (1999) and Weir et al. (2005) do not find any support.

H5 (bonding advantage of leverage): Private equity investors prefer taking over companies with low leverage and high free cash flow levels.

3.2.2.3 Risk

As outlined in the aforementioned discussion, private equity acquisitions are typically financed by a substantial amount of debt. This results in a higher proportion of the firm's cash flows being committed to servicing the debt. Hence, private equity investors prefer companies with high debt capacity, i.e. those with predictable and stable cash flows. The less volatile a firm's cash flows, the more likely it will be a target for private equity investors.

H6 (risk): Private equity investors are more likely to take over companies with stable cash flows.

3.2.2.4 Stock liquidity

We also assume that firms with low visibility, i.e. low stock liquidity are more likely to accept a takeover offer by a private equity investor.[151] The reason is that low visibility impairs firms from reaping the benefits of a listing, such as raising relatively cheap capital (Boot et al. (2008)). Taking into account the substantial listing and compliance costs, such firms may be more inclined towards accepting the opportunity of going private offered by a private equity investor.

H7 (stock liquidity): The likelihood of a firm being taken over by a private equity investor is negatively related to the liquidity of its stock.

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[151] The question arises as to whether stock liquidity is just a proxy for concentrated ownership and control. However, the correlation between liquidity and the percentage of voting rights (cash flow rights) held by the ultimate controlling shareholder is only -0.27 (-0.28).

Table 3-1: Hypotheses, variables, definitions and expected signs

This table summarizes the hypotheses, the variables used to test them and the predicted effect of each variable on the likelihood of a private equity acquisition.

Hypotheses	Variables	Definitions	Expected Impact on Likelihood of Being Taken Over by Private Equity Investor
H1 (monitoring): The probability of a firm being taken over by a private equity investor decreases if there is an active, monitoring shareholder.	CFR	Percentage of cash flow rights held by the ultimate controlling shareholder if he is not part of the management, and zero otherwise.	-
	CFR * Type	Interaction term of CFR with one of the dummy variables measuring the type of the ultimate controlling shareholder (family, government, bank, insurance company, corporation, holding and others).	- for "good" monitors and + for "bad" monitors
	CFR * Type * Performance	Interaction term of CFR * Type with Accounting Performance. Accounting Performance is the ratio of earnings before interest and taxes (EBIT) to Total Assets.	- for "good" monitors and + for "bad" monitors
H2 (private benefits): Companies with large shareholders who enjoy private benefits of control are less likely to be the target of private equity investors.	VR	Percentage of voting rights held by ultimate controlling shareholder.	(-)
	VR-CFR	Difference between the percentage of voting rights held by the ultimate controlling shareholder and the percentage of cash flow rights he holds.	-
	VR/CFR	Ratio of the percentage of voting rights held by the ultimate controlling shareholder over the percentage of cash flow rights he holds.	-
	VR * Type	Interaction term of VR with one of the dummy variables measuring the type of the ultimate controlling shareholder (family, government, bank, insurance, corporation, holding and others).	- for "good" monitors and + for "bad" monitors

Table 3-1: Hypotheses, variables, definitions and expected signs (continued)

Hypotheses	Variables	Definitions	Expected Impact on Likelihood of Being Taken Over by Private Equity Investor
	*(VR-CFR) * Type*	Interaction term of *VR-CFR* with one of the dummy variables measuring the type of the ultimate controlling shareholder (family, government, bank, insurance, corporation, holding and others).	- for large shareholders that are likely to expropriate their minority shareholders
	*VR/CFR * Type*	Interaction term of *VR/CFR* with one of the dummy variables measuring the type of the ultimate controlling shareholder (family, government, bank, insurance, corporation, holding and others).	- for large shareholders that are likely to expropriate their minority shareholders
H3 (management): Private equity firms are more likely to invest in companies with relatively low or relatively high managerial ownership.	*Mgmt_Prof and Mgmt_Prof²*	*Mgmt_Prof* is the sum of all first-tier voting stakes of the firm's *professional* executive managers, i.e. all executive managers which are not related or identical to the ultimate shareholder.	- and +, respectively
H4 (tax benefit from leverage): The likelihood of being taken over by a private equity investor is higher for companies with low leverage ratios and high tax liabilities.	*Leverage*	*Leverage* is defined as total debt over enterprise value in the financial year preceding the announcement date (AD) of the private equity acquisition. Enterprise value is defined as market capitalisation plus net debt. Net debt is total debt minus cash holdings. Cash represents cash and short term investments (Axelson et al. (2010)).	-
	Tax	*Tax* is tax payments expressed as a percentage of operating income before depreciation and amortization in the financial year preceding the announcement date of the private equity acquisition.	+
	Tax/Leverage	The ratio of *Tax* over *Leverage*	+

Table 3-1: Hypotheses, variables, definitions and expected signs (continued)

Hypotheses	Variables	Definitions	Expected Impact on Likelihood of Being Taken Over by Private Equity Investor
	Tax Rate	The statutory corporate tax rate of the country where the target has its headquarters which applied in the year preceding the announcement date of the private equity acquisition.	
H5 (bonding advantage of leverage): Private equity investors prefer taking over companies with both low leverage and high free cash flow levels.	*Leverage*	*Leverage* is defined as total debt over enterprise value in the financial year preceding the announcement date of the private equity acquisition. Enterprise value is defined as market capitalisation plus net debt. Net debt is total debt minus cash holdings. Cash represents cash and short term investments (Axelson et al. (2010)).	-
	FCF	*FCF* is operating income before depreciation and amortization minus tax, interest and dividend payments (Lehn/Poulsen (1989)) a percentage of total assets.	+
	FCF/Tobin	The ratio of FCF over Tobin's Q (defined as the market value of total assets divided by their book value)	+
H6 (risk): Private equity investors are more likely to take over companies with stable cash flows.	*CashFlowVolatility*	*CashFlowVolatility* is defined as the standard deviation of the logarithm of EBITDA over the five years preceding the private equity acquisition.	-
H7 (stock liquidity): The likelihood of a firm being taken over by a private equity investor is negatively related to the liquidity of its stock.	*Liquidity*	The daily average number of shares traded over the 250-day window (starting 290 days before the announcement day) divided by the number of shares outstanding.	-

3.3 Methodology and data

This section starts with the description of the sample selection process, followed by the construction of the control sample of non-acquired firms. The section finishes with a discussion of the definition of the variables. The hypotheses, which were developed in the previous section, are listed in Table 3-1 alongside the variables used to test them and the predicted effect of each variable on the likelihood of a private equity acquisition. The methodology we employ to test the hypotheses consists of the following binomial logit:

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

The dependent variable in the logit is set to one if the firm is taken over by a private equity investor during the period of study and zero otherwise.

3.3.1 Sample selection process

We first identify all private equity acquisitions in continental Europe.[152] As stated in the introduction, we adopt Weir et al.'s (2008a) definition of a private equity transaction. Such a transaction consists of the acquisition of a publicly quoted company, usually by a newly incorporated unlisted company specifically set up for the purpose of the deal (Jensen (1993)). The bid often takes the form of a leveraged buyout (LBO) involving mainly debt financing. As stated in the introduction, contrary to other empirical studies, such as Halpern et al. (1999) who focus on management buy-outs (MBOs), we study those transactions that are sponsored by private equity investors not related to the management and, in particular, the motives behind these transactions.[153]

We obtain a list of private equity deals of continental European firms from Thomson Securities Data Corporation (SDC) Platinum, Mergermarket and Private Equity

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[152] Our definition of continental Europe is the European landmass, which excludes the island states (e.g. the UK, Ireland, Iceland, Malta and Cyprus) and Russia.

[153] See also footnote 142.

Insight.[154] We extract the list of all completed transactions announced between 1 January 1997 and 31 July 2007.[155] The number of private equity acquisitions of continental European firms during this period amounts to approximately 0.29% of the number of listed companies.[156] We then exclude all deals that involve financial firms as targets given that their balance sheets differ markedly from those of non-financial firms. This results in a preliminary sample of 193 potential private equity backed going private transactions. To ensure the accuracy of our sample, we perform the following two checks.

First, for each transaction, we double-check whether it is carried out by private equity investors by examining each acquirer's mission statement and investment track record as reported on its web pages and in the financial press. Any remaining doubts are addressed by consulting industry experts. Any acquirer who predominantly buys majority stakes (as opposed to minority stakes which tend to be bought by hedge funds) in mature companies (as opposed to venture capitalists who invest in young companies) and for a limited investment horizon (as opposed to strategic buyers who invest over the long run) is considered to be a private equity investor. In case a bank is stated as the acquirer, we check whether the transaction was carried out by the bank's private equity arm. If this is not the case, the transaction is excluded. Similarly, we also verify whether transactions by formerly pure private equity investors such as Blackstone, which have now evolved into organisations offering a range of financial services and advice, have been carried out by their private equity divisions. We reject a total of 25 transactions which do not satisfy these criteria.

Second, we check whether the remaining transactions result in the target firm going private. We proceed by determining the target's delisting date via the examination of the time series of its stock prices and corroborate our findings through press

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[154] Private Equity Insight is sourced from Incisive Media, a data provider specialising in private equity deals information.

[155] Mergermarket and Private Equity Insight do not cover transactions before 1998.

[156] Our calculations are based on all listed companies, including financial firms.

searches.[157] Overall, we identify 32 transactions which cannot be classified as going private transactions and thus have to be excluded from our sample.

Of the remaining 136 firms, comprehensive data cannot be obtained for 21 companies despite our best efforts.[158] This leaves us with a final sample of 115 continental European firms which have been taken private by private equity investors between 1 January 1997 and 31 July 2007.

3.3.2 Control sample

The control sample is selected from the population of listed firms covered by Thomson One Banker. We apply a similar algorithm as in Weir et al. (2005), North (2001) and Klein/Zur (2009) to obtain a match for each of our private equity targets. The algorithm consists of the following steps. First, we identify all the public companies which have their headquarters in the same country as the private equity target. Second, we retain those companies which operate in the same two-digit SIC industry. In case there are fewer than 5 potential matches,[159] we base ourselves on the one-digit SIC code.[160] Third, the matching firm is then the firm whose sales figure is closest to that of the private equity target. Finally, we check whether all of the matched firms stay public for at least two years after the announcement date (AD) of the private equity acquisition for the firm for which they serve as a match. All matched firms satisfied this criterion.

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[157] This two-step procedure is important as can be seen from the example of MobilCom AG / Freenet AG. In May 2005, the private equity investor Texas Pacific Group bought a stake in Mobilcom. Subsequently, Mobilcom merged with Freenet and as a result the former's stock exchange listing ceased. However, the merged company returned to the stock exchange immediately after the merger had become effective. Hence, it is important to remove such transactions from the sample as they are clearly not going private transactions.

[158] See section 3.3.1 and in particular footnote 17.

[159] North (2001) sets the minimum for his US based study to 10 firms. Due to the smaller size of the continental European capital markets, we set the minimum to 5 firms.

[160] Twenty-three private equity targets out of a total of 115 had to be matched based on the one-digit SIC code.

3.3.3 Data sources and definitions of variables

3.3.3.1 Data sources

The source for stock and accounting data is Thomson Datastream. If required, we consult Worldscope, CapitalIQ and the firms' annual reports to fill in any missing information. Accounting data are collected for the closest available fiscal year preceding the announcement date of the private equity acquisition. We use consolidated accounting data. In order to ensure that our results are not driven by outliers, we winsorize both accounting and stock based variables at the first and 99th percentile.

Our main data source for control and ownership is Bureau Van Dijk's Amadeus.[161] Both control and ownership are measured at the ultimate level (see section 3.3.3.2). The data from Amadeus were cross-checked using a wide range of other databases.[162] We use the annual reports to determine whether any of the large shareholders reported by Amadeus are part of the management.

3.3.3.2 Definitions of variables

In what follows, we define *control* as ownership of voting rights and *ownership* as ownership of cash flow rights. A shareholder is considered to be *the* controlling shareholder if he holds at least 25% of the voting rights and has the largest stake in the company. The ultimate controlling shareholder is defined as the largest shareholder, holding at least 25% of the votes, including via intermediate layers such as uninterrupted multiple chains of control, and in turn is not controlled by another large shareholder. In other words, the ultimate shareholder is a family (or individual) or the

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[161] As our starting point, we use the historical snapshots of control and ownership from Amadeus taken at the end of January, April, July and October of each year. From 1997 to 2002, we rely on the semi-annual snapshots for April and October. Robustness checks with other data sources, however, confirm that control is relatively stable. Hence, our results should not be affected by this limitation.

[162] The other ownership data sources include (1) primary sources such as the companies' annual reports and websites as well as direct requests addressed to the companies, (2) stock market or regulatory authorities such as the Commissione Nazionale per la Società e la Borsa (Consob) for the Italian firms, (3) other commercial databases and company directories such as Hoppenstedt Aktienführer for the German firms, (4) press searches based on Factiva (5) and web searches based on Google.

government as control by definition resides with these. Alternatively, it will be a bank, an insurance company, an industrial or commercial corporation or a holding company as long as these are widely held and do not have a large controlling shareholder.

Hypothesis 1, which states that firms with an active, monitoring shareholder are less likely to be taken over by a private equity investor, is tested using three different proxies for the presence of a large monitoring shareholder. The incentive for a shareholder to monitor the management is ownership in the company. The higher the ownership, the higher is the incentive to monitor. Further, in order to be an effective and independent monitor, we assume that the large monitoring shareholder is not part of the management. In other words, we consider that monitoring is unlikely to be effective if e.g. a firm is owned mainly by a family who also manages the firm.[163] This assumption applies to all three proxies. The first proxy is *CFR* which is the percentage of cash flow rights held by the ultimate controlling shareholder. The second proxy is the interaction term of *CFR* with one of the dummy variables indicating the type of the largest shareholder. We distinguish between families, the government, banks, insurance companies, industrial and commercial corporations, holding companies and other shareholders. The latter include foundations, charities, voting pacts, pension funds, employee trusts and cooperatives. Except for the government, we expect that all other types of large shareholder monitor the management. The third proxy is similar to the previous one, but also takes into account the past track record of the large shareholder as measured by the firm's accounting performance. Accounting performance is the ratio of earnings before interest and tax (EBIT) over total assets. In other words, this proxy enables us to distinguish between active monitors with a good past track record and those who have failed to turn around their company. The latter are more likely to be favourably inclined towards a takeover offer from a private equity investor.

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[163] Our definition of the management is executive directors sitting on the board. In the case of a unitary board, as is the case in most French firms, these are the directors who do not hold non-executive positions. In the case of a two-tier board, they are the members of the management board (e.g. the Vorstand for German firms) as opposed to the members of the supervisory board (e.g. the Aufsichtsrat for German firms).

Hypothesis 2 states that companies with large shareholders enjoying private benefits of control are less likely to be the targets of private equity investors. The validity of this hypothesis is tested using three different proxies for private benefits of control. The three proxies are as follows. The first proxy is *VR*, the percentage of voting rights held by the ultimate controlling shareholder. The second proxy, *VR-CFR*, is the difference between the percentage of voting rights and the percentage of cash flow rights held by the ultimate controlling shareholder. The third proxy is *VR/CFR*, the ratio of the percentage of votes over the percentage of cash flow rights held by the ultimate controlling shareholder. In addition, we also interact these proxies with each of the dummy variables indicating the type of the largest shareholder (as stated above). We expect that families are more likely to enjoy private benefits of control compared to all other types of ultimate shareholder.

Our measures for the monitoring incentives and the private benefits of control of the large shareholder are in line with Claessens et al. (2002). They also measure the incentives of the large shareholder to monitor the management by the percentage of cash flow rights s/he owns and her/his private benefits of control (they use the term "entrenchment") by her/his percentage of voting rights. They find that the value of firms from eight East Asian countries increases with the large shareholder's cash flow rights, but decreases if the percentage of her/his voting rights exceeds that of her/his cash flow rights.

According to Hypothesis 3, companies with relatively low or relatively high ownership by professional managers, i.e. managers not related to the large shareholder, are more likely to become targets of private equity investors. The validity of this hypothesis is tested using *Mgmt_Prof* and *Mgmt_Prof*^{2}. The former is the sum of all voting rights held by the management and the latter is the square of the former. Given the non-linear relationship stated by Hypothesis 3, we expect a negative sign on *Mgmt_Prof* and a positive sign on *Mgmt_Prof*^{2}.

Hypothesis 4 on the tax benefit from leverage is tested using four different proxies. The first one is *Leverage*, defined as total debt over enterprise value. Enterprise value is defined as market capitalisation plus net debt. Net debt is total debt minus cash

holdings. Cash represents cash and short term investments. This definition is line with Axelson et al. (2010). The second proxy is *Tax*, which is the firm's tax payments expressed as a percentage of operating income before depreciation and amortization. The third proxy, *Tax/Leverage*, is the ratio of the latter over the former. The final proxy is *Tax Rate*, the statutory corporate tax rate which applied to the year preceding the acquisition announcement in the country of the firm's headquarters.

Hypothesis 5 on the bonding advantage of debt (i.e. its role of mitigating Jensen's (1986) free cash flow problem) is tested using *FCF*, i.e. operating income before depreciation and amortization minus tax, interest and dividend payments over total assets. We expect a positive sign on the variable's coefficient. As Opler/Titman (1993) find that, on its own, the level of free cash flow does not seem to have an impact on the likelihood of a firm being taken over, but that it does in the absence of strong growth opportunities, we also use the ratio of *FCF* over the firm's Tobin's Q, the latter being our proxy for the firm's growth opportunities. *Tobin* is defined as the ratio of the firm's market value of the assets divided by the replacement cost of the assets.[164] Firms with a Tobin's Q of less than one have no growth opportunities. The expected sign for the variable's coefficient is positive.

Hypothesis 6 is on cash flow volatility and its negative impact on the likelihood of the firm becoming the target of a private equity investor. *CashFlowVolatility* is defined as the standard deviation of the logarithm of earnings before interest, taxes, depreciation and amortization (EBITDA) over the five years preceding the year of the announcement of the private equity acquisition. We expect the coefficient on the variable to be negative.

Finally, according to Hypothesis 7 there should be a negative impact of stock liquidity on the likelihood of the firm becoming a target of a private equity acquisition. Liquidity is measured by the average for the daily number of the firm's shares traded over the 250-day window (starting 290 days before the announcement day) divided by the number of shares outstanding.

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[164] Similar to other studies (e.g. Malmendier/Tate (2008)), we use the book value of the assets as the replacement cost for the assets is not normally available.

3.4   Empirical results

3.4.1   Descriptive statistics

Table 3-2 shows the geographic distribution of our continental European private equity acquisitions. France has by far the highest number of transactions followed by Germany, the Netherlands and Sweden each with at most half that number.

Table 3-2: Number of PE transactions across continental Europe for 1997 to 2007

This table reports the distribution of private equity transactions across the countries, where the targets are headquartered.

Country	Number of private equity transactions	Percentage of private equity transactions
France	35	30.4%
Germany	18	15.7%
Netherlands	14	12.2%
Sweden	13	11.3%
Denmark	8	7.0%
Norway	7	6.1%
Spain	5	4.3%
Italy	4	3.5%
Finland	4	3.5%
Hungary	3	2.6%
Austria	2	1.7%
Belgium	1	0.9%
Luxembourg	1	0.9%
Total	**115**	**100.0%**

Table 3-3 reports the number and size (as measured by enterprise value) of continental European private equity acquisitions over time. The highest number of deals (i.e. 23) occurred in 1999 while the largest total size of the deals is observed in 2006 which also has the largest average deal size. More generally, there has been a gradual increase in the average deal size over the entire period until the first half of 2007 when

the average deal size dropped from more than €1bn to less than half that amount.[165] This trend mirrors the increasing availability of cheap debt (Axelson et al. (2010)).

Table 3-3: Number and enterprise values of private equity targets across time

This table shows the number private equity transactions which were announced during 1997 and 2007 and successfully delisted by July 2007. The table also reports descriptive statistics for enterprise values (EV). Year denotes the year of the announcement of the private equity acquisition. Enterprise value is defined as market capitalisation plus net debt at the end of the financial year prior to the transaction announcement. Net debt is total debt minus cash holdings. Cash represents cash and short term investments. This definition is line with Axelson et al. (2010).

Year	# of Private equity transactions	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	23	4,144	180	152	15	653
2000	14	3,994	285	222	30	1,402
2001	7	1,956	279	106	22	738
2002	12	3,146	262	204	17	708
2003	14	4,336	310	111	7	1,548
2004	16	12,807	800	592	52	2,789
2005	10	10,641	1,064	563	28	4,325
2006	13	14,257	1,097	375	36	6,890
Jan. - Jul. 2007	4	1,893	473	124	33	1,612
Total	**115**	**57,199**	**497**	**184**	**6**	**6,890**

Table 3-4 reports the concentration of control and the importance of the various types of ultimate shareholders for the sample of private equity acquisitions and the control group of non-targets. The percentage of closely held firms is about 71% in both samples. While families are the most important type of ultimate shareholders in both samples, they are relatively more important in the sample of non-targets where they control the majority of firms compared to the sample of private equity acquisitions

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[165] When all of the ten 2007 transactions (i.e. all those completed by October 2008) are taken into account, the total deal size and average deal size are in line with those from previous years with a value of about €8.3bn and €834m, respectively.

where they only control a third of the firms. The second most important type of ultimate shareholders in both samples is corporations.

Table 3-4: Control and type of ultimate controlling shareholder

This table reports the control stake and the type of the ultimate controlling shareholder. The ultimate controlling shareholder is defined as the largest shareholder, holding at least 25% of the votes taking into account dual-class shares, ownership pyramids and multiple control chains. We distinguish between families, governments, banks, insurance companies, industrial and commercial corporations, holding companies and other shareholders. The latter include foundations, charities, voting pacts, pension funds, employee trusts and cooperatives.

	Private equity transactions		Control group	
	%	#	%	#
Family	32.2%	37	51.3%	59
Government	7.0%	8	1.7%	2
Bank	5.2%	6	1.7%	2
Insurance company	0.9%	1	0.0%	0
Corporation	13.0%	15	9.6%	11
Holding company	5.2%	6	3.5%	4
Others	7.0%	8	3.5%	4
All companies with an ultimate owner (25%)	70.4%	81	71.3%	82
Widely held companies (25%)	29.6%	34	28.7%	33

Table 3-5 reports descriptive statistics for the monitoring incentives of the ultimate controlling shareholder and the latter's monitoring track record (based on the accounting performance in the year preceding the year of the announcement) in Panel A as well as the latter's private benefits of control in Panel B. As stated in section 3.3.3.2, monitoring incentives are proxied by the size of the ultimate shareholder's ownership stake in the firm whereas private benefits of control are measured by the following three proxies. The first proxy is the voting rights held by the ultimate shareholder. The second is the difference between the percentage of voting rights and the percentage of cash flow rights held by the ultimate controlling shareholder. The larger this difference, the higher we expect the potential private benefits of control to be. The third one is the ratio of the percentage of votes over the percentage of cash flow rights. Two important remarks apply to the way the descriptives in Table 3-5

have been computed. First, it may be the case that only those families that are *not* part of the firm's management have monitoring incentives. Consequently, it makes sense to set the monitoring incentives to zero for all controlling families which are part of the management. In the private equity sample, only 10 out of the initially 37 family controlled firms (27%) have monitoring incentives (i.e. the family is not part of the management) while in the control sample 22 out of the initially 59 controlled firms (37%) have monitoring incentives. This is in line with Hypothesis 1. We report both the descriptives based on the family-controlled firms with monitoring incentives, i.e. the 10 (22) family firms in the private equity (control) sample where the controlling family is *not* part of the management, and the descriptives for *all* the family-controlled firms, i.e. the 37 (59) family firms in the private equity (control) sample. For the latter, the monitoring incentives for the 27 (37) controlling families which are part are of the management are reported as being zero. Second, in Panel B we report the descriptives for *VR-CFR* and *VR/CFR* for only those firms where there is a difference between the voting rights and the ownership rights held by the ultimate controlling shareholder. Panel B shows that for firms ultimately controlled by families and those ultimately controlled by corporations deviations from the one-share one-vote rule are relatively more common in the control group compared to the sample of private equity targets.

Panel A lends support to Hypothesis 1 which states that the probability of a takeover by a private equity investor decreases for firms with an active, monitoring shareholder. When we exclude families, that are also part of the management, from the sample, then the ultimate controlling shareholder of the average private equity target holds 43.1% of the cash flow rights compared to 49.3% for the control group. However, when we include all family-controlled firms and set the monitoring incentives of those families that are part of the management equal to zero then there is virtually no difference between the sample of private equity targets and the control group.[166] Still,

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[166] The reason why there is no longer a difference between the two samples is that, compared to the private equity sample, the control sample now includes an additional 37 firms that are ultimately controlled by a family compared to only an additional 27 firms for the private equity firms. As for these firms the family is also part of the management, we set the monitoring incentives of the family equal to zero. Hence, we end up with slightly lower average monitoring incentives in the control sample than in the private equity targets. The question arises as to whether the fact that the family is part of the management is a proxy for private benefits of control. Indeed, so far we have

firms that are both family controlled and targets of private equity investors have lower monitoring incentives than the non-acquired firms forming the control group. This pattern is in line with Hypothesis 1. Similarly, for firms controlled by holding companies, the monitoring incentives are also less pronounced in the private equity sample than in the control group. The average stake of cash flow rights of 38.1% in the private equity sample compares to 40.4% in the control group. However, for the remaining types of ultimate controlling shareholders (i.e. the government, banks, and corporations) the converse pattern is observed. For example for firms controlled by corporations, the average stake of cash flow rights in the private equity targets is 65.2% compared to only 56.7% in the control group.[167] Panel A of Table 3-5 also reports descriptives for the performance of the ultimate shareholder as a monitor. Our measure is the monitoring incentives of the ultimate controlling shareholder interacted with the accounting performance of the firm in the year preceding the year of the announcement. We expect monitoring performance to be worse for the private equity targets. However, there is no indication from the descriptives that this is the case.

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assumed that being part of the management reduces the family's incentives to monitor the executives of the firm. However, the family may choose to be part of the management team to extract (further) benefits of control from the firm. In order to test this alternative interpretation, we check the correlations between management team membership on one side and our various measures of private benefits on the other side for firms that are ultimately controlled by families. However, the correlation coefficients are very small.

[167] Still, Panel B shows that firms controlled by corporations in the control group have higher private benefits of control than those in the sample of private equity targets.

Table 3-5: Monitoring incentives and private benefits of control across types of ultimate controlling shareholders

This table reports descriptive statistics for the monitoring incentives of the ultimate controlling shareholder in Panel A as well as the latter's private benefits of control in Panel B. Monitoring incentives are proxied by the size of the ultimate controlling shareholder's ownership stake in the form of cash flow rights (CFR). Private benefits of control are measured by the following three proxies. The first proxy is the voting rights held by the ultimate controlling shareholder (VR). The second one is the difference between the percentage of voting rights and the percentage of cash flow rights held by the ultimate controlling shareholder (VR-CF). The third one is the ratio of the percentage of votes over the percentage of cash flow rights (VR/CFR). The statistics are all calculated conditional on the existence of CFR*Type / VR*Type / VR-CFR*Type / VR/CFR*Type. For example, the mean for CFR*Bank is based on those firms only that are ultimately controlled by a bank. In addition, with respect to the variables CFR*Family and CFR * family * performance in Panel A, we consider only those families that are not part of the firm's management to have monitoring incentives. Consequently, we set CFR, our proxy for monitoring incentives, to zero for all controlling families which are part of the management.
[a] The CFR, our proxy for the monitoring incentives, is set to zero for families which are part of the management. [b] The sample average is based on the family-controlled firms which are not part of the management. The other 27 family-controlled firms are excluded from the average. [c] The sample average is based on all family-controlled firms.

Panel A: Monitoring incentives across types of ultimate controlling shareholder

Variable	Private equity transactions						Control group					
	n	Mean	St. Dev.	Med.	Min.	Max.	n	Mean	St. Dev.	Med.	Min.	Max.
CFR * family (only families which are *not* part of the management)	10	30.5	12.5	28.7	8.1	51.1	22	49.3	25.0	51.6	4.3	83.3
(CFR * family (all families[a]))	37	8.2	15.1	0	0	51.1	59	18.4	28.3	0	0	83.3
CFR * government	8	26.3	15.7	20.1	12.8	61.8	2	18.5	9.9	18.5	11.4	25.5
CFR * bank	6	40.6	25.0	29.3	14.2	79.0	2	28.1	2.1	28.1	26.6	29.5
CFR * corporation	15	65.2	21.7	64.2	29.6	92.6	11	56.7	19.0	57.0	29.1	90.0
CFR * holding	6	38.1	9.0	36.3	29.1	50.0	4	40.4	18.0	35.8	25.0	65.0
Sample average[b]	*54*	*43.1*	*22.5*	*33.4*	*8.1*	*92.6*	*45*	*49.3*	*22.9*	*50.1*	*4.3*	*90.0*
(Sample average[c])	*81*	*28.7*	*27.5*	*27.9*	*0*	*92.6*	*82*	*27.1*	*29.9*	*14.8*	*0*	*90*
CFR * family * performance (only families which are not part of the management)	10	3.1	2.3	2.7	0.6	7.9	22	3.5	7.2	1.8	-9.3	24.1
(CFR * family * performance (all families[a]))	37	0.8	1.8	0	0	7.9	59	1.3	4.6	0	-9.3	24.1
CFR * government * performance	8	2.6	2.6	1.5	0.6	8.3	2	0.9	0.2	0.9	0.8	1.0
CFR *bank * performance	6	4.2	3.8	3.4	0.1	8.9	2	2.5	0.5	2.5	2.1	2.9
CFR * corporation * performance	15	6.6	6.9	4.1	-1.2	20.4	11	7.5	7.2	5.2	1.7	26.7
CFR * holding * performance	6	2.4	3.1	3.2	-3.3	5.3	4	0.4	9.0	2.5	-12.4	8.7
Sample average[b]	*54*	*4.2*	*4.8*	*3.1*	*-3.3*	*20.4*	*45*	*4.1*	*7.2*	*2.9*	*-12.4*	*26.7*
(Sample average[c])	*81*	*3.0*	*4.3*	*1.4*	*-3.3*	*20.4*	*82*	*1.8*	*6.2*	*0*	*-20.7*	*26.7*

Table 3-5: Monitoring incentives and private benefits of control across types of ultimate controlling shareholders (continued)

Panel B: Private benefits across types of ultimate controlling shareholder

Variable	Private equity transactions						Control group					
	n	Mean	St. Dev.	Med.	Min.	Max.	n	Mean	St. Dev.	Med.	Min.	Max.
VR * family	37	51.1	19.9	50.0	26.0	100.0	59	60.5	17.7	58.2	25.0	100.0
VR * government	8	37.3	12.7	33.2	25.1	65.5	2	33.3	11.0	33.3	25.5	41.0
VR * bank	6	43.8	22.0	31.4	27.9	79.0	2	28.1	2.1	28.1	26.6	29.5
VR * corporation	15	65.2	21.6	64.2	29.6	92.6	11	62.1	21.1	57.0	30.0	94.0
VR * holding	6	38.9	8.2	36.4	29.7	50.0	4	41.4	19.4	35.8	25.4	68.4
Sample average	*81*	*50.4*	*20.3*	*48.0*	*25.1*	*100.0*	*82*	*58.5*	*19.0*	*57.0*	*25.0*	*100.0*
VR-CFR *family	10	20.3	9.0	21.0	7.5	35.9	33	19.1	14.2	12.6	3.9	50.0
VR-CFR *government	7	12.5	7.9	12.3	2.0	24.0	1	29.6	.	29.6	29.6	29.6
VR-CFR * bank	1	19.2	.	19.2	19.2	19.2	0	.	.	.	.	.
VR-CFR * corporation	1	1.5	.	1.5	1.5	1.5	3	19.7	9.3	24.5	9.0	25.7
VR-CFR * holding	1	4.6	.	4.6	4.6	4.6	2	1.9	2.1	1.9	0.4	3.4
Sample average	*25*	*15.0*	*9.1*	*16.3*	*0.7*	*35.9*	*39*	*18.6*	*13.9*	*12.6*	*0.4*	*50.0*
VR/CFR * family	10	2.0	0.9	1.7	1.1	4.0	33	2.1	2.2	1.3	1.1	11.0
VR/CFR * government	7	1.7	0.5	2.0	1.1	2.3	1	3.6	.	3.6	3.6	3.6
VR/CFR * bank	1	2.3	.	2.3	2.3	2.3	0	.	.	.	.	.
VR/CFR * corporation	1	1.0	.	1.0	1.0	1.0	3	1.4	0.1	1.4	1.3	1.5
VR/CFR * holding	1	1.2	.	1.2	1.2	1.2	2	1.0	0.0	1.0	1.0	1.1
Sample average	*25*	*1.7*	*0.7*	*1.6*	*1.0*	*4.0*	*39*	*2.1*	*2.0*	*1.3*	*1.0*	*11.0*

Panel B lends support to Hypothesis 2 which states that companies with large shareholders who enjoy private benefits of control are less likely to be the target of private equity investors. The ultimate controlling shareholder of the average private equity target holds 50.4% of the votes whereas the equivalent figure for the control group is higher with 58.5%. Furthermore, we document a violation of the one-share one-vote principle in only 25 private equity targets compared to 39 companies in the control group. For those firms where there is a violation of the one-share one-vote rule (as measured by *VR-CFR* and *VR/CFR*, respectively), the wedge between the percentage of votes and the percentages of cash flow rights held by the ultimate controlling shareholder is higher for the control group (18.6% and 2.1, respectively) than for the sample of private equity targets (15.0% and 1.7, respectively). This pattern lends support to Hypothesis 2. When the type of ultimate controlling shareholder is taken into account, the pattern seems to be primarily driven by families. The ultimate controlling family in the private equity sample owns on average 51.1% of the votes whereas it owns on average 60.5% in the control sample. In addition, there is a violation of the one-share one-vote rule in only 10 of the 37 (27%) family-controlled private equity targets compared to 33 of the 59 (37%) family-controlled peer firms. However, for the remaining types of ultimate controlling shareholders (i.e. holdings, the government, banks, and corporations) the evidence is less in line with Hypothesis 2. For example, the percentage of votes held by ultimate controlling shareholders who are governments, banks and corporations is lower in the control group than in the sample of private equity targets.

The results from Table 3-5 can be summarised as follows. While there is generally support for Hypothesis 1 and Hypothesis 2 it is also important to take into account the type of ultimate controlling shareholder. The hypotheses seem to hold well for firms that are ultimately controlled by families, but less well for those firms ultimately controlled by other types of shareholders.

Table 3-6 reports descriptive statistics for the secondary variables. As was the case for the previous two tables, we report the descriptive statistics separately for the private equity targets and the control group of non-acquired firms.

Table 3-6: Secondary variables - private equity transactions versus control group

This table reports descriptive statistics for the secondary variables as defined in Table 3-1.

	Private equity transactions					Control group					Statistical test	
Variable	Mean	St. Dev.	Med.	Min.	Max.	Mean	St. Dev.	Med.	Min.	Max.	T-test (p-values)	Ranksum (p-values)
Liquidity	1.71	1.94	1.00	0.00	8.08	2.76	3.97	1.33	0.00	19.57	0.012 **	0.079 *
CashFlowVolatility	0.67	1.03	0.30	0.07	4.80	0.93	1.26	0.35	0.07	4.80	0.097 *	0.039 **
Leverage	0.29	0.23	0.25	0.00	1.18	0.38	0.28	0.33	0.00	1.18	0.010 **	0.021 **
FCF	0.08	0.07	0.09	-0.21	0.24	0.07	0.08	0.08	-0.26	0.24	0.162	0.145
FCF/Tobin	0.10	0.09	0.09	-0.18	0.48	0.07	0.12	0.08	-0.69	0.35	0.025 **	0.032 **
Tobin	1.05	0.58	0.90	0.30	3.47	1.14	0.80	0.83	0.32	3.50	0.338	0.684
Tax/Leverage	24.39	228.60	0.66	-0.54	2452.77	4.27	18.36	0.50	-0.70	168.54	0.348	0.152
Tax	0.17	0.13	0.18	-0.22	0.84	0.17	0.22	0.17	-0.38	0.99	0.950	0.839
Tax Rate	35.36	7.60	35.00	16.00	56.80	35.36	7.60	35.00	16.00	56.80	1.000	1.000
Size	584.97	973.58	230.49	12.18	5529.00	446.64	829.12	192.66	12.18	5529.00	0.247	0.175
Mgmt_Prof	1.81	5.63	0.00	0.00	34.60	2.41	6.51	0.00	0.00	38.04	0.450	0.300

The table shows that there is no significant difference in managerial ownership between the private equity targets and the control group. The range of managerial ownership is also very similar for both groups of companies with a range of 0% to 34.6% for the private equity targets and a range of 0% to 38.0% for the control group. While Hypothesis 3 states that private equity investors are more likely to acquire firms with relatively low or relatively high managerial ownership, Table 3-6 does not provide any evidence in favour of this hypothesis. Conversely, the average and the median for leverage are significantly lower for the private equity targets which supports the tax benefit (Hypothesis 4) and/or bonding advantage (Hypothesis 5) of leverage. With respect to the former, however, none of our measures for the tax shield from more debt (i.e. *Tax*, *Tax Rate* and *Tax/Leverage*) is significantly different from zero across the two samples. With respect to the latter, the ratio of free cash flow over Tobin's Q is significantly higher for the private equity targets than the control firms, i.e. private equity investors seem to prefer companies with high debt capacity in order to reduce agency costs of free cash flows encountered in mature (low-growth) firms. Hence, the evidence from Table 3-6 provides more support for the bonding advantage of leverage (Hypothesis 5) than the tax benefit (Hypothesis 4). There is also evidence in support of Hypothesis 6 as private equity targets have both significantly lower average and median cash flow volatility compared to the control group of non-acquired firms. Finally, there is also support in Table 3-6 for Hypothesis 7 as private equity targets have significantly lower average and median stock liquidity than the control group. To summarise the results from Table 3-6, the hypotheses relating to the secondary variables are in general supported by the data.

3.4.2 Multivariate results

While the aggregate descriptive statistics provided support for Hypothesis 1 and Hypothesis 2, it also seems important to take into account the type of ultimate controlling shareholder. Indeed, the support for both hypotheses mainly stems from the firms ultimately controlled by families and less so for those firms controlled by other types of shareholders. In order to provide a rigorous test on our monitoring and private benefits arguments (Hypotheses 1 and 2) we run multivariate logistic regressions which simultaneously take all of our explanations into account.

In what follows, we shall start with the discussion as to the validity of the monitoring and private benefits arguments. In a second instance, we shall present the regression results relating to the secondary explanations.

3.4.2.1 *Monitoring incentives and private benefits of control*

Table 3-7 focuses on the monitoring incentives of the ultimate controlling shareholder (Hypothesis 1) whereas Table 3-8 focuses on the potential private benefits of control enjoyed by the latter (Hypothesis 2). Model 1 of Table 3-7 suggests that Hypothesis 1 is not valid. Indeed, the percentage of cash flow rights held by the ultimate controlling shareholder does not have a significant impact on the likelihood of the firm being taken over by a private equity investor. However, when the type of the ultimate controlling shareholder (families, governments, banks, corporations, and holding firms) is taken into account (as is the case in Models 2-4), firms controlled by families that have strong monitoring incentives are less likely private equity targets than firms controlled by any other type of shareholders. The coefficient on the interaction between the monitoring incentives and the family dummy is significant at the 1% level in Model 2 and Model 4. Model 3 and Model 4 further investigate the validity of the monitoring hypothesis by taking into account the monitoring skills of the ultimate controlling shareholder. Monitoring skills are measured by the firm's accounting performance in the year preceding the announcement of the private equity transaction. In Model 3, the coefficients on the interaction terms between monitoring incentives and monitoring skills for firms controlled by the government and those controlled by banks are positive and significant at the 5% and 10% level, respectively. This result is somewhat counterintuitive as it suggests that firms controlled by governments and banks with good monitoring track records – as evidenced by good accounting performance – are more likely to be targeted by private equity investors. One reason for this result may be that rather than monitoring the firms they invest in governments and banks may just time the sale of their firms to coincide with a period of good performance. This would be in line with the previous empirical research which has found governments to be weak or bad monitors and shown mixed results for banks. However, this result disappears in Model 4 which contains both the interaction terms between the monitoring incentives and shareholder categories and those between

monitoring incentives, shareholder categories and accounting performance. In line with Model 2, Model 4 suggests that firms that are ultimately controlled by families are less likely targets for private equity investors. To summarise, Table 3-7 suggests that firms controlled by families with strong monitoring incentives are less likely to be sold off to private equity investors.

Table 3-7: Logistic regression results I - monitoring incentives

This table focuses on testing Hypothesis 1 on the monitoring incentives of the ultimate controlling shareholder. The table estimates the likelihood of a private equity transaction for the private equity targets and the control group by means of binary logit regressions. The dependent variable is coded 1 for the private equity target firms and 0 for the control firms. The independent variables are defined as in Table 3-1. Chi^2 denotes the value for the likelihood Chi square. The values in parentheses denote the values for the z-statistics. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Model 1	Model 2	Model 3	Model 4
CFR	-0.003			
	(0.52)			
CFR * family		-0.027		-0.033
		(2.91)***		(2.69)***
CFR * government		0.066		-0.138
		(1.35)		(1.04)
CFR * bank		0.036		0.030
		(1.54)		(0.39)
CFR * corporation		0.001		0.013
		(0.17)		(0.95)
CFR * holding		0.013		0.027
		(0.67)		(1.28)
CFR * family * performance			-0.108	0.054
			(1.67)*	(0.81)
CFR * government * performance			1.092	3.027
			(2.29)**	(1.27)
CFR * bank * performance			0.321	0.034
			(1.80)*	(0.06)
CFR * corporation * performance			-0.028	-0.107
			(0.57)	(1.3)
CFR * holding * performance			-0.076	-0.223
			(0.52)	(1.39)
Mgmt_Prof	-0.065	-0.081	-0.076	-0.084
	(0.96)	(1.12)	(1.07)	(1.22)

Table 3-7: Logistic regression results I - monitoring incentives (continued)

	Model 1	Model 2	Model 3	Model 4
$Mgmt\_Prof^2$	0.002	0.002	0.002	0.002
	(0.73)	(0.84)	(0.87)	(0.94)
Liquidity	-0.174	-0.177	-0.182	-0.191
	(3.39)*	**(3.43)***	**(3.35)***	**(3.56)***
CashFlowVolatility	-0.174	-0.178	-0.236	-0.175
	(0.99)	(0.91)	(1.2)	(0.79)
Leverage	-2.043	-1.953	-2.240	-2.086
	(2.76)*	**(2.52)**	**(2.85)***	**(2.55)**
FCF	-4.155	-3.997	-4.663	-5.714
	(1.11)	(1.06)	(1.22)	(1.37)
FCF/Tobin	5.629	5.034	5.701	7.365
	(2.05)	**(1.89)***	**(2.10)**	**(2.27)**
Tax/Leverage	0.002	0.002	0.002	0.002
	(2.37)	**(2.21)**	**(2.20)**	**(2.64)***
Tax	-0.188	0.414	-0.310	1.025
	(0.21)	(0.44)	(0.32)	(0.94)
Tax rate	0.043	0.075	0.066	0.078
	(0.75)	(1.19)	(1.1)	(1.23)
Size	0.000	0.000	0.000	0.000
	(1.78)*	**(1.66)***	**(1.75)***	**(1.85)***
Constant	0.148	-0.976	-0.641	-1.365
	(0.05)	(0.36)	(0.24)	(0.53)
Year dummies	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes
Number of observations	230	230	230	230
Pseudo R2	0.097	0.147	0.137	0.169
LR Chi2	35.253	50.196	45.213	50.985

As stated above, Table 3-8 focuses on testing Hypothesis 2 on the private benefits of control of the ultimate controlling shareholder. Model 1 suggests that Hypothesis 2 is

valid: the coefficient on the percentage of voting rights held by the ultimate controlling shareholder is negative and significant at the 1% level. Models 2 and 3 confirm this result. In detail, the former model uses the difference between the percentage of voting rights and the percentage of cash flow rights held by the ultimate controlling shareholder (*VR-CFR*) to proxy for the private benefits of control. The coefficient on the difference is negative and significant at the 1% level, providing further support for Hypothesis 2. In Model 3 private benefits of control are measured by the ratio of the percentage of voting rights over the percentage of cash flow rights held by the ultimate shareholder (*VR/CFR*). As in Models 1 and 2, the coefficient on the proxy for private benefits of control is negative and significant (at the 5% level) suggesting that firms whose controlling shareholders have substantial private benefits of control are less likely to be sold off to private equity firms. Models 4-6 in Table 3-8 take into account the type of the ultimate controlling shareholder by interacting the measure for private benefits of control with the dummy variable for each of the five types of ultimate shareholders. In all three models, the likelihood of being taking over by private equity investors for firms, that are ultimately controlled by a family which also has substantial benefits of control, is significantly lower compared to firms controlled by any of the other types of shareholders. Model 5 also suggests that the same pattern applies to firms which are ultimately controlled by other corporations. However, this result is not confirmed by Models 4 and 6. Finally, we also test whether the effect observed for families is a differential effect compared to the other categories of controlling shareholders or whether this effect is indeed only valid for firms controlled by shareholders. In other words, what happens if in Models 4-6 of Table 3-8 we also include the percentage of voting rights held by the ultimate shareholder irrespective of its type? The results, which are not tabulated, suggest that the private benefits of control only reduce the likelihood of being taken over by a private equity investor for firms that are controlled by families, but not for the firms controlled by any of the other types of shareholders.[168]

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[168] In detail, when the percentage of voting rights held by the ultimate controlling shareholder is included in Model 4 of Table 3-8 neither the latter nor the interaction of the latter with the family dummy variable is significantly different from zero. The reason why the interaction term is no longer significant may be the high correlation of the percentage of votes held by the ultimate shareholder (irrespective of type) with the equivalent percentage for families that are the ultimate shareholder.

To summarize the results from Table 3-8, there is clear evidence that firms whose ultimate controlling shareholder has substantial private benefits of control are less likely to end up being the targets of private equity investors. This is in line with Hypothesis 2. We also find that private benefits of control reduce the likelihood of a private equity acquisition for the case of firms that are ultimately controlled by families and corporations. This confirms the results from the existing literature which also finds that private benefits of control are an issue in firms controlled by families and corporations. However, we do not find support that private benefits of control are an issue in firms controlled by holding companies.

Table 3-8: Logistic regression results II - private benefits of control

This table focuses on testing Hypothesis 2 on the private benefits of control of the ultimate controlling shareholder. The table estimates the likelihood of a private equity transaction for the private equity targets and the control group by means of binary logit regressions. The dependent variable is coded 1 for the private equity target firms and 0 for the control firms. The independent variables are defined as in Table 3-1. Chi^2 denotes the value for the likelihood Chi square. The values in parentheses denote the values for the z-statistics. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
VR	-0.019					
	(2.90)***					
VR-CFR		-0.045				
		(2.87)***				
VR/CFR			-0.317			
			(2.19)**			
VR * family				-0.023		
				(3.55)***		
VR * government				0.024		
				(0.89)		

The correlation coefficient is equal to 0.617. When the equivalent augmented Model 5 is run, the coefficient on the difference in the percentage of votes and the percentage of cash flow rights held by the ultimate shareholder (irrespective of type) and the coefficient on the equivalent difference for families are both significant, have the same magnitude in absolute value, but have opposite signs. In other words, the latter coefficient is negative, the former is positive and they cancel each other out for firms with a family as their ultimate controlling shareholder. Still, our results are upheld as firms controlled by families are less likely to be the target of private equity investors. Finally, in the augmented Model 6 the interaction term for families is significantly negative as before and the coefficient on the ratio of the percentage of voting rights over the percentage of cash flow rights is not significant. Hence overall, these results suggest that private benefits of control only have an effect on the likelihood of the firm being taken over by a private equity investor for firms that are ultimately controlled by a family.

Table 3-8: Logistic regression results II - private benefits of control (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
*VR * bank*				0.026		
				(1.03)		
*VR * corporation*				-0.010		
				(1.18)		
*VR * holding*				0.004		
				(0.21)		
*(VR-CFR) * family*					-0.073	
					(3.50)***	
*(VR-CFR) * government*					0.056	
					(0.73)	
*(VR-CFR) * bank*					omitted	
*(VR-CFR) * corporation*					-0.367	
					(2.19)**	
*(VR-CFR) * holding*					-0.187	
					(0.51)	
*(VR/CFR) * family*						-0.657
						(2.77)***
*(VR/CFR) * government*						0.358
						(0.6)
*(VR/CFR) * bank*						1.092
						(1.3)
*(VR/CFR) * corporation*						-0.359
						(0.72)
*(VR/CFR) * holding*						0.443
						(0.54)
Mgmt_Prof	-0.090	-0.072	-0.072	-0.090	-0.079	-0.082
	(1.26)	(1.07)	(1.05)	(1.21)	(1.15)	(1.14)
Mgmt_Prof²	0.002	0.002	0.002	0.002	0.002	0.002
	(0.68)	(0.77)	(0.74)	(0.689)	(0.81)	(0.74)
Liquidity	-0.197	-0.179	-0.182	-0.190	-0.213	-0.192
	(3.71)***	(3.34)***	(3.49)***	(3.61)***	(3.55)***	(3.57)***
CashFlowVolatility	-0.188	-0.244	-0.223	-0.223	-0.248	-0.262
	(1.01)	(1.34)	(1.22)	(1.13)	(1.28)	(1.31)

Table 3-8: Logistic regression results II - private benefits of control (continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Leverage	-2.433	-1.701	-1.883	-2.319	-1.927	-2.010
	(3.17)***	(2.41)**	(2.69)***	(2.81)***	(2.66)***	(2.68)***
FCF	-4.903	-3.842	-4.366	-4.909	-2.765	-4.797
	(1.33)	(1.01)	(1.16)	(1.32)	(0.68)	(1.34)
FCF/Tobin	5.716	5.577	5.793	5.372	4.674	5.571
	(1.99)**	(2.02)**	(2.06)**	(1.95)*	(1.68)*	(2.13)**
Tax/Leverage	0.002	0.002	0.002	0.002	0.001	0.002
	(2.41)**	(2.17)**	(2.27)**	(2.09)**	(2.03)**	(2.16)**
Tax	-0.324	-0.116	-0.126	-0.028	-0.077	0.110
	(0.36)	(0.13)	(0.14)	(0.03)	(0.09)	(0.13)
Tax rate	0.050	0.038	0.033	0.068	0.033	0.040
	(0.84)	(0.62)	(0.56)	(1.1)	(0.5)	(0.66)
Size	0.000	0.000	0.000	0.000	0.000	0.000
	(1.18)	(1.85)*	(1.73)*	(1.15)	(1.78)*	(1.57)
Constant	1.468	0.724	0.683	0.625	1.407	0.871
	(0.55)	(0.31)	(0.27)	(0.26)	(0.59)	(0.35)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	230	230	230	230	228	230
Pseudo R2	0.123	0.119	0.109	0.164	0.161	0.150
LR Chi2	39.421	41.092	38.247	49.703	51.848	47.443

The question that now arises is whether *both* the monitoring incentives and the private benefits of the ultimate controlling shareholder have an effect on the likelihood of the firm being taken over by a private equity investor or whether one of these only shows up being significant in the above regressions because of the high correlation with the other one. In other words, the statistical significance of our measures for private benefits of control may be due to the high correlation of the former with the monitoring incentives or vice-versa. However, the correlation coefficient between the ultimate controlling shareholder's

percentage of votes and the percentage of cash flow rights is only 0.481. Further, the equivalent correlation coefficient for families is even lower with 0.277. The relatively low values for these correlation coefficients suggest the following conclusions. First, the correlation between cash flow rights and voting rights is not severe. Second, most of the deviations between votes and cash flow rights occur in firms under family control as reflected by the low value of the latter correlation coefficient. This would also explain why the monitoring incentives and the private benefits of control of the ultimate controlling shareholder only have an impact on the likelihood of a private equity acquisition if the latter is a family.

Still, it is important to check the robustness of our results – in particular, the validity of both Hypothesis 1 and Hypothesis 2 - by running further regressions. These regressions include both a measure for the monitoring incentives and a measure for the private benefits of control of the ultimate controlling shareholder. The results of these regressions are reported in Table 3-9. Both Model 1 and Model 2 include the interaction terms between the dummies for the various types of ultimate controlling shareholder and the monitoring incentives for the ultimate shareholder as proxied by the percentage of cash flow rights s/he holds. Further, both models contain the interaction terms between the same dummies and the measure for private benefits of control. In Model 1 the latter is the difference between the percentage of voting rights and the percentage of cash flow rights held by the ultimate shareholder (*VR-CFR*) and in Model 2 it is the ratio of the former over the latter (*VR/CFR*). In both models, both the interaction term between the percentage of cash flow rights and the dummy for families and the equivalent interaction term for private benefits of control are negative and significantly different from zero at the 1% level. This suggests that both Hypothesis 1 and Hypothesis 2 are valid for the case of firms that are ultimately controlled by a family. Further, when the marginal effects are analysed Model 1 suggests that a one-percent increase in the measure of private benefits of control has twice the effect on the likelihood of the firm being taken over by private equity investors than a one-percent increase in the monitoring incentives. While the units for the monitoring incentives and the private benefits of control in Model 2 are different, the second model still confirms that the latter's effect is stronger than the former's effect. This result may explain why the previous literature has found fairly strong evidence of the exploitation of private benefits

of control in family controlled firms, but less conclusive results on the monitoring benefits of family shareholders.

Table 3-9: Logistic regression results III - monitoring and private benefits of control

This table performs a joint test of Hypothesis 1 on the monitoring incentives of the ultimate controlling shareholder and Hypothesis 2 on the latter's private benefits of control. The table estimates the likelihood of a private equity transaction for the private equity targets and the control group by means of binary logit regressions. The dependent variable is coded 1 for the private equity target firms and 0 for the control firms. The independent variables are defined as in Table 3-1. Chi^2 denotes the value for the likelihood Chi square. The values in parentheses denote the values for the z-statistics. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	Model 1		Model 2	
	Coefficient	Marginal effect	Coefficient	Marginal effect
CFR * family	-0.027	-0.007	-0.023	-0.006
	(2.74)***	(2.75)***	(2.44)**	(2.44)**
CFR * government	0.053	0.013	0.075	0.019
	(0.85)	(0.85)	(0.84)	(0.84)
CFR * bank	0.025	0.006	0.001	0.000
	(1.18)	(1.18)	(0.04)	(0.04)
CFR * corporation	0.004	0.001	0.024	0.006
	(0.39)	(0.39)	(1.07)	(1.07)
CFR * holding	0.013	0.003	-0.020	-0.005
	(0.63)	(0.63)	(0.25)	(0.25)
(VR-CFR) * family	-0.066	-0.016		
	(3.09)***	(3.10)***		
(VR-CFR) * government	0.004	0.001		
	(0.05)	(0.05)		
(VR-CFR) * bank	omitted	omitted		
(VR-CFR) * corporation	-0.388	-0.097		
	(2.34)**	(2.35)**		
(VR-CFR) * holding	-0.365	-0.091		
	(0.82)	(0.82)		
(VR/CFR) * family			-0.514	-0.128
			(2.55)**	(2.56)**
(VR/CFR) * government			-0.275	-0.069
			(0.39)	(0.39)
(VR/CFR) * bank			1.086	0.271
			(1.07)	(1.07)

Table 3-9: Logistic regression results III - monitoring and private benefits of control (continued)

	Model 1		Model 2	
	Coefficient	Marginal effect	Coefficient	Marginal effect
*(VR/CFR) * corporation*			-1.742	-0.435
			(1.36)	(1.36)
*(VR/CFR) * holding*			1.109	0.277
			(0.34)	(0.34)
Mgmt_Prof	-0.105	-0.026	-0.104	-0.026
	(1.44)	(1.44)	(1.38)	(1.38)
Mgmt_Prof^2	0.003	0.001	0.003	0.001
	(0.99)	(0.99)	(1.00)	(1.00)
Liquidity	-0.210	-0.052	-0.189	-0.047
	(3.67)*	**(3.67)***	**(3.68)***	**(3.67)***
CashFlowVolatility	-0.274	-0.068	-0.223	-0.056
	(1.26)	(1.27)	(1.02)	(1.02)
Leverage	-1.766	-0.440	-1.872	-0.468
	(2.32)	**(2.32)**	**(2.46)**	**(2.46)**
FCF	-1.827	-0.455	-3.434	-0.858
	(0.42)	(0.42)	(0.87)	(0.87)
FCF/Tobin	3.913	0.974	4.779	1.194
	(1.35)	(1.35)	**(1.73)***	**(1.73)***
Tax/Leverage	0.001	0.000	0.001	0.000
	(1.74)*	**(1.74)***	**(1.68)***	**(1.68)***
Tax	0.657	0.164	0.415	0.104
	(0.67)	(0.67)	(0.45)	(0.45)
Tax rate	0.062	0.015	0.067	0.017
	(0.84)	(0.83)	(1.02)	(1.02)
Size	0.000	0.000	0.000	0.000
	(1.71)*	**(1.71)***	(1.49)	(1.49)
Year dummies	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes
Constant	0.320		0.081	
	(0.12)		(0.03)	
Number of observations	228		230	
Pseudo R2	0.199		0.176	
LR Chi2	63.496		59.296	

3.4.2.2 Secondary variables

The above discussion has focused on the tests of Hypothesis 1 and Hypothesis 2. In what follows, we shall concentrate on the other factors which have been advanced by Hypotheses 3 to 7 to have an influence on the likelihood of a firm being taken over by a private equity investor.[169] Table 3-7 to Table 3-9 do not provide any support for Hypothesis 3 which states that firms with relatively low or relatively high managerial ownership are more likely to be taken over by private equity investors. The absence of support for Hypothesis 3 is in line with the conclusions drawn from Table 3-6 which did not find any differences in managerial ownership between private equity targets and the control group of non-acquired firms either.

Conversely, there is fairly strong support for Hypothesis 4 on the tax benefit from leverage. As predicted, *Leverage* and *Tax/Leverage* have a significantly negative and significantly positive effect, respectively, on the likelihood of the firm being taken over by a private equity investor. However, the other two measures of the tax benefit from leverage – the firm's total tax payment (*Tax*) and the statutory corporate tax rate (*Tax Rate*) – do not have any significant impact on that likelihood. There is also support for Hypothesis 5 on the bonding advantage of leverage as the ratio of free cash flow over Tobin's Q is consistently significant at the 10% level in all of the regressions in Table 3-7 to Table 3-9.

On the contrary, there is no support for Hypothesis 6 as there is no evidence suggesting that firms with more stable cash flows are more likely targets for private equity investors. Finally, there is very strong support for Hypothesis 7 as the liquidity of the firm's stock has a negative impact on the likelihood of it being acquired by a private equity firm.

3.5   Summary

Given that corporate governance in continental Europe differs markedly from that in the UK and US (Faccio/Lang (2002)), the motives for private equity transactions and the characteristics of targets are also likely to differ. The most important difference concerns

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[169] As stated in footnote 3, in line with the existing literature we also considered the firm's valuation as a motive for a private equity acquisition. We did not find this variable to have a significant impact on the likelihood of the firm being taken over by a private equity investor.

ownership and control. While most publicly traded companies in the US and the UK are widely held, most continental European companies have large shareholders, such as families (Faccio/Lang (2002), Andres (2008)). Given the size of their stake, these large shareholders are likely to have the right incentives to monitor the management. However, not all large shareholders may engage in monitoring. In other words, if the large shareholder monitors the management, this is likely to make the firm less attractive to private equity investors given that there is less potential for value creation by the latter. Conversely, a large shareholder who is not able to monitor the management, maybe because of a lack of skills, may be more intent on selling her/his firm to private equity investors. Further, strong control may also generate costs as the large shareholders may use their control rights to their own benefit and extract private benefits from the firm at the expense of the other shareholders. As a result, private equity investors may avoid companies whose controlling shareholders extract private benefits of control and are only willing to sell their stakes at a premium which is high enough to compensate them for the loss of their benefits.

This chapter has four major contributions. First, it contributes to the as yet limited literature on private equity transactions outside Anglo-Saxon countries (see e.g. Andres et al. (2007), Achleitner/Hinterramskogler (2008), Achleitner et al. (2011 forthcoming) and Geranio/Zanotti (2011 forthcoming)). Whereas previous studies mainly focus on the wealth effects of going private transactions or LBOs as well as their determinants, we investigate the motivation of private equity investors to acquire target firms. Second, it analyses the role of private equity investors in the continental European market which is characterized by very different corporate governance compared to Anglo-Saxon countries. In particular, we test hypotheses relating to the monitoring incentives and the private benefits of control of the large shareholder. Third, we find further evidence about the types of large shareholders that are likely to monitor the management and those that are unlikely to oversee the activities of the latter. The existing literature on the types of shareholders that are active rather than passive is as yet sparse and does not provide consistent conclusions. Studying private equity acquisitions of continental European firms enables us to investigate the monitoring role of a much larger range of different large shareholders – including families, corporations, banks, holding companies and governments – than UK or

US data would have enabled us. Indeed, UK and US corporations are typically widely held and the few large minority shareholders there are tend to be institutional investors. Fourth, unlike previous studies on going private transactions, we clearly distinguish between the tax advantage and the disciplinary role of leverage. We find evidence in favour of both roles of leverage.

We find strong evidence that the likelihood of a company becoming the target of a private equity investor is influenced by the monitoring incentives and the private benefits of control enjoyed by the incumbent large shareholder. However, this pattern only emerges when we distinguish between the various types of large shareholders and it only applies to firms whose ultimate controlling shareholder is a family. This provides further evidence about the types of shareholders that monitor the management and those that do not. It also provides further insights on the types of shareholders likely to expropriate minority shareholders. Our evidence suggests that families are more likely to expropriate the minority shareholders in their firms than other types of controlling shareholders. Further, we also find that for firms controlled by families that a one-percent increase in the measure of private benefits of control has twice the negative effect on the likelihood of the firm being taken over by private equity investors than a one-percent increase in the monitoring incentives. This result may explain why the previous literature has found fairly strong evidence of the exploitation of private benefits of control in family controlled firms, but less conclusive results on the monitoring benefits of family shareholders.

We also find support that the tax benefit from increasing leverage and the bonding role of further leverage influence the likelihood of a firm being acquired by a private equity investor. In addition, we also find that firms with illiquid shares are more likely to be the targets of private equity investors.

4 How much do Private Equity Investors Pay for Continental European Firms?[170]

4.1 Introduction

In the early 2000s, the buyout market recovered and commenced a new surge which culminated with the onset of the financial crises in July 2007. One notable development of this second buyout wave was the rise of an active continental European private equity market as stressed by Strömberg (2007): "The non-US private equity activity has grown to be larger than that of the US in the last few years, where the growth of continental European LBOs has been particularly pronounced."[171] Although the continental European market differs in many perspectives from its Anglo-Saxon relatives, there is a dearth of private equity research in the continental European context.[172] We address this gap by examining the pricing of going private buyouts, i.e. acquisitions of large, publicly listed companies. This type of deal has been responsible for much of the last wave's transaction volume[173] and the availability of comprehensive data encompassing sharp market prices provides an opportunity to examine the pricing and its underlying sources in detail.

Given that corporate governance in continental Europe differs markedly from that in the UK and US, the pricing of private equity transactions and the characteristics of targets are also likely to differ. The most important difference concerns the ownership structure. While firms in the Anglo-Saxon jurisdictions are owned by small, dispersed shareholders, firms in continental Europe are held by large blockholders (Enriques/Volpin (2007), amongst others). Given the size of their stake, these large shareholders are likely to have the right incentives to monitor the management (Jensen/Meckling (1976) and Shleifer/Vishny (1986)). However, not all types of large shareholders, such as the

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[170] A previous version of this chapter was used as the basis for the paper "Private equity and wealth effects in blockholder-based governance regimes" which is joint work with Ann-Kristin Achleitner.

[171] Cf. Strömberg (2007), p. 5.

[172] Cf. for instance Renneboog/Simons/Wright (2007) who state that "hardly anything is known about the continental European private equity market" (Renneboog/Simons/Wright (2007), p. 620).

[173] Continental European going private buyouts have seen a large wave since 1997. According to CMBOR (2007), the annual deal volume of these transactions in Continental Europe has grown over the decade 1997-2006 from €m 286 to a new record of €m 32,027.This indicates an annual growth rate of 60%. Relative values reveal a similar pattern. In 2006, the volume of going private buyouts in comparison to all buyouts rose to a new high of 26.4%.

government for instance, may engage in monitoring. Ultimately, if the large shareholder monitors the management, abnormal returns and premiums conferred by a private equity acquisition should be lower as these targets offer less remaining potential for corresponding agency cost reductions. While the presence of a large outside blockholder mitigates the traditional agency conflict between managers and shareholders, it raises a different conflict of interest which is labelled by Enriques/Volpin (2007) as the "fundamental problem of corporate governance in CE":[174] the large stake may also induce blockholders to use their control rights to their own benefit and extract private benefits from the firm at the expense of remaining shareholders (Barclay/Holderness (1989) and Bebchuk (1999)). This concern is particularly relevant on the background of a historically weaker minority shareholder protection in continental Europe (La Porta et al. (1999)). As a result, these blockholders are only willing to sell their stake to a private equity investor at a premium which is high enough to compensate them for the loss of their benefits. Such rent-extraction by the largest shareholders can be curbed by the presence of a second large shareholder. Consequently, abnormal returns and premiums conferred by a private equity acquisition should be lower if there is a second large blockholder in the pre-buyout company who confines the discretion of the largest shareholder to appropriate private benefits.

Besides the corporate governance system, there are also numerous other differences between Anglo-Saxon and continental European markets which challenge the view that results for the former are transferrable to the latter. For instance, the legal and fiscal regulation for structuring and executing a private equity acquisition has been traditionally more demanding in continental Europe than in the developed US or UK markets (Renneboog/Simons (2005)). Consequently, the risk and expected cost of executing a buyout is higher in continental Europe. Differences in the debt markets, such as less active high yield bond markets in continental Europe and a syndicated loan market where pricing still depends more on (regional) banks than institutional investors (Standard & Poor's (2010)), are also likely to affect the financial engineering decisions of private equity

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[174] Cf. Enriques/Volpin (2007), p. 117.

funds.[175] Furthermore, the market for corporate control has been traditionally less active in continental Europe and hostile transactions are hardly encountered (Franks/Mayer (2001) and Goergen/Renneboog (2004)). Hence, one might speculate that private equity investors face a less competitive bidding environment. For all these reasons, a detailed examination of the pricing of continental European private equity acquisitions is compelling.

To study the pricing of continental European private equity acquisitions, we self-collect a sample of 101 going private buyouts including precise information about the (i) target ownership structure,[176] accounting and stock performance, (ii) private equity bidder characteristics and (iii) deal characteristics. While the focus of this chapter is on buyout pricing in the form of the final premiums paid by the private equity investor, we also calculate abnormal returns to shareholders around the buyout announcement. In the respective check of the underlying information release process, we notice that in 20 cases the disclosure of the takeover as a private equity backed going private buyout happens not in one but two steps.[177] Consequently, a two-step event study is employed to arrive at unbiased estimates.

We find that private equity investors pay a final mean premium of 28.3% relative to the market price two months before the announcement date. This value is 3.0 percentage points lower than for comparable US transactions.[178] The pattern is consistent with the aforementioned monitoring incentives of large blockholders to curtail managerial misbehavior and, potentially, with the restriction of their own private benefits consumption due to peer cross-monitoring. Further, we find that shareholders gain around the

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[175] Axelson et al. (2007) provide evidence in line with this notion. In a comparison of European and US buyouts, they show that the former ones (1) employ a higher (lower) proportion of bank debt (bonds) (2) contain more tranches of bank debt and (3) assume higher debt amounts from their targets.

[176] In this chapter, the term ownership refers to the voting rights of first-tier shareholders. Consequently, the ownership statistics and the related evidence are not fully congruent in chapter 3 and 4 but they are likely to be highly compatible. An interesting avenue for future research would be to extend the analyses in this chapter from the first-tier to the ultimate ownership level as best exemplified by the comprehensive revisions from Achleitner/Betzer/Hinterramskogler (2008) to Achleitner et al. (2011 forthcoming).

[177] The *first* announcement generally refers to takeover negotiations with an undisclosed party or the firm's intention to go private. The involvement of a private equity investor, however, is only disclosed in a subsequent *second* announcement.

[178] Cf. section 4.4.1.2 for a detailed discussion. The US reference values are based on Bargeron et al. (2008) and chapter 5 of this dissertation.

announcement day abnormal returns of 13.0% in the [-1,1] event window. While this value is significantly positive, it is 7.7 percentage points lower than in the US case. This value underlines the higher deal completion risk in continental Europe and the outlined monitoring and private benefits arguments.

When examining the underlying premium and abnormal return sources with cross-sectional regressions, there is indeed strong support for our main argument that the continental European blockholder structure represents a crucial determinant. Consistent with the view that buyout targets with a large blockholder offer less remaining value potential since the latter has the right incentives to curb managerial malpractice, we find that the stake of the largest outside blockholder is negatively related to the premiums and abnormal returns. Further, since monitoring efforts may not only vary with the size of the largest blockholder but also by her/his identity, we extend the analysis and distinguish between various types of large shareholders. The existing literature on the types of shareholders that are active rather than passive is sparse and does not provide uniform conclusions. Consistent with our expectation, we find that the monitoring result holds for corporations, banks and holdings but not for the government. Interestingly and contrary to our expectation, the monitoring result *seems* also to not hold for families. However, the absence of a clear negative relationship between the stakes of family blockholders and wealth effects has to be interpreted with care. It may be that private benefit consumption as a competing factor may counterbalance the monitoring activities of families and consequently, the latter effect may not show up in the form of lower premiums and abnormal returns in the current empirical setting.[179]

We shed light on the private benefits argument by examining whether the presence of a second large shareholder, who can act as a monitor of the dominant blockholder and curtail her/his rent extraction, is related to the premiums and abnormal returns. Consistent with the monitor-of-the-monitor argument, we find that the premiums and abnormal returns are lower for targets where a second large blockholder was inherent in the pre-buyout firm.

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[179] Chapter 3 lends support to this conjecture. In particular, it was shown that companies with large family blockholders have a lower takeover probability since these families are likely to consume substantial private benefits and therefore demand higher premiums.

In addition to the central monitoring and private benefits results, there is widespread evidence that the relative underperformance of the target in comparison to the stock market confers higher premiums and abnormal returns. This lends support to Kaplan and Schoar's (2005) notion that private equity investors are sophisticated investors with an excellent network which allows them to spot underperforming firms and increase their value under private ownership. Furthermore, there is also weak evidence that a thin, pre-buyout trading volume of the target stock amplifies the premiums.

This chapter contributes to the work on the pricing of private equity sponsored going private acquisitions. This stream of the literature has focused on the Anglo-Saxon capital markets.[180] Based on the increased relevance of the continental European markets, we examine going private buyouts in continental Europe where in particular the blockholder structure via the monitoring and private benefits argument may lead to different results. A notable feature of the research setting is the combination of the blockholder structure and sharp pricing measures due to market prices. Thereby, this chapter may not only help in understanding the pricing of public buyout targets but also the pricing of private buyout targets who are characterised by concentrated ownership but lack sharp, market quote based pricing measures.

Most closely related is the contemporaneous work of Achleitner et al. (2011 forthcoming).[181] They examine announcement returns to a limited sample of 48 private equity investments on the German stock market encompassing both minority and majority transactions. In contrast, this chapter focuses on the premiums for a sample of 101 private equity deals in continental Europe consisting solely of going private transactions which lead to full control.[182] Further, this chapter examines the takeover information release

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[180] Most notably DeAngelo/DeAngelo/Rice (1984), Kaplan (1989a), Lehn/Poulsen (1989), Bargeron et al. (2008) and Jenkinson/Stucke (2010). Further studies are Lowenstein (1985), Torabzadeh/Bertin (1987), Amihud (1989), Kaplan (1989a), Kaplan (1989b), Marais/Schipper/Smith (1989), Asquith/Wizman (1990), Frankfurter/Gunay (1992), Lee (1992), Harlow/Howe (1993), Slovin/Sushka (1993), Travlos/Cornett (1993), Easterwood et al. (1994), Renneboog/Simons/Wright (2007), Cao/Lerner (2009), Guo/Hotchkiss/Song (2011 forthcoming) and Officer/Ozbas/Sensoy (2010).

[181] Betzer (2006) and Andres/Betzer/Weir (2007) examine as well the shareholder wealth effects of private equity investments in Europe. However, their limited samples consist mainly of UK transactions. Geranio/Zanotti (2011 forthcoming) study public to private transactions in continental Europe but they do not focus on private equity sponsored deals.

[182] Consequently, the sample size allows us to arrive at robust results in econometric terms.

process in detail and argues that a two-step event study is required to grasp the announcement effects of private equity acquisitions. Finally, it also tests private equity fund and deal related hypotheses not considered in Achleitner et al. (2011 forthcoming).

This chapter is organized as follows: section 4.2 reviews the related theoretical and empirical literature and derives the hypotheses. Section 4.3 describes the sample collection process and the methodology. The empirical results and their interpretations are presented in section 4.4. Finally, section 4.5 summarizes the findings and concludes.

4.2 Literature review and hypotheses

This section derives the hypotheses. As emphasized in the introduction, the focus of this study will lie on the governance hypotheses arising from the blockholder-dominated ownership pattern in continental Europe. These will be set apart to *capital structure*, *valuation* and *private equity* hypotheses.[183] All hypotheses and respective variables are summarized in Table 4-1.

4.2.1 Governance hypotheses in the continental European context

The delegation of control from owners to managers confers a conflict of interest as the owner's target function of shareholder wealth maximization is unlikely to be fully congruent with the manager's function of personal wealth maximization (Jensen/Meckling (1976), Fama/Jensen (1983)). The conflict is expected to be particularly accentuated at lower levels of managerial ownership: as directors' compensation is not adequately linked to company performance, they face fewer incentives to act in the best interest of shareholders. They are likely to shirk from investing adequate efforts and/or to divert resources for their own benefit. Kaplan (1989a) stresses that value increases in buyouts are partly attributable to such inefficient agency-settings. Private equity investors require target managers to substantially co-invest in the buyout, thereby aligning their interests to boost the value of the company (Kaplan/Strömberg (2009)).

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[183] The categorization of the hypotheses is not mutually exclusive as, for instance, the governance and capital structure hypotheses are intertwined. The primary goal of the categorization is to impose a sensible structure that makes the study more quickly accessible to the reader.

At high levels of ownership, however, the argument shall turn as managerial entrenchment is likely to set in. For instance, managers who have invested a large stake of their personal wealth in the company tend to engage in diversifying investments at the corporate level (May (1995)). While this behaviour benefits themselves, it comes at a cost for shareholders. Morck et al. (1988) provide empirical evidence for such a non-linear relationship between managerial ownership and firm value. Consequently, a squared term of managerial ownership is included in the empirical tests.

H1.1 (incentive alignment - directors' ownership): There is a non-linear relationship between pre-buyout managerial ownership and the premiums or abnormal returns, respectively. At low levels of managerial ownership the relationship is negative while at high levels it is positive.[184]

Managements' leeway in corporate decision making decreases with monitoring efforts exercised by corporate shareholders (Alchian/Demsetz (1972) and Jensen/Meckling (1976)). Small shareholders, however, refrain from monitoring as it incurs significant costs in relation to the benefits earned on their marginal stake. From their perspective, it is more sensible to free-ride on the monitoring efforts borne by third parties (Grossman/Hart (1980)). Hence, monitoring occurs in companies where blockholders have large stakes (Shleifer/Vishny (1986)). Consequently, if private equity investors acquire companies which have been under the controlling eye of blockholders, premiums and abnormal returns should be lower as these companies offer less potential for agency cost reductions stemming from the manager-shareholder conflict. Direct evidence for this comes from Renneboog et al. (2007). They observe that shareholder wealth effects are lower when firms are controlled by blockholders. Indirect evidence is provided by Franks/Mayer (2001). They show that the bid premium is significantly lower for blockholder-governed German firms than for dispersed Anglo-Saxon firms.[185]

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[184] Due to data limitations in the continental European context, we are only able to employ managerial shareholdings in excess of 5%.[184] The expected coefficient of the variable *Director* is negative while the coefficient of *Director²* is expected to be positive.

[185] Alternatively, it could also be argued that a negative relationship between the size of the largest shareholder and the wealth effects arises from the mitigation of the free-rider problem due to the bilateral negotiations between the blockholder and private equity investor. However, Eckbo (2009)

H1.2 (monitoring - shareholder's size): Premiums and abnormal returns are negatively related to the equity stake of the incumbent, largest shareholder.[186]

In addition to the size of the largest blockholder, monitoring incentives may also vary with her/his identity. The literature about the types of large shareholders that are likely to monitor the management and those that are unlikely to oversee the activities of the latter is as yet sparse and does not provide consistent conclusions. In line with sections 3.2.1.3 and 3.3.3.2, we expect that (outside) families, banks, industrial and commercial corporations and holding companies monitor the management whereas the government doesn't.

H1.3 (monitoring - shareholder's identity): Premiums and abnormal returns are lower when the largest shareholder is a family, bank, corporation or holding company who shall have more incentives to engage in monitoring than the government.

The presence of a large outside blockholder renders the traditional agency conflict between managers and shareholders, but in turn raises a different conflict of interest which is labelled by Enriques/Volpin (2007) as the "fundamental problem of corporate governance in continental Europe [and in most non-Anglo-Saxon countries of the world]":[187] Large shareholders might use their power to extract private benefits at the cost of small shareholders as stressed by Shleifer/Vishny (1997) and theoretically formalized by Bebchuk (1999). This concern is particularly relevant on the background of a historically weaker minority shareholder protection in continental Europe (La Porta et al. (1999)). As a result, these blockholders are only willing to sell their stake to a private equity investor at a premium which is high enough to compensate them for the loss of their benefits. Such private benefit extraction by the largest shareholder can be curbed if there is a second large shareholder who exerts a monitor-of-the-monitor role. This is demonstrated in detail by Pagano/Röell (1998), who derive conditions under which blockholders engage in cross-

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argues that the free-rider problem is only of minor importance in practice. Consequently, a negative relationship shall be mainly attributable to the monitoring argument.

[186] As a proxy for monitoring efforts, we use the equity stake of the largest outside blockholder. The existence of a large shareholder induces the remaining shareholders (with lower ranks in the ownership hierarchy) to free-ride on her/his efforts, i.e. to underinvest in monitoring. Hence, our monitoring variable seems also to be a reasonable proxy from a theoretical point of view. The expected coefficient is negative.

[187] Cf. Enriques/Volpin (2007), p. 117.

monitoring, thereby curtailing expropriation and increasing shareholder value. This positive relationship between the existence of a second large shareholder and shareholder value, is empirically confirmed by Edwards/Weichenrieder (2004) and Achleitner et al. (2011 forthcoming). Hence, we argue that takeovers of companies, where a second large shareholder is likely to confine the discretion of the largest shareholder to appropriate private benefits in the pre-buyout company,[188] confers lower premiums and abnormal returns.

H1.4 (private benefits): Premiums and abnormal returns are lower when there is a second large blockholder in the pre-buyout company who can confine the discretion of the largest shareholder to appropriate private benefits.[189]

4.2.2 Capital structure hypotheses

Private equity investors finance their deals with a substantial increase in leverage in order to (i) realize additional tax shields and (ii) to discipline management not to waste free cash flow on negative net present value projects. We shall briefly review the literature on both of these points below.

At the corporate level, interest payments are deductible from taxable income. Hence, as highlighted by Modigliani/Miller (1963), an increase in the debt level will create additional tax shields and thereby rise firm value. Assuming that target firms can increase leverage independently at similar terms than private equity investors and given that the market for corporate control is reasonably competitive, ex-ante predictable tax savings from private equity investor's recapitalizations should accrue to shareholders. Consequently, we expect a positive relationship between the level of tax liabilities and premiums or abnormal returns, respectively. The empirical picture on this question is ambiguous: Lowenstein

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[188] An alternative (but not mutually exclusive) interpretation would be that the second largest shareholder acts as an additional monitor of the management besides the largest shareholder. Since the largest shareholder holds in the sample on average 35.26% of the votes, he has relatively high incentives to monitor managers and to appropriate private benefits. Consequently, it is more likely that the second large shareholder will focus her/his efforts more on monitoring the largest shareholder than the managers.

[189] As empirical measure, we closely follow Gugler/Yurtoglu (2003) and employ a dummy which is set to one if there is a second large shareholder owning a stake equal or larger than 5%. A negative sign is expected.

(1985) and Kaplan (1989b) show results consistent with the tax benefit argument in contrast to the results of Lehn/Poulsen (1989), Frankfurter/Gunay (1992), Halpern et al. (1999) and Renneboog et al. (2007).

According to Jensen's (1986) seminal free cash flow theory, managers are prone to invest excess cash in projects which do not earn the required rate of return but increase their own welfare. For instance, managers will rather increase firm size and their compensation through new projects than restraining it through cash pay-outs to shareholders (Murphy (1985)). Hence, companies with high excess cash positions are interesting candidates for private equity investors, as managerial malpractice can be curbed through increased debt liabilities (i.e. higher interest and principal payments). Consequently, we expect that premiums and abnormal returns are higher for target companies with high levels of free-cash-flow. The empirical evidence on the free-cash-flow hypothesis is inconclusive: while Lehn/Poulsen (1989) and Frankfurter/Gunay (1992) find evidence for Jensen's (1986) seminal argument, the one's of Travlos/Cornett (1993), Halpern et al. (1999) and Renneboog et al. (2007) fail to find empirical evidence.

H 2.1 (leverage, tax and free cash flow): Premiums and abnormal returns are higher when companies offer high debt capacities, high tax levels and high free cash flow levels.[190]

Buyout pricing may not only be driven by the firm-specific debt capacity, but also by the periodical, market-wide mispricing in the debt and equity markets. When debt is relatively cheap in comparison to equity, private equity investors will take advantage of this situation (Kaplan/Strömberg (2009)). Favourable lending rates, which do not fully account for the intrinsic risk of the company, will induce private equity investors to take on larger amounts of debt financing. In particular, this might result from the compensation scheme of general partners as pointed out by Axelson et al. (2009): general partners are typically entitled to a carried interest of 20% if fund returns surpass an agreed hurdle rate. Hence, they hold an option-like stake which induces them to employ more leverage in deals. The resulting

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[190] Debt capacity is measured in terms of the prevalent industry measure; net debt divided by EBITDA. The expected sign is negative. In accordance with previous studies, tax payments standardized by the firm's market value of equity are employed as a proxy for tax liabilities. The expected sign is positive. The variable *FreeCashFlow* is defined as operating income before depreciation and amortization minus tax, minus interest and minus dividend payments divided by the market value of equity (Lehn/Poulsen (1989)). A positive sign is expected for this variable.

value increase of their "option", in turn, increases their willingness to pay higher prices. Since shareholders are able to evaluate lending conditions at the announcement, the perspective of a larger premium is also likely to translate into a higher announcement return. There is empirical evidence for both the first and second buyout wave that the availability of "cheap" debt influences the pricing of buyouts (Kaplan/Stein (1993) and Axelson et al. (2010)).

H 2.2 (debt market timing): Premiums and abnormal returns are higher when there are favourable lending conditions.[191]

4.2.3 Valuation hypotheses

There is anecdotal and academic evidence that firms with relatively low valuation levels are taken private (Maupin et al. (1984), Weir et al. (2005) and Renneboog et al. (2007), amongst others). Such an undervaluation may originate, for instance, from a lack of financial visibility. In particular, small companies with low stock analyst and press coverage shall encounter problems to reveal the firm's true potential to the market. This low market visibility is likely to convey a low trading volume.[192]

As sophisticated investors with an excellent network in the financial community, private equity general partners are supposed to have "proprietary deal flow" (Kaplan/Schoar (2005) which helps them to identify undervalued companies. The premiums and abnormal returns are likely to be positively related to the level of undervaluation since the latter indicates both a low basis price for the premium and ample value creation potential.[193] Similarly, the premiums and abnormal returns are also likely to be positively related to the illiquidity of the stock since the latter triggers strong market reactions and requires the private equity investor to make a substantial offer to secure full control.

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[191] The London Interbank Offered Rate (LIBOR) is used to construct a proxy for industry-wide lending conditions. In particular, the average of the daily LIBOR rates (maturity of 12 months) over the interval [-165, -41] relative to the announcement day is calculated.

[192] Both undervaluation and illiquidity impair the management to reap the benefits of a listing, e.g. to raise relatively cheap capital (Pagano/Panetta/Zingales (1998) and Boot/Gopalan/Thakor (2008)). Considering the substantial listing costs, managers might be induced to go private.

[193] This prediction is empirically supported by Maupin/Bidwell/Ortegren (1984) and Renneboog/Simons/Wright (2007), amongst others.

H 3.1 (performance, liquidity): Premiums and abnormal returns are higher when companies have a low prior stock performance and a thin trading volume.[194]

The potential for private equity investors to benefit from their identification skills of undervalued targets is constrained by bidding competition and resistance from target managers.

H 3.2 (challenged, hostile): Premiums and abnormal returns are higher when the deal involved a competing offer and/or a hostile target.

4.2.4 Private equity hypotheses

During the last buyout wave, private equity investors have increasingly joined forces to bid as consortiums for targets. This rise was accompanied by concerns that club deals present syndicates of potential rivals leading to less bidding competition at the detriment of target shareholders.[195] Empirical evidence on this issue is mixed. Officer et al. (2010) report that vendors earn approximately 10% less in club- than sole-sponsored deals. This result, however, is not upheld in contemporary work by Boone/Mulherin (2009) who find no negative effects of club deals on either target returns or takeover competition measures.[196] They argue that consortium formation seems to be rather explained by competitive reasons (such as scale, risk and bidder expertise) than by collusion motives. Although the final jury on this question is still out, the launch of investigations by the US Department of Justice underlines the increased potential for anticompetitive behaviour through club deals. Consequently, we hypothesise:

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[194] The variable *PriorStockPerformance* is defined as the share price 40 days before the announcement date divided by the average price over the 2 antecedent years. In order to exclude market movements, the figure is divided 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). The variable *liquidity* is defined as the fraction of days with zero percent returns over the half year period up to the event window starting at day t = - 40.

[195] Competition may be either directly reduced via the simple reduction of auction participants (Graham/Marshall (1987) and McAfee/McMillan (1992)) or indirectly via the greater likelihood for collusive agreements (Stigler (1964)).

[196] Boone/Mulherin (2009) collect from SEC files "the number of potential bidders contacted by the target, the number of potential bidders receiving confidential information, and the number of bidders making both non-binding and binding offers" (Boone/Mulherin (2009), p. 4).

H 4.1 (private equity - syndication): Premiums and abnormal returns are lower in club- than in sole-sponsored deals.[197]

Ljungqvist et al. (2007) show, in a theoretical model, that inexperienced buyout fund managers, who want to establish a track record in order to raise follow-on funds, are less-risk averse and more prone to overpay. High premiums by inexperienced GPs will be anticipated by shareholders leading to high abnormal returns around the buyout announcement. These predictions are indirectly supported by the empirical work of Kaplan/Schoar (2005). They show that fund performance tends to increase with the experience of the funds' general partners. Hence, we argue:

H 4.2 (private equity - experience of general partners): Premiums and abnormal returns are higher when the private equity investor is less experienced.[198]

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[197] Two proxies are employed: *Syndicate* measures the number of private equity investors conducting the transaction while *ClubDeal* is a simple dummy taking the value one if there are two or more private equity investors forming a syndicate.

[198] To proxy for the experience of general partners four different proxies are employed: *AgePePartnership* measures the age of the youngest syndicate partner whereas *AgePePartnership2* measures the age of the oldest syndicate partner. *FirstFund* is set to one, if *one* of the syndicate partners is a first time-fund whereas *FirstFund2* is set to one, if *all* of the syndicate partners are first time-funds.

Table 4-1: Summary of hypotheses, variables, definitions and expected signs

This table summarizes the hypotheses, the variables used to test them and the predicted effect of each variable on the premiums and abnormal returns.

Hypotheses	Variables	Definition	Expected sign
Governance hypotheses			
H 1.1 (incentive alignment - directors' ownership): There is a non-linear relationship between pre-buyout managerial ownership and the premiums or abnormal returns, respectively. At low levels of managerial ownership the relationship is negative while at high levels it is positive.	*Director*	Ownership stake of management team in %. Due to data limitations in the continental European context, we are only able collect managerial shareholdings in excess of 5% (cf. section 4.3.2 for details)	-
	Director²	Squared ownership stake of management team in %. Due to data limitations in the continental European context, we are only able collect managerial shareholdings in excess of 5%.	+
H 1.2 (monitoring - shareholder's size): Premiums and abnormal returns are negatively related to the equity stake of the incumbent, largest shareholder.	*1stShareholder* *1stShareholder_75/100* *1stShareholder_50/75* *1stShareholder_25/50*	Ownership stake of largest outside shareholder in % Piecewise specifications of the variable 1stShareholder according to the economic thresholds at 25, 50 and 75% (cf. section 4.2.1 and 4.3.2 for details)	-
H 1.3 (monitoring - shareholder's identity): Premiums and abnormal returns are lower when the largest shareholder is a family, bank, corporation or holding company who shall have more incentives to engage in monitoring than the government.	*1stShareholder * Identity*	Interaction term of *1stShareholder* with one of the dummy variables measuring the type of the largest outside shareholder (family, government, bank, insurance, corporation, holding and others).	- for "good" monitors and + for "bad" monitors
H 1.4 (private benefits): Premiums and abnormal returns are lower when there was a second large blockholder in the pre-buyout company who confined the discretion of the largest shareholder to appropriate private benefits.	*2ndShareholder_dummy>5%*	Dummy set to 1 if the second largest outside shareholder holds a stake larger or equal than 5% (Gugler/Yurtoglu (2003), for more details see section 4.3.2)	-

Table 4-1: Summary of hypotheses, variables, definitions and expected signs (continued)

Hypotheses		Variables	Definition	Expected sign
Capital structure hypotheses				
	H 2.1 (leverage, tax and free cash flow): Premiums and abnormal returns are higher when companies offer high debt capacities, high tax levels and high free cash flow levels.	*DebtLevel*	Net debt divided by EBITDA	-
		FreeCashFlow	Free cash flow defined as operating income before depreciation and amortization minus tax, interest and dividend payments standardized by the market value of equity (Lehn/Poulsen (1989))	+
		Tax	Tax payments standardized by the firm's market value of equity (Lehn/Poulsen (1989))	+
	H 2.2 (debt market timing): Premiums and abnormal returns are higher when there are favourable lending conditions.	*DebtCost (LIBOR)*	Average of the daily LIBOR rates over a half year period up to day t = -41	-
Valuation hypotheses				
	H 3.1 (performance, liquidity): Premiums and abnormal returns are higher when companies have a low prior stock performance and a thin trading volume.	*Valuation*	Share price 40 days before the announcement date divided by the average price over the two prior years. In order to exclude market movements, we divide the 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).	-
		Liquidity	Fraction of days with zero percent returns over a half year period up to day t = - 41	+

Table 4-1: Summary of hypotheses, variables, definitions and expected signs (continued)

Hypotheses		Variables	Definition	Expected sign
	H 3.2 (challenged, hostile): Premiums and abnormal returns are higher when the deal involved a competing offer and/or a hostile target.	*Challenged*	Indicator variable if the deal involved a competing offer	
		Hostile	Indicator variable set to one if the deal includes a hostile target	
Private equity hypotheses				
	H 4.1 (private equity - syndication): Premiums and abnormal returns are lower in club- than in sole-sponsored deals.	*ClubDeal dummy*	Dummy set to 1 if more than one private equity investor participates in the equity syndicate	-
		Syndicate	Number of private equity investors participating in the equity syndicate	-
	H 4.2 (private equity - experience of general partners): Premiums and abnormal re-turns are higher when the private equity investor is less experienced.	*Age PE Partnership*	Age of the *youngest* private equity investor participating in the equity syndicate at the announcement date	-
		Age PE Partnership2	Age of the oldest syndicate partner participating in the equity syndicate at the announcement date	-
		First time fund	Dummy set to 1 if *one* private equity fund participating in the equity syndicate is a first-time fund	+
		First time fund2	Dummy set to 1 if *all* private equity funds participating in the equity syndicate are first-time funds	+
Further control variables				
		France dummy	Dummy set to 1 if the target company is headquartered in France	
		Germany dummy	Dummy set to 1 if the target company is headquartered in Germany	

Table 4-1: Summary of hypotheses, variables, definitions and expected signs (continued)

Hypotheses	Variables	Definition	Expected sign
	Sweden dummy	Dummy set to 1 if the target company is headquartered in Sweden	
	Netherlands dummy	Dummy set to 1 if the target company is headquartered in Netherlands	
	Period 01-03 dummy	Dummy set to 1 if transaction was announced in the stock market downturn period of 01 - 03	
	Period 04-07 dummy	Dummy set to 1 if transaction was announced in the stock market upturn period of 04 - 07	
	Size	Market capitalization in million €	

4.3 Sample, data and methodology

4.3.1 Sample

According to talks with industry practitioners and Wright et al. (2006), going private buyouts started to evolve in continental Europe in the late 1990s. Respectively, all transactions are collected which were announced between January 1997 and July 2007, the start of the credit turmoil. To capture all transactions, the following three databases are screened in descending order:[199]

- Thomson Financials' SDC Platinum database,
- The Financial Times' Mergermarket database,
- Incisive Medias' Private Equity Insight database.

From the consolidated pool of takeovers, those targeting financial firms are excluded as their accounts differ systematically from industrial firms. Subsequently, two sanity checks are conducted in order to assure that the sample consists indeed of going privates which are private equity sponsored.

- First, it is assured that the transactions were indeed delisted: Therefore the stock price history is examined for trading suspensions and the findings are verified with press searches.
- Second, it is verified that the buyers are indeed private equity investors: Therefore, we examine each acquirer's mission statement and investment track record as reported on its web pages and in the financial press. Any remaining doubts are addressed by consulting industry experts. Any acquirer who predominantly buys majority stakes (as opposed to minority stakes which tend to be bought by hedge funds) in mature companies (as opposed to venture capitalists who invest in young companies) and for a limited investment horizon (as opposed to strategic buyers who invest over the long run) is considered to be

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[199] Interestingly, although all data providers claim to offer comprehensive coverage, their databases are in fact hardly intersecting but highly complementary: With regard to the final sample, SDC Platinum as the primary database accounted for 53.7% of the transactions, while Mergermarket added 29.6% and Private Equity Insight delivered the remaining 16.7%.

a private equity investor. In case a bank is stated as the acquirer, it is checked whether the transaction was carried out by the bank's private equity arm. If this is not the case, the transaction is excluded. Similarly, it is also verified whether transactions by formerly pure private equity investors such as Blackstone, which have now evolved into organisations offering a range of financial services and advice, have been carried out by their private equity divisions.

This rigorous procedure results in 136 private equity acquisitions that were successfully completed by July 2007. Table 4-2 displays this population and the final sample for which all required data points are available across announcement years and target countries.

Table 4-2: Private equity sample by announcement year and country

This table shows the target country and year distribution of all continental European going private buyouts which were successfully completed by July 2007. Year denotes the year of the buyout announcement. Country is defined as the country where the company is headquartered. In case there are transactions for which data is missing, we report first the population of all deals for the respective year/country entry and note subsequently the number of deals with available data in brackets.

	France	Germany	Sweden	Netherlands	Denmark	Norway	Spain	Finland	Italy	Austria	Hungary	Luxembourg	Belgium	Romania	Poland	Greece	Latvia	Total	Missing data	Final
1997	2 (0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	**0**
1998	1 (0)	1	0	0	1 (0)	0	0	0	0	0	0	0	0	0	0	0	0	3	2	**1**
1999	9 (5)	3	4	0	2 (1)	2	0	2	1	1	0	1 (0)	0	1 (0)	0	0	0	26	7	**19**
2000	4	5	0	2	2	1	0	0	0	1 (0)	0	0	0	0	0	0	0	15	1	**14**
2001	1	2	2	0	1 (0)	0	0	1	0	0	2 (0)	0	0	0	0	0	0	9	3	**6**
2002	4	1	2	3 (2)	1 (0)	0	0	0	1	1 (0)	0	0	1	0	0	0	0	14	3	**11**
2003	6 (5)	4	1 (0)	2 (1)	1	1	1	1	1	0	0	0	0	1 (0)	0	0	0	19	4	**15**
2004	5	0	1	5 (3)	3 (2)	1 (0)	2	0	1 (0)	0	0	0	0	0	0	0	1 (0)	19	6	**13**
2005	3 (2)	2	0	0	1	1 (0)	1	0	0	0	0	1	0	0	0	1 (0)	0	10	3	**7**
2006	2	0	3	2 (1)	1	2	1	0	1 (0)	0	1	0	0	0	1 (0)	0	0	15	3	**12**
Jan. - Jul. 2007	1	0	0	2	0	1 (0)	0	0	0	0	0	0	0	0	0	0	0	4	1	**3**
Total	39	18	13	16	13	9	5	4	5	3	3	2	1	2	1	1	1	136		
Missing data	9	0	1	5	5	3	0	0	2	2	2	1	0	2	1	1	1		35	
Final sample	**30**	**18**	**12**	**11**	**8**	**6**	**5**	**4**	**3**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**0**			**101**

In terms of the population distribution across countries, Table 4-2 shows that France represents with 39 transactions (29%) the most active playground for private equity investors. Further attractive markets seem to be Germany (18, 13%), the Netherlands (16, 12%) and the Scandinavian countries of Sweden (13, 10%), Denmark (13, 10%) and Norway (9, 7%). The remaining 29 transactions (22%) are spread over 11 countries including both developed countries such as Spain and Italy and emerging countries such as Hungary, Romania, Poland and Latvia.

In terms of the population distribution across time, Table 4-2 shows that the acquisition activity took off sharply in the year 1999 with 26 transactions (19%). Over the subsequent years 2000 - 2006, the number ranged between 9 to 19 deals per year, representing a relatively stable private equity sponsored going private activity. The reported 4 transactions for the period January - July 2007 represent only deals which have been completed as of July 2008, the date at which data collection for this chapter ceased. Recent examinations reveal that ultimately 10 private equity acquisitions took place in 2007.

Despite our best efforts as laid out in the subsequent section, we were not able to collect the required data for all transactions. In particular, precise ownership and private equity fund data was missing for several transactions leaving a final sample of 101 acquisitions.[200] This reduction exemplifies the numerous difficulties encountered in collecting a dataset in the continental European context where disclosure requirements have been - at least in the past - less rigorous than in the US or UK. Nevertheless, the final sample remains in terms of the country and time distribution relatively comparable to the underlying population.

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[200] The comprehensive data requirements explain also why the final sample size in this chapter is smaller than in the previous one.

4.3.2 Data and variable definitions

We retrace the ownership structure of all firms by considering all voting stakes equal or larger than 5% as this figure represents the lowest common disclosure threshold across jurisdictions and time.[201] The data is self-collected from the following sources:

1. Historical versions of Bureau Van Dijk's Amadeus database (BVDA) which were recorded on a semi-annual basis from 1997 - 2002 and on a quarterly basis thereafter. The version is selected which approaches the target's fiscal year date prior to the going private announcement most closely.

2. Target company publications such as annual reports and press releases or direct target company statements from their investor relations departments in response to requests.

3. Stock market or regulator publications.

4. Private directories such as the "Hoppenstedt Aktienführer" in Germany.

5. News searches based on Factiva and Google.

The resulting ownership structure serves as the starting point for the construction of the management stake. As BVDA does not deliver reliable information about the board members and their functions,[202] we turn to the annual reports in order to precisely identify the executive members which are considered part of the management team in the study.[203]

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[201] In comparison to chapter 3.3.3.2, the threshold in this chapter is set at 5% since it builds on first-tier ownership data. Consequently, the ownership statistics and the related evidence are not fully congruent in both chapters but they are likely to be highly compatible.

[202] In continental Europe, board systems are heterogeneous in the way that there exist both unitary and two-tier boards. In this context, BVDA reveals two shortages: First, in the case of two-tier boards, members of both the corporate management and the supervisory board are sometimes labelled as "managers". Second, in the case of unitary boards, the database does often not differentiate between executive and non-executive directors.

[203] In the case of two-tier boards, we follow Barontini/Caprio (2006) and consider members of the management body (supervisory body) as executives (non-executives).

Stock and accounting data is retrieved from Thomson Financial's Datastream database and, if necessary, supplemented with information from BVDA and the firms' annual reports. All accounting data points are collected at the last fiscal year date prior to the acquisition announcement. We winsorize all accounting and stock based variables on their upper and lower tails at the 1% level in order to ensure that outliers do not distort results.

PE partnership and fund information is obtained from Thomson VentureXPert, Thomson Banker One, private equity partnerships' websites and direct requests to them.[204]

The definition of the individual variables is summarized in Table 4-1.

4.3.3 Methodology

Central to the calculation of both abnormal event-study returns and premiums to corporate events is the sound assessment of the underlying information release process. This matter is of particular importance in this study's context since (i) disclosure requirements have been traditionally less demanding in continental Europe and (ii) private equity bidders shun the public spotlight. Therefore, we examine database deal synopses and deepen our understanding through additional investigations of Factiva press clippings. Similar to Renneboog et al. (2007), we notice that in a few transactions, the disclosure of the takeover as a private equity backed going private happens not in one but two steps. The first announcement generally refers to takeover negotiations with an undisclosed party or the firm's intention to go private. The involvement of a private equity investor, however, is only disclosed in a subsequent second announcement. In total, there are 20 cases where the takeover information is released in two steps. Following Renneboog et al. (2007), we apply the following event-study and premium methodology to these particular takeovers: With regard to the event study methodology, we calculate event windows around both

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[204] Access to Thomson VentureXPert and Thomson Banker One was only available in the later stage of the research project. This is the reason why the sample transactions were initially sourced from Private Equity Insight, Mergermarket and Thomson SDC Platinum.

announcement dates and sum them up in order to not bias the results.[205] In 6 cases, there is a slight overlap in the first and second event window which we exclude for consistency. Overall, this procedure aims to put the transactions on a more common ground and, thus, to depict the announcement effects more precisely. With regard to the premium methodology, **we** set the final price paid in relation to a benchmark price taken two months prior the first event date (Schwert (1996)).[206] Further, we adjust for market movements with the DJ EUROSTOXX market index, which embraces large, middle and small capitalisation companies of twelve continental European countries (Kaplan (1989a)).

Standard event study and premium methodology (Brown/Warner (1985), Kothari/Warner (2006)) is applied. As a benchmark for the event study abnormal return calculation, we employ the market model. For each firm, the market model parameters α and β are estimated from an ordinary least squares (OLS) regression of the firm's returns on the Dow Jones (DJ) EUROSTOXX index returns over the daily interval [-295,-43] relative to the first announcement date. Subsequently the cumulative abnormal returns (CARs) are calculated for each firm by summing the market model residuals over the respective event window. We winsorize event-study returns and premiums on their upper and lower tails at the 1% level in order to ensure that outliers will not distort the results. Standard econometric tests are employed which are detailed in Renneboog et al. (2007).

4.4   Empirical results

4.4.1   Summary statistics

4.4.1.1 *Firm fundamentals*

Panel A of Table 4-3 depicts the ownership structure of the target companies.

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[205] Renneboog/Simons/Wright (2007) state: "Some earlier research has taken the second date as the event date. It is clear that such results are biased due to the fact that the initial announcement (event 1) has a large effect on the share price and that event 2 could be regarded as a correction to event 1" (Renneboog/Simons/Wright (2007), p. 608).

[206] Hence, this measure includes bid mark-ups and market anticipation.

Table 4-3: Univariate sample characteristics

This table reports descriptive statistics for the sample of 101 going private buyouts. The explanatory variables are defined as in Table 4-1. Panel A describes the ownership structure of the target firms. Panel B takes a closer view at the nature of the largest shareholders. Panel C reports target firm and deal characteristics.

Panel A: Ownership structure

Variable	Mean	Median	Std.Dev.	Presence (%)	Min.	Max.
1st Shareholder	35.26	27.70	28.13	89.1%	0.00	98.66
2nd Shareholder	8.12	7.00	8.80	63.4%	0.00	43.00
Directors	11.26	0.00	24.07	24.8%	0.00	100.00
FreeFloat	39.26	36.27	22.96	-	0.00	94.81

Panel B: Nature of 1st shareholder

Variable (dummies)	#	%
1stShareholder_5/25	34	33.7%
1stShareholder_25/50	26	25.7%
1stShareholder_50/75	15	14.9%
1stShareholder_75/100	15	14.9%
1st Shareholder_Family (Outsider)	16	15.8%
1st Shareholder_Government	7	6.9%
1st Shareholder_Bank	8	7.9%
1st Shareholder_Insurance	2	2.0%
1st Shareholder_Corporation	29	28.7%
1st Shareholder_Holding	17	16.8%
1st Shareholder_Others	11	10.9%

Panel C: Target firm and deal characteristics

´Variable	Mean	Median	Std.Dev	Max.	Min.
Size	435518	181661	748278	4321669	6749
DebtLevel	0.765	0.796	1.876	4.379	-7.950
FreeCashFlow	0.145	0.120	0.130	0.564	-0.134
Tax	0.036	0.037	0.028	0.126	-0.049
DebtCost (LIBOR)	4.762	4.772	0.796	3.484	6.603
Valuation	1.014	0.991	0.296	1.743	0.488
Liquidity	0.288	0.200	0.221	0.848	0.040
Challenged (dummy)	0.168	0.000	0.376	0.000	1.000
Hostile (dummy)	0.050	0.000	0.218	0.000	1.000
ClubDeal (dummy)	0.376	0.000	0.487	1.000	0.000
Age PE Partnership 1	13.168	12.000	9.911	48.000	0.000

In 89.1% of the sample firms, there is at least one outside shareholder which holds a stake larger than 5% in the company. On average, the size of the largest blockholder amounts up to 35.26% which markedly differs from the 23.5% found by Renneboog et al. (2007) for a comparable UK sample. Interestingly and in line with the private benefits hypotheses (H 1.4), private equity investors seem to slightly prefer companies where there is at least one additional outside blockholder: in 63.4 % of buyout targets, a second large outside shareholder is present. Based on the whole sample, the average stake of this potential monitor-of-the-monitor amounts to 8.12%. The management team holds in 24.8% of the sample a significant stake in the target company. Measured over all transactions, the average directors' stake constitutes 11.26% which is in line with the 12.5% reported by Renneboog et al. (2007).

In aggregate, the sum of blockholdings in the sample accounts to 60.74% of the ownership structure. This contrasts heavily to the 37.7% of Renneboog/Simons/Wright's (2007) UK sample. Hence, the stylized fact that ownership is far more concentrated in continental European than Anglo-Saxon markets (e.g. La Porta et al. (1999), Mayer (2008); amongst others) holds for our sample of buyout targets.

Panel B takes a closer look at the size and nature of the largest outside blockholder, which is at the heart of our governance story in the continental European context. In 15 cases, the largest blockholder owns a stake larger than 75%. Such a "super-majority" grants them far-reaching rights, e.g. to amend the corporate charter. In a further 15 firms, the largest blockholder still possesses a majority but less or equal than 75%. Hence, these shareholders can still extensively control the management although the existence of an additional 25%-blockholder might limit their discretion (Jenkinson/Ljungqvist (2001)). In 26 cases, the largest blockholder owns at least 25% but less than 50%. Such a minority block can be used to veto against important issues such as for example profit transfer and control agreements (Franks/Mayer (2001)). Finally, the largest outside blockholders are primarily corporations (28.7%), holdings (16.8%) and families (15.8%) followed by banks (7.9%), the government (6.9%) and insurance companies (2.0%).

Panel C provides an overview of target firm and deal characteristics. The median continental European private equity target has a market capitalization of 182 m€. In terms of leverage, the average firm has a net debt to EBITDA ratio of 0.765. The London Interbank Offer Rate (LIBOR) - the proxy for the economy wide cost of debt refinancing – averages 4.8% across the cross-section of transactions. Free cash flow and tax liabilities amount on average to 14.5% and 3.6% of the firms' market value of equity. With regard to the pre-buyout stock performance, the valuation average (median) of 1.014 (0.991) suggests that the stocks have broadly performed in line with the overall market development. The average (median) liquidity variable points towards a thin trading volume: In the last half year before the buyout announcement, the target stocks recorded a zero percent return in 28.8% (20.0%) of the trading days. Only 16.8% of the deals involved a competing bid and only 5% included a hostile target. Finally, 37.6% of the transactions are conducted by a syndicate of private equity investors and the average age of the sample's private equity partnerships is 13.2 years.[207]

4.4.1.2 Announcement returns and premiums

Panel A of Table 4-4 presents the cumulative abnormal returns (CARs) over different event windows. As described in detail in the methodology section, the information release of the private equity backed going private transaction happens in 81 cases in a single event (event 1) but in 20 cases in two events (event 1 and 2). we account for this particularity by reporting three tables: (i) The CARs relative to event 1 (left-handed table), (ii) the CARs relative to event 2 (centre table) and (iii) the sum of the CARs relative to event 1 and 2 (right-handed table).

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[207] This number refers to the variable *AgePePartnership*, i.e. in the case of a club deal it measures the age of the youngest syndicate partner.

Table 4-4: Cumulative abnormal returns

This table shows the cumulative abnormal returns (CARs) for different event windows around the takeover announcements. In 20 of the 101 transactions, the disclosure of the takeover as a private equity sponsored going private happens *not in one but two steps*: in the *first* announcement (event 1), only information about takeover negotiations with an undisclosed party or the firm's intention to go private is revealed whereas the involvement of a private equity investor is only disclosed in a subsequent *second* announcement (event 2). For the 20 transactions with such an information release process, we calculate event windows around both announcements and sum them up to not bias our results. In 6 cases, we find a slight overlap in the event windows 1 and 2 which we exclude. This two-step event study approach is in line with Renneboog et al. (2007). For the remaining 81 transactions, the disclosure of the takeover as a private equity sponsored going private happens *in one step* (event 1*)*. To account for this information release process, three tables are reported in Panel A: (i) The CARs relative to event 1 (left-handed table with 81+20 transactions), (ii) the CARs relative to event 2 (centre table with 20 transactions) and (iii) the sum of the CARs relative to event 1 and 2 (right-handed table with 101 transactions). Panel B reports the CARs across the four jurisdictions with the highest numbers of transactions.

The cumulative abnormal returns are calculated as outlined in section 4.3.3. We employ a t-test and a generalized sign test. *, ** and *** denote statistical significance at the 10%, 5% and 1% level.

Panel A: Cumulative abnormal returns over different event windows

Event window	Event 1 (n = 101)				Event 2 (n = 20)				Events 1 and 2 (n = 101)			
	Mean (%)		Median (%)		Mean (%)		Median (%)		Mean (%)		Median (%)	
[-1,1]	12.12%	***	8.44%	***	4.55%	***	3.97%	**	12.97%	***	11.27%	***
[-2,2]	13.84%	***	11.22%	***	6.01%	***	5.41%	***	14.97%	***	14.86%	***
[-3,3]	14.29%	***	13.14%	***	5.59%	***	4.51%	***	15.34%	***	14.70%	***
[-5,5]	15.55%	***	13.55%	***	4.59%	***	3.09%	***	16.41%	***	15.44%	***
[-10,10]	16.69%	***	16.75%	***	5.87%	***	5.44%	***	17.80%	***	17.09%	***
[-20,20]	17.30%	***	17.81%	***	4.81%	*	4.64%	***	18.20%	***	17.81%	***
[-40,40]	17.99%	***	18.49%	***	4.03%		3.67%		18.75%	***	19.36%	***

Table 4-4: Cumulative abnormal returns (continued)

Panel B: Cumulative abnormal returns across jurisdictions

Event window	France (n = 30)		Germany (n = 18)		Sweden (n = 12)		Netherlands (n = 11)	
	Mean (%)	Median (%)	Mean (%)	Median (%)	Mean (%)	Median (%)	Mean (%)	Median (%)
[-1,1]	4.1 ***	0.1	11.05 ***	9.66 **	22.57 ***	19.13 **	23.65 ***	23.39 **
[-2,2]	6.2 ***	3.2 ***	15.04 ***	14.14 ***	25.81 ***	21.32 ***	24.47 ***	22.59 **
[-3,3]	7.8 ***	4.4 ***	14.59 ***	14.22 ***	26.03 ***	20.75 ***	24.81 ***	24.70 **
[-5,5]	7.4 ***	5.9 ***	15.22 ***	15.05 ***	31.14 ***	24.40 ***	24.99 ***	25.26 **
[-10,10]	10.3 ***	9.0 ***	17.11 ***	16.95 ***	30.81 ***	27.63 ***	24.19 ***	25.40 **
[-20,20]	10.7 ***	8.7 ***	17.80 ***	14.86 ***	31.90 ***	27.80 ***	23.57 ***	26.91 **
[-40,40]	10.8 ***	11.2 ***	19.65 ***	24.41 ***	30.38 ***	25.98 ***	27.62 ***	31.62 **

In the left-handed table, we see that the narrowest reported event window [-1,1] carries a positive mean abnormal return of 12.12%. Extending the period to the daily interval [-40,40] leads to a continuous increase in the mean CAR to 17.99%. All reported returns are highly statistically different from zero.

The centre table supports our conjecture that a precise treatment of the underlying information release process (particularly in private equity related research) is important: At the second event, there is a mean abnormal return of 4.55% in the event window [-1,1]. The magnitude of this shareholder wealth effect persists over longer observation periods. With the exception of the longest event window, all returns are statistically different from zero. It has to be noted though, that the statistical evidence has to be treated with care since it is based on a limited sample size.

In the right-hand table, the investor reaction from both events is merged. This increases the [-1,1] mean CAR from event 1 by 0.78% (12.97% - 12.12%). This result is upheld over longer observation periods: The mean CAR over the [-40,40] interval rises by 0.76. All CARs are highly statistically significantly different from zero.

The results are visualized in Figure 4-1. The *red line* labelled "overall" comprises all 101 buyouts irrespective of whether the takeover information was released in one or two steps. In the pre-announcement phase, there is almost no share price run-up speaking for the precise collection of the event dates. This is further strengthened by the relative constant share price development after the announcement. The *green line* consists of all 81 transactions where the takeover information reached the market in one step. The *straight blue* line consists of the remaining 20 transactions, where the takeover information was revealed in two steps. The *dashed blue lines* separately report investor's reaction to event 1 and 2 of the 20 transaction, where the takeover information was revealed in two steps. Around the announcement day, there is a clear increase in the stock price for both dashed blue lines underlining the importance of considering both events.
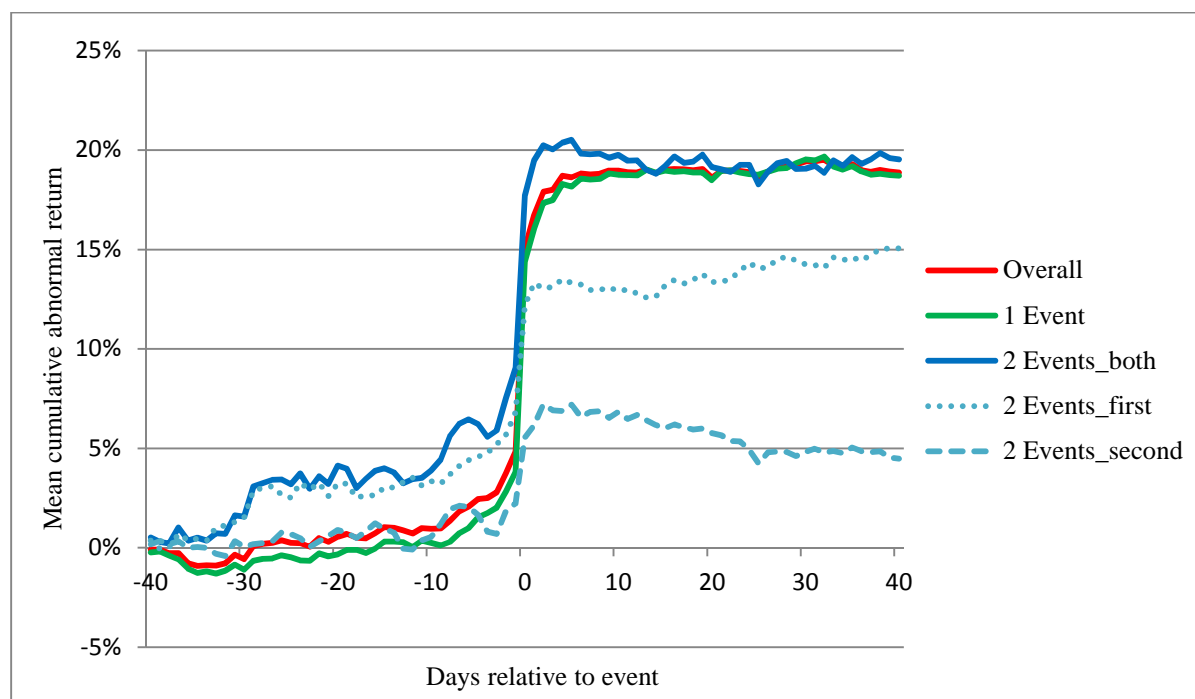
Figure 4-1:   Mean cumulative abnormal returns
Source: Author

Overall, the announcement of a sophisticated financial investor's entry seems to be appreciated by shareholders. We find significant positive mean CARs over all event windows. However, the results are substantially lower than in the Anglo-Saxon case. For the narrow event window [-1,1], the mean CAR in continental Europe amounts to 12.97% while Bargeron et al. (2008) report for the US an estimate of 20.64% and Renneboog et al. (2007) show for the UK an estimate of 25.11%. For the longer event window [-5,5], the mean CAR in continental Europe equals 16.41% while the equivalent estimates in the US and UK are 20.80% (Bargeron et al. (2008)) and 28.17% (Renneboog et al. (2007)), respectively. Consequently, when focusing on the longer event window, the mean abnormal return in continental Europe is 4.39 and 11.76 percentage points lower than in the US and UK, respectively. Potential reasons for the lower announcement returns in continental Europe may be the higher deal completion risk and/or less value creation potential due to an effective governance structure in the pre-buyout firm where blockholders monitor the management but are constrained in their private benefit consumption.

Panel B of Table 4-4 reports the CARs across the four jurisdictions with the highest numbers of transactions.[208] In France, shareholder wealth effects are remarkably lower across all event windows. In the closest event window [-1,1], the mean CAR amounts only to 4.1% and rises to 10.8% over the [-40,40] interval.[209] In Germany, shareholder wealth effects are broadly in line with the overall sample. Finally, Sweden and the Netherlands show higher abnormal returns. Swedish (Dutch) targets record a mean CAR of 22.57% (23.65%) for the [-1,1] period and a 30.38% (27.62%) mean CARs for the [-40,40] period.

Table 4-5: Premiums over different anticipation windows

This table shows the premiums for the sample of 101 private equity sponsored going private buyouts. In 20 of the 101 transactions, the disclosure of the takeover as a private equity sponsored going private happens not in one but two steps: in the first announcement (event 1), only information about takeover negotiations with an undisclosed party or the firm's intention to go private is revealed whereas the involvement of a private equity investor is only disclosed in a subsequent second announcement (event 2). In the remaining 81 transactions, the disclosure of the takeover as a private equity backed going private happens *in one step* (event 1*).* For all transactions, we set the final offer price in relation to the market quote 1 day (2 weeks, 1 month, 2 months) *before* event 1. To adjust the raw premiums for the market development, we use the DJ EUROSTOXX as the market index.
Panel A reports raw and market-adjusted premiums over different anticipation windows. Panel B reports the adjusted premiums across the four jurisdictions with the highest numbers of transactions. We employ a t-test and a generalized sign test. *, ** and *** denote statistical significance at the 10%, 5% and 1% level.

Panel A: Raw and adjusted premiums

Time before announcement	Mean (%)		Median (%)		25%	75%
Raw Premium						
1 day	23.8%	***	19.8%	***	8.8%	35.1%
2 weeks	28.3%	***	24.8%	***	14.2%	40.6%
1 month	29.3%	***	27.1%	***	16.7%	38.7%
2 months	31.3%	***	31.5%	***	16.5%	42.9%
Adjusted Premium						
1 day	23.8%	***	19.6%	***	8.6%	35.5%
2 weeks	28.0%	***	23.2%	***	13.4%	38.3%
1 month	28.5%	***	25.7%	***	13.6%	34.6%
2 months	28.3%	***	25.8%	***	14.3%	41.6%

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[208] When comparing the country subsamples to the overall sample, we refrain from explicit statistical tests due to the small number of transactions for each country.

[209] For the smallest event window, the median CAR is not statistically significantly different from zero. For all remaining event windows, however, the median CAR is significantly positive.

Table 4-5: Premiums over different anticipation windows (continued)

Panel B: Adjusted premiums across jurisdictions

Time before announcement	France (n = 30)		Germany (n = 18)		Sweden (n = 12)		Netherlands (n = 11)	
	Mean (%)	Median (%)	Mean (%)	Median (%)	Mean (%)	Median (%)	Mean (%)	Median (%)
1 day	17.8 ***	14.6 ***	22.1 ***	16.0 ***	33.5 ***	31.3 ***	28.7 ***	34.3 ***
2 weeks	21.1 ***	19.5 ***	27.3 ***	22.8 ***	40.0 ***	34.1 ***	31.0 ***	33.8 ***
1 month	21.0 ***	19.9 ***	29.2 ***	21.6 ***	37.6 ***	33.8 ***	29.5 ***	31.7 ***
2 months	18.9 ***	19.0 ***	31.6 ***	31.2 ***	33.1 ***	30.2 ***	33.6 ***	35.1 ***

Table 4-5 reports the final premiums paid by private equity investors to target shareholders. In line with the CAR evidence, Panel A confers that there is only little takeover anticipation in the immediate days around the announcement. The mean market-adjusted (raw) premium increases from 23.85% (23.76%) to 28.04% (28.26%) when the reference stock price is set two weeks instead of one day prior to the announcement day. Extending the window to 2 months increases the market-adjusted (raw) premium only modestly to 28.34% (31.33%). All premiums are highly statistically different from zero. However, they are slightly lower compared to the Anglo-Saxon evidence. In chapter 5, this dissertation finds that the mean premium in the US amounts to 31.30%[210] and Renneboog et al. (2007) report for the UK a raw, and thus, not directly comparable mean estimate of 40.10%. Consequently, when focusing on the comparable US figure, the premium in continental Europe is 2.96 percentage points lower than in the US. This pattern is consistent with the notion that continental European target firms offer less remaining value creation potential than their US counterparts since the former are characterised by a more effective governance structure. More precisely, blockholders have strong incentives to curtail managerial misbehaviour and, potentially, they are constrained in their own private benefit consumption by the cross-monitoring of their peers. The regression analysis in section 4.4.2 will test this notion in detail.

Panel B takes a closer look at the adjusted premium pattern across the four jurisdictions with the highest numbers of transactions.[211] Similar to the CAR evidence, we find that shareholders receive lower premiums in France. The premiums for German targets are broadly in line with the cross-country average. In Sweden, premiums are higher than for the overall sample when the reference price is close to

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[210] These values are in line with Bargeron et al. (2008). Older studies as summarized in footnote 131 report premium estimates in the range of 30 % to 55% over the market value of equity. However, these studies predominantly focus on relatively small samples from the first buyout wave while chapter 5 and Bargeron et al. (2008) are based on large samples comprehending transactions from both the first and second buyout wave. When turning to the median premium estimates, the premium differential gets smaller but Bargeron et al.'s (2008) estimate suggests that there is still a differential of 2.8 percentage points.

[211] When comparing the country subsamples to the overall sample, we refrain from explicit statistical tests due to the small number of transactions for each country.

the announcement day but the differential diminishes if the reference price is extended to span a market anticipation and mark up period of 2 months. Similarly, the premiums in the Dutch context seem to lie slightly above the overall sample. These results, however, have to be interpreted with care due to the limited number of observations per jurisdiction.

4.4.2 Regression results

In this section, we employ multivariate regression analysis in order to understand which factors drive the premiums and cumulative abnormal returns (CAR). With regard to the premium analysis, the final bid price is set in relation to the stock price 2 months before the first buyout announcement. With regard to the CAR analysis, the focus lies on the event window [-1,1] which captures the majority of the announcement effect. Thereby, the results will be comparable to the bulk of the Anglo-Saxon work and it is ruled out that they will be distorted by noise, i.e. other corporate events shortly before or after the buyout announcement. The results are robust to variations of the event window size. To control for potential heteroscedasticity, White (1980) robust estimates of the standard errors are employed. The correlations in Table 4-6 recommend that the results are not subject to multicollinearity issues.[212] Six regression models are estimated which are all statistically significant at the 1% level. The adjusted R² for the CAR regression models 1 to 3 ranges from 34% to 36% whereas its equivalent for the premium regression models 4 to 6 lies between 14% and 16%.

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[212] Please note that the variable *1ˢᵗShareholder* and its respective sub variables according to (i) the economic threshold of the stake and (ii) the identity of the shareholder are tested in separate regression models. An additional examination of the model variance inflation factors (VIFs) confirms that there are no multicollinearity issues.

Table 4-6: Spearman correlations

This table contains Spearman rank correlation coefficients. All variables are defined as in Table 4-1.

	1stShareholder	1stShareholder_75/100	1stShareholder_50/75	1stShareholder_25/50	1st Shareholder_Family (Outsider)	1st Shareholder_Government	1st Shareholder_Bank	1st Shareholder_Corporation	1st Shareholder_Holding	2nd Shareholder_dummy>5%	Director
1st Shareholder	1.00										
1stShareholder_75/100	0.74 *	1.00									
1stShareholder_50/75	0.39 *	-0.17 *	1.00								
1stShareholder_25/50	0.03	-0.24 *	-0.23 *	1.00							
1st Shareholder_Family (Outsider)	0.14	0.01	0.11	0.07	1.00						
1st Shareholder_Government	0.04	-0.09	0.15	0.03	-0.08	1.00					
1st Shareholder_Bank	0.13	0.00	0.21 *	-0.04	-0.12	-0.08	1.00				
1st Shareholder_Corporation	0.70 *	0.75 *	0.05	-0.16	-0.18 *	-0.12	-0.18 *	1.00			
1st Shareholder_Holding	0.18 *	-0.04	0.17 *	0.26 *	-0.14	-0.09	-0.14	-0.21 *	1.00		
2nd Shareholder_dummy>5%	-0.19 *	-0.33 *	-0.20 *	0.39 *	0.19 *	0.00	-0.02	-0.29 *	0.06	1.00	
Director	-0.50 *	-0.20 *	-0.19 *	-0.21 *	-0.12	-0.08	-0.11	-0.21 *	-0.18 *	-0.44 *	1.00
DebtLevel	0.03	-0.10	0.11	0.10	0.04	0.07	-0.09	-0.06	0.15	0.10	-0.06
DebtCost (LIBOR)	0.09	0.10	0.10	-0.14	0.03	-0.05	0.00	0.04	0.12	-0.01	-0.03
FreeCashFlow	-0.02	-0.02	-0.02	0.07	-0.05	0.11	0.05	-0.04	-0.01	-0.01	0.14
Tax	-0.05	-0.02	-0.09	0.13	-0.05	0.09	0.21 *	-0.13	-0.05	-0.17 *	0.18
Valuation	-0.02	-0.06	-0.11	0.23 *	-0.01	-0.01	0.05	0.02	-0.13	0.09	0.06
Liquidity	0.35 *	0.39 *	-0.08	0.08	-0.02	-0.14	0.07	0.33 *	0.08	-0.14	0.03

Table 4-6: Spearman correlations (continued)

	1stShareholder	1stShareholder_75/100	1stShareholder_50/75	1stShareholder_25/50	1st Shareholder_Family (Outsider)	1st Shareholder_Government	1st Shareholder_Bank	1st Shareholder_Corporation	1st Shareholder_Holding	2nd Shareholder_dummy>5%		Director
ClubDeal dummy	-0.03		-0.16	0.09	0.13	0.13	0.04	0.07	-0.15	-0.02	0.21 *	-0.22
Age PE Partnership	-0.02		0.06	-0.22 *	0.18 *	0.12	-0.14	-0.09	0.03	-0.02	0.09	0.02
Size	-0.03		-0.05	-0.08	0.14	-0.06	-0.01	-0.07	0.04	-0.01	0.17 *	-0.16
Challenged	-0.20	*	-0.12	-0.19 *	0.09	-0.08	-0.07	-0.06	-0.05	-0.12	0.23 *	-0.05
Hostile	-0.21	*	-0.09	-0.09	-0.13	-0.03	-0.05	-0.03	-0.11	-0.07	0.17 *	-0.07

(Table continues on next page)

Table 4-6: Spearman correlations (continued)

	DebtLevel		DebtCost (LIBOR)		FreeCashFlow		Tax		Valuation		Liquidity		ClubDeal dummy		Age PE Partnership		Size		Challenged		Hostile
DebtLevel	1.00																				
DebtCost (LIBOR)	-0.01		1.00																		
FreeCashFlow	0.19	*	0.19	*	1.00																
Tax	0.06		0.11		0.37	*	1.00														
Valuation	0.17	*	-0.47	*	0.01		0.12		1.00												
Liquidity	-0.07		0.15		0.26	*	0.20	*	-0.07		1.00										
ClubDeal dummy	0.02		0.01		-0.16		0.08		-0.07		-0.29	*	1.00								
Age PE Partnership	0.09		-0.16		0.06		-0.13		0.20	*	-0.14		-0.26	*	1.00						
Size	0.03		-0.09		-0.16		-0.16		-0.01		-0.35	*	0.37	*	0.08		1.00				
Challenged	0.03		-0.10		-0.15		-0.10		0.13		-0.23	*	0.20	*	0.12		0.39	*	1.00		
Hostile	0.00		0.03		-0.08		-0.13		0.01		-0.13		0.11		0.15		0.04		0.51	*	1.00

4.4.2.1 Governance related results in the continental European context

From Table 4-7 we see that there is no support for Hypotheses 1.1 which states that premiums and abnormal returns are more pronounced when executive managers hold either relatively little or high stakes in the pre-buyout company. Both the *Directors* and *Directors²* variables are statistically insignificant across all six models. Consequently, the potential to strongly align manager with shareholder incentives in the post-buyout company through an adequate managerial ownership stake seems not to be a key agency factor leading to higher announcement returns or premiums.

This finding might be attributable to the existence of large outside blockholders who have the power and incentives to curb manager's behaviour. As stated in Hypotheses 1.2, abnormal returns and premiums shall be lower when a blockholder has monitored the pre-buyout firm since there is less remaining potential to improve firm performance post-buyout. Consistent with this reasoning, we find that the stake of the largest outside blockholder is negatively related to both abnormal returns (model 1) and premiums (model 4). The estimated coefficients are statistically and economically significant: a 1% increase in the stake of the largest owner implies a 2.4% (2.7%) decrease in the abnormal return (premium).

To deepen our understanding of the monitoring hypothesis, we divide the largest blockholders into groups according to the economic thresholds at 25, 50 and 75%. The results for the CARs are reported in model 2 and the results for the premiums are reported in model 5. With regard to the CARs, model 2 suggests that the monitoring argument holds for companies where the largest blockholder holds voting rights in excess of 75%. Such a supermajority grants the blockholder far-reaching rights[213] and thereby allows her/him to monitor the management rigorously. With regard to the premiums, model 5 similarly implies that the monitoring argument applies to companies where the largest blockholder holds a super- or simple-majority. From a pure monitoring perspective, one would have expected to see a larger negative

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[213] For instance in Germany, a supermajority enables the blockholder to "amend the corporate charter, change the composition of the supervisory board, and enter into profit transfer and control agreements" (Jenkinson/Ljungqvist (2001), p. 402).

coefficient on the variable *1stShareholder_75/100* than on the variable *1stShareholder_50/75*. The estimated coefficients are, however, of similar height. Hence, there seems to be a counter effect at work. For instance, given that squeeze out thresholds lie in most continental European jurisdictions at 90% (Ventoruzzo (2010)), it may be that blockholders demand higher premiums for 75% plus stakes (since they reduce the transaction failure risk for private equity investors significantly) thereby balancing the lower remaining monitoring potential.

Monitoring may not only vary with the size of the largest blockholder but also by her/his identity. Consequently, we build interaction variables of the largest blockholder's stake with dummy variables representing her/his type (families, governments, banks, corporations, and holding firms). As stated in Hypotheses 1.3, we expect abnormal returns and premiums to be lower when the largest shareholder in the pre-buyout company is a family, bank, corporation or holding company that shall have more incentives to engage in monitoring than the government. In both the CAR (model 3) and premium (model 3) regression, the estimated coefficients for *Corporations*, *Banks* and *Holdings* are economically and statistically significantly negative. This result lends support towards the view that these blockholders act indeed as effective monitors thereby leaving less potential for performance improvements in the post-buyout company which translates into lower abnormal returns and premiums. Conversely, the estimated coefficients for *Government* and *Family* are not statistically significantly different from zero. While the result for governments seems plausible in the light that previous empirical research has found this type of shareholder to be a weak monitor, the result for families is less clear-cut. A plausible explanation is that private benefit consumption as a competing factor may counterbalance the monitoring effects and, hence, the latter explanation does not show up empirically. Indeed, in chapter 3.4.2.1 we have seen that companies with large family blockholders have a lower takeover probability since these families are likely to consume substantial private benefits and therefore demand higher premiums.[214]

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[214] In particular, chapter three shows with respect to family controlled firms that a one-percent increase in the measure of private benefits of control has twice the negative effect on the likelihood of the

Next, we aim to shed light on the private benefits argument by testing H1.4 which states that abnormal returns and premiums are expected to be lower when there is a second large blockholder who can confine the discretion of the largest shareholder to appropriate private benefits in the pre-buyout company. We find strong support in favour of H1.4. Across all six models, the estimated *2ndShareholder* coefficient is statistically and economically significant: the presence of a second outside blockholder confers lower abnormal returns and premiums in the height of 13% - 15% (12% - 15%) which is sizeable at a mean of 12% (28%).[215]

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firm being taken over by private equity investors than a one-percent increase in the monitoring incentives. This result may explain why this chapter and the previous literature has found rather inconclusive results on the monitoring benefits of family shareholders but fairly strong evidence of the exploitation of private benefits of control. In this chapter, we are able to shed indirect light on the private benefits argument by investigating the monitoring role of the second largest blockholder to confine rent extraction by the largest shareholder. An interesting avenue for future research would be to extend the analyses from the first-tier to the ultimate ownership level as best exemplified by the comprehensive revisions from Achleitner/Betzer/Hinterramskogler (2008) to Achleitner et al. (2011 forthcoming). The differentiation between the votes and cash flow rights of the largest ultimate shareholder would help to disentangle her/his monitoring and private benefit consumption incentives more sharply.

[215] An alternative (but not mutually exclusive) interpretation would be that the *second largest* shareholder acts as an additional monitor of the management besides the *largest* shareholder. However, the *largest* shareholder holds a mean stake of 35.26% across the sample and, thus, has already high incentives to control the management effectively. Consequently, the *second largest* shareholder is more likely to focus her/his monitoring efforts on the "uncontrolled" *largest* shareholder than on the already "controlled" management. Once again, an interesting avenue for future research would be to extend the analyses from the first-tier to the ultimate ownership level as best exemplified by the comprehensive revisions from Achleitner/Betzer/Hinterramskogler (2008) to Achleitner et al. (2011 forthcoming). The differentiation between the votes and cash flow rights of the largest ultimate shareholder would help to disentangle her/his monitoring and private benefit consumption incentives more sharply.

Table 4-7: Cumulative abnormal return and premium regressions

This table reports cross-sectional premium and cumulative abnormal return regressions for the sample of 101 going private acquisitions. The CARs are measured over the daily event window [-1,1] and the market-adjusted premiums relative to the stock price 2 months before the first transaction announcement. All explanatory variables are defined as in Table 4-1. The numbers in the upper rows represent the regression coefficients. The numbers in the lower rows are t-statistics based on robust standard errors (White (1980)). *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Hypothesis	Variable	1 CAR	2 CAR	3 CAR	4 Premium	5 Premium	6 Premium
Governance							
	1^{st}Shareholder	**-0.0024**			**-0.0027**		
		(2.70)***			(1.94)*		
	1stShareholder_75/100		**-0.0023**			**-0.0025**	
			(2.72)***			(2.00)**	
	1stShareholder_50/75		-0.0011			**-0.0026**	
			1.29			(1.98)*	
	1stShareholder_25/50		-0.0004			-0.0004	
			0.32			0.21	
	1^{st}Shareholder_Family (Outsider)			-0.001			-0.0013
				0.96			0.82
	1^{st}Shareholder_Government			-0.0002			0.001
				0.14			0.44
	1^{st}Shareholder_Bank			**-0.0023**			**-0.0031**
				(2.07)**			(2.41)**
	1^{st}Shareholder_Corporation			**-0.002**			**-0.0025**
				(2.08)**			(1.90)*
	1^{st}Shareholder_Holding			**-0.0022**			**-0.004**
				(1.90)*			(2.53)**
	2^{nd}Shareholder_dummy>5%	**-0.132**	**-0.1463**	**-0.1277**	**-0.1179**	**-0.1492**	**-0.1184**
		(4.00)***	(4.14)***	(3.14)***	(2.25)**	(2.75)***	(2.21)**

Table 4-7: Cumulative abnormal return and premium regressions (continued)

Hypothesis	Variable	1 CAR	2 CAR	3 CAR	4 Premium	5 Premium	6 Premium
	Director	-0.0021	-0.0012	-0.0009	-0.005	-0.005	-0.004
		1.15	0.65	0.48	1.51	1.55	1.23
	Director²	0	0	0	0	0.0001	0
		0.01	0.23	0.42	1.16	1.25	0.9
Capital structure							
	DebtLevel	-0.0039	-0.0064	-0.0053	0.0199	0.0194	0.0201
		0.53	0.77	0.65	1.46	1.37	1.39
	DebtCost (LIBOR)	-0.0312	-0.0248	-0.0259	-0.0008	0.0011	0.0144
		1.38	1.08	1.08	0.02	0.03	0.39
	FreeCashFlow	0.0403	0.0254	0.0434	-0.1388	-0.1381	-0.1652
		0.32	0.22	0.32	0.88	0.92	0.97
	Tax	-0.5212	-0.5233	-0.5457	-1.0474	-1.201	-1.1409
		1.07	1.04	1.1	1.25	1.36	1.29
Valuation							
	Valuation	**-0.117**	**-0.1251**	**-0.1212**	**-0.1833**	**-0.1908**	**-0.1941**
		(2.20)**	(2.40)**	(2.15)**	(2.18)**	(2.30)**	(2.24)**
	Liquidity	0.0696	0.0649	0.0818	**0.288**	**0.2532**	**0.3406**
		-0.82	-0.73	-0.94	(2.11)**	(1.82)*	(2.51)**
	Challenged	-0.0374	-0.0339	-0.0318	-0.0377	-0.0459	-0.0374
		0.82	0.76	0.69	0.52	0.63	0.52
	Hostile	-0.0763	-0.0575	-0.07	0.151	0.1856	0.1474
		1.05	0.83	0.97	1.33	1.61	1.23
Private equity							
	ClubDeal dummy	0.0092	0.0018	0.0012	0.0564	0.053	0.0469
		0.28	0.06	0.04	1.19	1.09	1.01

Table 4-7: Cumulative abnormal return and premium regressions (continued)

Hypothesis	Variable	1 CAR	2 CAR	3 CAR	4 Premium	5 Premium	6 Premium
	Age PE Partnership	0.0008	0.0008	0.0007	0.0017	0.0012	0.002
		0.51	0.54	0.47	0.85	0.52	0.99
Control variables							
	Germany dummy	-0.054	-0.0421	**-0.0698**	-0.0306	-0.0186	-0.0455
		1.63	1.29	(2.35)**	0.41	0.25	0.6
	France dummy	**-0.128**	**-0.1385**	**-0.1384**	-0.0405	-0.0407	-0.0494
		(4.13)***	(4.24)***	(4.43)***	0.72	0.69	0.9
	Sweden dummy	0.0418	0.0526	0.0547	0.0512	0.0464	0.0649
		0.88	1.1	1.08	0.82	0.74	0.99
	Netherlands dummy	0.0422	0.0521	0.0557	-0.0715	-0.0675	-0.0613
		0.79	0.99	1.01	1.01	0.98	0.87
	Period 01-03 dummy	-0.0043	0.006	0.0159	0.042	0.0368	0.0837
		0.13	0.18	0.42	0.72	0.65	1.29
	Period 04-07 dummy	0.0086	0.0274	0.025	0.0572	0.0477	0.0987
		0.24	0.7	0.62	1.06	0.84	1.66
	Size	-0.0263	-0.028	-0.0233	-0.0136	-0.0153	-0.0091
		1.42	1.5	1.21	0.37	0.45	0.25
	Constant	0.6297	0.558	0.5622	0.5629	0.5703	0.4457
		(4.19)***	(3.63)***	(3.40)***	(2.37)**	(2.39)**	(1.77)*
	Observations	101	101	101	101	101	101
	Adjusted R-squared	0.3656	0.3665	0.3368	0.1427	0.1414	0.1565
	F value	4.74***	4.89***	5.25***	2.37***	2.33***	2.5***

4.4.2.2 Capital structure related results

With regard to the *capital structure hypotheses*, the following picture evolves. In all six models, the leverage, free cash flow and tax liability levels do not explain cross-sectional variation in the abnormal returns and premiums. We examine different proxies but the aforementioned results are robust to all alternative specifications. Hence, the potential to increase leverage in order to both realize additional tax shields and to curtail managerial discretion at free cash flow seems not to drive abnormal returns and premiums. Hence, Hypotheses 2.1 is rejected. Similarly, the LIBOR as our proxy for the market-wide cost of debt is not related to abnormal returns and premiums. Hence, there is no evidence for Hypotheses 2.2 that favourable lending conditions stemming from periodical capital market mispricing impact buyout pricing and, consequently, announcement returns.

4.4.2.3 Valuation related results

With regard to the *valuation hypotheses*, we find widespread evidence for Hypotheses 3.1 that the relative underperformance of the target in comparison to the stock market confers higher abnormal returns and premiums. The variable *Valuation* is negative and statistically significant at the 1% (5%) level across all CAR (premium) models. This lends support to Kaplan and Schoar's (2005) notion that private equity investors are sophisticated institutional investors with an excellent network which allows them to spot underperforming firms and increase their value (under private ownership). Furthermore, we also find evidence that a thin, pre-buyout trading volume of the target stock leads to higher premiums but not to announcement returns. A potential explanation may be that a thin trading volume requires private equity investors to offer *ultimately* a higher *final* (premium) offer price (since he aims to secure full control) but that the *initial* offer *at the announcement* may have been too low to cause illiquidity-induced abnormal return increases.

Finally, the potential for private equity investors to benefit from their identification skills of undervalued targets seems not to be constrained by bidding competition and resistance from target managers. Both coefficients for *Challenged* and *Hostile* are not

statistically significantly different from zero. Hence, Hypotheses 3.2 is rejected. It has to be noted, however, that these results have to be treated with care since in practice it is difficult to measure how competitive or hostile a bidding process is.[216]

4.4.2.4 Private equity related results

Concerning *the private equity investor hypotheses, we* find no evidence that the experience of the funds' general partners or the syndication of partnerships drives abnormal returns and premiums. Both coefficients for *Age PE Partnership* and *ClubDeal* are statistically insignificant in all six models. In robustness checks, various alternative proxies for both hypotheses are tested.[217] None of them helps in explaining the cross-sectional variation in the abnormal returns or premiums. Consequently, the syndication (H 4.1) and experience (H 4.2) hypotheses are rejected.

4.4.2.5 Further variables

With respect to country-fixed effects, we find that abnormal announcement returns in model 1 to 3 are significantly lower in France than in other continental European countries (at the 1% level). However, this difference vanishes for the premiums as evidenced in model 4 to 6. A potential explanation for these results is that the deal completion risk may be relatively high in France. Time-fixed effects for up- and down-turn stock market periods (*Period 01-03* and *Period 04-07*)[218] and firm size do not impact abnormal returns or premiums.

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[216] For instance, conventional bidding competition or intensity measures from commercial databases consider not that "the board of directors can always threaten to open the bid process to another bidder - under so-called go-shop agreements - and so a good board of directors will negotiate hard even with a sole bidder" (Jenkinson/Stucke (2010), p. 19).

[217] To proxy for syndication, two proxies are employed: *ClubDeal* is a dummy set to one if two or more private equity investors participate in the equity syndicate, *Syndication* measures the number of private equity investors participating in the equity syndicate. To proxy for the experience of general partners four proxies are employed: *AgePePartnership* measures the age of the youngest syndicate partner whereas *AgePePartnership2* measures the age of the oldest syndicate partner. *FirstFund* is set to one, if *one* of the syndicate partners is a first time-fund whereas *FirstFund2* is set to one, if *all* of the syndicate partners are first time-funds.

[218] Time periods are used instead of years since the sample size is limited and the regression models include already a high number of independent variables.

4.5 Summary

With the second buyout wave, PE's interest spilled over into continental European markets. Although these markets are characterised by many distinctive features, little systematic research is available on how private equity adapts to this peculiar setting. Based on this lack of evidence, we examine the pricing of going private buyouts in the form of the final premiums paid by private equity investors and the abnormal returns to shareholders at the immediate announcement. Going private transactions were a significant driver behind the last buyout wave and represent an interesting research object in the continental European context since both (i) sharp pricing measures can be calculated due to market quotes and (ii) targets are relatively closely held. Consequently, this chapter may not only help in understanding the pricing of public buyout targets but also the one of private buyout targets.

As a distinctive feature of continental European corporate governance, blockholders are likely to impact the pricing of buyouts in two ways. On the one hand, given the size of their stake, blockholders are likely to have pronounced monitoring incentives to alleviate the conventional manager-shareholder conflict. However, not all types of large shareholders, such as the government for instance, may engage in monitoring. Ultimately, if the blockholder curtails managerial malpractice in the pre-buyout company, premiums and abnormal returns conferred by a private equity acquisition should be lower as these targets offer less remaining potential for corresponding agency cost reductions. On the other hand, blockholders also have incentives to extract private benefits at the cost of the remaining shareholders. Clearly, such blockholders will only give up these extra rents in stake sales where private equity investors compensate them through adequately higher prices. Rent extraction by the largest blockholder can be curtailed by the presence of a second large shareholder. As a result, premiums and abnormal returns conferred by a private equity acquisition should be lower if there is a second large blockholder in the pre-buyout company who confines the discretion of the largest shareholder to consume private benefits.

Based on a self-collected sample, we find that private equity investors pay a final mean premium of 28.3% relative to the market price two months before the

announcement date. This value is 3.0 percentage points lower than for comparable US transactions and, thus, is consistent with the monitoring and restriction of private benefits rationales. Further, we find that shareholders gain around the announcement day abnormal returns of 13.0% in the [-1,1] event window. This value is 7.7 percentage points lower relative to US transactions and, thus, underlines the higher deal completion risk in continental Europe.

In terms of the underlying sources, the cross-sectional regression results lend strong support towards the crucial role of both the monitoring and private benefits arguments. With respect to monitoring, the stake of the largest outside blockholder is negatively related to premiums and abnormal returns. This result is in line with the view that blockholders with strong monitoring incentives leave less potential for the private equity investor to reduce agency costs in the post-buyout company thereby leading to lower premiums and abnormal returns. When taking into account the identity of the largest blockholder, the evidence suggests that corporations, banks and holdings are active monitors but not the government. Interestingly, (outside) families seem also not to be active monitors but this result has to be treated with care. As we know from chapter 3.4.2.1, this shareholder class is particularly prone to private benefit consumption, a factor which may counterbalance the monitoring effects and thereby lead not to lower premiums and abnormal returns as expected. We shed light on the validity of the private benefit argument by exploiting the (non-)existence of a second large blockholder in the target's shareholder structure. As expected, her/his presence is negatively related to the premiums and abnormal returns. This result is consistent with the view that the second large blockholder acts as a monitor of the dominant blockholder, curtails rent extraction and thereby limits the latter's ability to demand higher takeover prices.

In addition to the central monitoring and private benefits results, we find widespread evidence that firms with low valuation levels confer higher premiums and abnormal returns. This finding is consistent with the view that private equity investors are skilful in both identifying less visible and/or underperforming firms as well as increasing their

value under private ownership. Furthermore, there is also evidence that a thin, pre-buyout trading volume of the target stock amplifies the premiums.

Several avenues for extensions and future research arise from this chapter. First, given the distinctive role of the largest blockholder in explaining the wealth effects, it would be interesting to implement an empirical approach similar to Achleitner et al. (2011 forthcoming) which is helpful in opposing the monitoring and private benefit incentives more directly. Second, it would be interesting to compare the results to non-private equity sponsored transactions. Based on such an increased sample size, it would also be possible to analyse the impact of regulatory differences between the jurisdictions beyond country fixed effects. Third, it would be clearly compelling to investigate how the final premiums paid compare to the actual value generated at the portfolio company level during the private phase and to the returns realized by the private equity funds. Access to such private data would greatly help in understanding the private equity fund's value generation role.

5 Why Do Strategic Investors Pay so Much More Compared to Private Equity Investors? The Role of Operational Synergies

5.1 Introduction

Corporate takeovers are a prominent feature of the business landscape. At the end of the last takeover wave in 2007, the annual aggregated global transaction value amounted to a record-breaking $4.2 trillion.[219] A central development of the last wave was the revival of private equity, i.e. financial investors[220] alongside traditional strategic investors. Financial investors increased their market presence in terms of competing bids to 36% at the height of their activity in 2006 compared to 14% in 2001 (Dittmar et al. (2010)). Similarly, in terms of completed deals, financial investors accounted for 21% of the total deal volume at the wave's peak compared to 5% at the wave's bottom (ThomsonReuters/JPMorgan (2009)). These figures underline the increased economic significance of financial investors during the last wave and have led to heightened scrutiny by the media. An often raised concern has been that takeovers by financial investors result in "suboptimal" takeover prices. One prominent argument given is that financial investors offer target managers high-powered incentive contracts. In turn, they might agree to suboptimal takeover prices to the detriment of their shareholders since they want to assume these alluring incentive contracts.[221] Such objections to relatively low takeover prices have led to a new wave

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[219] Cf. ThomsonReuters/JPMorgan (2009), p. 8, values are inferred from graphs.

[220] The terms private equity investor and financial investor are used interchangeably in this chapter.

[221] For example, Ben Stein states in the New York Times: "[..] in a management buyout, management is seeking to pay the least it can get away with for the assets of the public holders, while the public holders want the most they can get. On its face, this is an irreconcilable conflict of interest… Why this kind of conflict is allowed is a mystery to me. Add to that the problem of a lack of full disclosure. In a management buyout, company managers generally prepare memos for the buyout investors, saying how much they expect to make on the deal. Specifically, they say how much of an internal rate of return they expect on their investment. This, in turn, involves a calculation of just how much more the assets they are buying are worth than what they are paying to us stockholders for those assets. But those memos are not disclosed to the stockholders or to the market generally… management and its worthy friends say that all is solved because it gets a "fairness letter" from an investment bank saying that the price it is offering for the stock is fair. But this means zilch. Investment banks never cross management any more than appraisers cross lenders [..]", http://www.nytimes.com/2006/09/03/business/yourmoney/03every.html?pagewanted=2&_r=2, last accessed on March 29 2011.

of litigation towards financial investors.[222] Yet, there is little in-depth research on these bidders and their transactions. Only recently, Bargeron et al. (2008) address this paucity and examine takeover premiums paid by different investor classes. They find that public bidders pay significantly higher takeover premiums than private investors. This gap amounts to a staggering 63% when public bidders are compared to the private bidder subgroup of financial investors. However, they cannot pin-down the driver(s) behind this massive premium differential and stress that future research shall help towards addressing this important question.

This is the point of origin for this chapter. We argue that *expected operational synergies* on behalf of strategic takeovers shall be an important rationale. Operational synergies represent the excess value that is generated by combining two operating firms; i.e. value arising, for example, from economies of scale, increased pricing power and higher growth potential which would not have been available to these firms operating independently (Damodaran (2005)).[223] Operational synergies are an intuitive and very important rationale, particularly in light of the aforementioned increased criticism and litigation of financial investors. Essentially, quantifying operational synergies and relating them to takeover premiums will shed light on the issue of whether there is indeed a premium differential. Put differently, discounting for operational synergies in strategic deals will set an appropriate benchmark for a well-founded economic comparison between the two bidder types.

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[222] For details, see Allerhand/Aronstam (2007).

[223] Hence, we refrain from including financial synergies in the form of incremental debt tax shields since these are available to both strategic and financial investors. In particular large strategic investors (such as publicly listed corporations which we focus on in this study due to data availability reasons) have access to credit markets similar to that of financial investors. For instance, General Electric as a frequent borrower shall be able to raise leverage on similar terms as a financial investor, i.e. it is unlikely that any one of them benefits from a reputational or relationship advantage due to more frequent interactions with the credit market. In any case, even if the aforementioned commodity view of leverage does not hold and financial investors enjoy a reputational edge over strategic investors, then the former would pay higher takeover premiums than the latter (in a competitive takeover market). Consequently, financial synergies cannot serve as an explanation for the *contrary* empirical observation (Bargeron et al. (2008)) that strategic investors pay far higher premiums than financial investors (for further details see also Jenkinson/Stucke (2010) who provide evidence that the tax benefits in LBOs accrue to the company vendors).

The vast literature on takeover pricing has largely neglected synergies in explaining takeover premiums, most likely because it is not straightforward to estimate them. One strand of research has assessed synergies by drawing on the combined abnormal returns of the target and bidder around the merger announcement date (Bradley et al. (1988), Andrade et al. (2001), amongst others). This methodology is - at least for this study's purpose - problematic since it results in an aggregate proxy that contains both ancillary information about the standalone values of the merging companies and new information about expected synergies (Hietala et al. (2003)). Generally, it is difficult to disentangle the two components and even when it is possible to confine the value of expected synergies, it is still an aggregate proxy in the sense that it contains both operating and financial synergies. For the purpose of this study, however, we aim to grasp only the value of operating synergies. Alternative studies have tried to infer synergies from realized long-term operating and stock performance following the merger consummation (Ravenscraft/Scherer (1989), Agrawal et al. (1992), Franks/Mayer (2001) and Healy et al. (1992), amongst others) but these measures face considerable challenges: first, they crucially depend on the calculation approach of abnormal returns and the respective time horizon employed. Further, the relatively long time horizons per se lead to noisy estimates since new, merger-unrelated information evolves and companies go out of business causing survivorship bias. Finally, it is questionable whether the typically employed industry benchmarks are appropriate as pointed out by Harford (2005): a merged firm which performs worse than the industry may still do better than the sum of the stand-alone entities would have done.

We differ from these approaches by exploiting the change in analyst expectations around the merger consummation date. Analysts are highly informed experts and, compared to management, relatively neutral. Arguably, almost all institutional investors incorporate the expertise of analysts in their investment decisions. However, this valuable source of information has been largely neglected in the vast takeover literature. Notable exemptions are Harford (2005), Devos et al. (2009) and Bernile/Bauguess (2010) but these studies do not focus on takeover pricing and, in

particular, not on explaining the premium differential between strategic and financial investors. We capitalize on the expertise of analysts by setting cash-flow proxy forecasts for the combined firm after the takeover consummation date in relation to the sum of the stand-alone forecasts for the acquirer and target before the consummation date. The difference shall result in an estimate of expected operational synergies. It is important to stress that our focus lies on analyst revisions around the merger consummation date and not the announcement. *Thereby we shall be able to pick up synergies per se, i.e. gains resulting from the specific fit between the target and bidder but not stand-alone restructuring potential*. The reasoning is as follows: at the announcement date, it is unclear whether a takeover will indeed take place and, if yes, who will be the ultimate winner. Hence, potential analyst revisions around the announcement date would *not* largely capture specific synergies but rather general restructuring potential which would be realizable by the target as a standalone entity (either by incumbent managers due to the pressure from the market for corporate control or by more skilled financial investors).[224] The closer one approaches the completion date, the more the general restructuring potential should already be impounded in the analyst forecasts and any remaining revision should be mainly attributable to synergistic gains. Consequently, considering analyst revisions around the completion date gives a conservative synergy proxy which shall exclude restructuring potential realizable by financial investors. This focus around the completion date also has the additional benefit that the considered time period between the analyst revisions is relatively short. Hence, our synergy measure should not be systematically distorted by either corporate news unrelated to the merger or by survivorship biases.

We apply this approach to two analyst forecast datasets which differ with respect to the estimates' availability and preciseness. *First*, we calculate an earnings appreciation measure based on Institutional Brokers' Estimate System (IBES) data. This measure is

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[224] Supporting this argument, Eckbo (2009) stresses: "The attenuating effect of the residual uncertainty about bid success at the initial offer announcement is important: it tends to produce offer premium estimates in the vicinity of 25-30% in Figure 1 when, as shown in the last two columns of Table 3, the true offer premium is about 45-50%" (Eckbo (2009), p 154).

available for the majority of takeovers and thus allows testing of a large sample. However, it can only serve as a first, rough indicator of the value of *operational* synergies since an earnings based proxy (i) also includes incremental tax shield gains (even if their size is generally small due to the limited capital structure changes in strategic deals) and (ii) may be distorted by transaction induced costs (such as goodwill depreciations) if the analysts consider them in their post-takeover forecasts. *Second*, we calculate a firm value appreciation measure based on Value Line (VL) cash flow forecast data. This measure is constrained to large takeovers but leads to highly precise estimates of expected *operational* synergies.[225]

As a result of the different degrees of precision with which the IBES and VL proxies grasp *operational synergies*, the following discussion will sometimes refer to them generically as *synergies*. However, it is important to stress that the aim of the chapter is to understand the role of *operational* synergies in explaining the premium differential. Consequently, the reader shall focus on the results for the precise operational synergy measure based on VL data.

In order to evaluate the role of expected synergies on takeover pricing and, in particular, on the premium differential between strategic and financial investors, we draw on sizeable samples of 760 and 339 US takeovers depending on whether the analysis is based on the IBES or VL synergy measure.

With respect to the economic magnitude of synergies, our first, indicative results for the broad IBES earnings appreciation measure suggest that the median strategic deal is expected to lead to a yearly earnings depreciation of 3.6%. This figure seems somewhat questionable in the light of the evidence that most transactions do create value and that sizeable target takeover premiums are paid.[226] It appears that analysts indeed factor some transaction related costs (such as goodwill depreciations) into their

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[225] Cf. section 5.2.2 for details.

[226] Cf. for instance Sudarsanam (2010).

post-takeover earnings forecasts.[227] This conjecture is supported when turning to the results for the precise VL firm value appreciation measure. We find that the median (mean) deal is expected to lead to operational synergies of $716 ($1,901) million which equals an economically sensible 6.2% (9.7%) in terms of the combined firm's enterprise value. When focusing on the main question of how the value of expected operational synergies compares to the value of the premium paid, we find that the former is 3.1 (5.1) larger than the latter.[228] Consequently, there is strong evidence towards the view that operational synergies on behalf of strategic deals may indeed explain the premium differential between strategic and financial takeovers.

Whilst the size of operational synergy gains relative to the takeover premium is interesting in its own right, robust inference about the impact of operational synergies on takeover pricing and, in particular, on the premium differential can only be drawn from multivariate analyses. Therefore, we run cross-sectional regressions on the takeover premium and include operational synergy quartile indicators for the strategic investor subsample (i.e. the financial investor subsample represents the control group) as well as a whole set of control variables in the form of deal-, target-, industry- and year-fixed-effects.

We find strong evidence in favour of the synergy rationale for both the IBES and VL measure. Although the IBES measure represents only an indicative synergy proxy as outlined above, it does explain substantial parts of the premium differential. When the premium is measured in terms of traditional equity based measures,[229] the pricing differential decreases steadily from the quartile of strategic deals with the highest synergies to the quartile of strategic deals with the lowest synergies. When the

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[227] Assuming that there are no systematic differences in the treatment of these costs across analysts, our estimated IBES synergy proxies may still include valuable *ordinal* information for examining the relation between synergies and takeover premiums in the course of regression models.

[228] While these estimates may initially look large, they are put into perspective when taking into account that expected operational synergies (the numerator) accrue to both the bidder and the target and that the takeover premium (the denominator) accrues solely to the target. Indeed, when considering that the combined size of the bidder and target is approximately 10 times the size of the target, the operational synergy to premium estimates of 3.1 (5.1) seem reasonable.

[229] Cf. section 5.2.3 for details on the premium calculation methodologies.

premium is measured in terms of enterprise based measures,[230] the results are less distinct: the pricing differential decreases from the fourth to the second synergy quartile but not for the first one. Across all pricing measures, however, strategic investors of the first synergy quartile still seem to pay higher premiums than financial investors. There are two reasons why this may be the case: first, even after controlling for synergies, there may still be a premium differential due to other potential reasons not controlled for in the analysis. Second, it may be that the IBES proxy may not grasp operational synergies sharply enough as already indicated. We address the latter possibility by turning to the precise VL operational synergy measure. The respective results lend strong support towards the decisive role of operational synergies. For all pricing measures, the premium differential

- is largest for the quartile of strategic deals with the highest expected operational synergies,
- decreases steadily across the remaining quartiles,
- is not statistically different from zero for the quartile of strategic deals with the lowest expected operational synergies.

For instance, in terms of the enterprise premium measure *PremiumCash/EV*,[231] the following pattern evolves: the quartile of strategic deals with the highest expected operational synergies pays on average 33.7% higher premiums than financial investors (t-stat of 3.07). This differential gets steadily smaller until the quartile of strategic deals with the lowest expected operational synergies when a statistically insignificant coefficient of -1.0% (t-stat of 0.15) indicates that the respective strategic investors pay similar premiums than their financial counterparts. On average, these strategic deals of the first quartile are expected to generate operational synergies of less than 0.9%

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[230] Cf. section 5.2.3 for details on the premium calculation methodologies.

[231] *PremiumCash* is the difference between the final bid price and the price two months prior to the announcement date times the target's outstanding common shares. It is scaled with the target's enterprise value (EV) which is defined as market capitalization 43 days prior to the announcement date (AD) plus the book value of net debt from the last fiscal year date prior to the AD.

$(0.2\%)^{232}$ in terms of the target's EV (combined firm's EV). Hence, the regression estimates also appear highly sensible from an economic point of view.

Consequently, there is very strong evidence in favour of the operational synergy rationale being a, if not *the* central factor in explaining the sizeable premium differential between strategic and financial investors. There seems to be little left in favour of alternative explanations - such as the collusion argument between financial investors and target managers - but clearly, more research is required with respect to this question.

These findings contribute to the nascent work on how the takeover process and pricing differs with respect to the identity of the bidder. Recently there have been three studies which directly contrast takeovers by strategic and financial bidders. Bargeron et al. (2008) examine takeover premiums between public and private bidders. They find that the former pay significantly higher premiums than the latter. They argue that agency costs on behalf of public acquirers may play an important role since the premium differential declines with increasing managerial ownership.[233] However, they also find that the premium differential does not vary with institutional ownership, a result which casts doubt on the agency argument since institutional investors are commonly assumed to act as monitors who curtail managerial misbehaviour. In line with this reasoning, the premium differential also poses the questions why every target company would not wait for public bidders to enter the auction process and why the latter do not win all contests (Bargeron et al. (2008))? One argument which could explain these questions is the lack of a specific fit between certain targets and potential public bidders, i.e. the synergy rationale. Related work by Gorbenko/Malenko (2010) analyse the bidding behaviour of financial and strategic investors in takeover auctions. By imposing a structural model on the auction process, they estimate intrinsic valuations of both bidder types. They find that financial investors value potential targets in a relatively homogenous way whereas strategic investors' valuations are far more

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[232] Cf. Table 5-5 Panel A.

[233] For instance, acquisitions can lead to higher compensation packages for managers due to the increase in firm size even if the acquisition is value decreasing for their shareholders (Bebchuk/Grinstein (2005), Harford/Li (2007)).

idiosyncratic. Hence, Gorbenko/Malenko's (2010) results are also in line with the synergy argument. Similarly, Dittmar et al. (2010) examine bidding competing patterns and find that strategic acquirers who compete against financial bidders earn higher returns than strategic acquirers who compete against other corporate bidders. Again, this result is consistent with the synergy rationale. However none of the aforementioned studies quantifies the value of operational synergies and examines whether they can explain the premium differential.

The remainder of this chapter is structured as follows. Section 5.2 describes the sample and data collection process as well as the methodology for constructing the expected operational synergy proxies. Section 5.3 contains the empirical results. Section 5.4 concludes.

5.2 Sample, methodology and variable definitions

5.2.1 Sample data

The takeover sample is collected from the Security Data Corporation (SDC) database. We select all completed takeovers between U.S. public targets and bidders which were announced between 1987 and 2009, the period for which forecast information is available to construct synergy estimates. In line with the literature, the following set of filters is applied to the dataset:

1. the deal is a majority acquisition which results in 100% ownership for the bidder;

2. the deal is purely cash-financed;

3. the deal is not marked in SDC as a spinoff, recapitalization, self-tender, exchange offer, repurchase, minority stake purchase, acquisition of remaining interest, or privatization;

4. the deal value is disclosed;

5. the bidder is either a public operating entity (strategic investor), private operating entity (strategic investor) or private equity fund (financial investor), i.e. acquisitions by individuals are excluded;[234]

6. the target is an operating entity, i.e. acquisitions for non-operating targets such as special purpose acquisition companies (SPACs), real estate investment trusts (REITs) or closed-end funds are excluded;

7. target stock price and accounting data is available on the Center for Research in Security Prices (CRSP) and Compustat tapes.

These filters result in a base sample of 1590 transactions which comprehends 264 (16.6%) by private equity funds, i.e. financial investors, 424 (26.7%) by private operating entities which resemble strategic investors and 902 (56.7%) by public operating entities which resemble equally strategic investors. Since the focus of this chapter is on synergy estimates, we collect analyst forecast data for the public operating bidder sample from both the Institutional Brokers' Estimate System (IBES) and Value Lines' Estimate and Projections File (VL). The required IBES (VL) data is available for 594 (82) transactions which represents 65.9% (9.1%) of the public operating subsample.

Table 5-1 presents basic sample statistics by bidder types including the public operating bidder subsamples with available IBES and VL data for the construction of the synergy estimates. Absolute values are reported in 2009 consumer price index (CPI) adjusted dollars. Deal value represents the total consideration paid by the acquirer excluding fees and expenses.

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[234] We use the SDC deal synopsis, Capital IQ and Factiva to classify private bidders either as a private equity bidder, a public operating bidder or as an individual(s). The central classification criterion for a private equity bidder is whether a fund on behalf of limited partners is in place to finance the equity portion of the deal. In the course of this detailed scrutiny of the bidder's identity, several SDC misclassifications were encountered. For example, we found several deals where the bidder is classified as public although it is in fact only a non-traded subsidiary of a public company. These mistakes were corrected.

Table 5-1: Size of target companies split according to bidder groups

This table shows transaction value and earnings before interest, tax, depreciation and amortization (EBITDA) statistics for the targets at the last fiscal year date before the takeover announcement. The transaction value is defined as the total consideration paid by the acquirer excluding fees and expenses. Data is reported by the type of the winning bidder. The table reports statistics for private equity bidders (financial investors), private operating bidders (strategic investors) and public operating bidders (strategic investors). For the latter bidders, we report the statistics for the full sample and subsamples with available IBES (ValueLine) data for the construction of synergy proxies.

Bidder	Transaction value (in m€)			EBITDA (in m€)		
	n	Mean	Median	n	Mean	Median
Private equity bidder (financial investor)	264	859	157	245	75	16
Private operating bidder (strategic investor)	424	447	98	367	23	6
Public operating bidder (strategic investor)	902	535	149	796	34	7
Public operating bidder with IBES synergy proxy	*594*	*751*	*246*	*540*	*46*	*11*
Public operating bidder with Value Line synergy proxy	*82*	*2,123*	*998*	*82*	*136*	*64*
All bidders	**1590**	**565**	**132**	**1408**	**38**	**8**

The median (mean) transaction across all bidders is priced at $132 ($565) million which highlights that the sample includes relatively large deals. Deals consummated by financial investors lie with a median (mean) transaction value of $157 ($859) slightly above average values. Deals executed by strategic investors are broadly in line with average values: *private* operating bidders buy slightly smaller targets with a median (mean) transaction value of $98 ($447) and *public* operating bidders acquire targets with a median (mean) transaction value of $149 ($535) which is almost identical to the sample average. Not surprisingly, the public operating bidder subsamples with available analyst forecast information (for the construction of the synergy proxy) are centred towards larger deals: the median (mean) transaction in the IBES sample is priced at $246 ($751) and the median (mean) transaction in the Value Line sample is valued at $998 ($2,123). Statistics based on the target's last twelve month EBITDA lead to similar conclusions. Table B-1 in the Appendix B represents more detailed statistics on target and deal characteristics. Since this analysis is similar to Bargeron et al. (2008) and leads not to new insights beyond their paper, we refrain from discussing it.

5.2.2 Methodology for grasping synergies of strategic takeovers

Measuring synergies is not straightforward. One strand of research has assessed synergies by drawing on the combined abnormal returns of the target and bidder around the merger announcement date (Bradley et al. (1988) and Andrade et al. (2001)). This methodology is - at least for this study's purpose - problematic due to the following two reasons: first, as stressed by Hietala et al. (2003), returns around the announcement date are driven by both ancillary information about the standalone values of the merging companies and new information about synergies. Generally, it is difficult to disentangle the two components. Second, even when it is possible to confine the value of synergies, it is still an aggregate proxy in the sense that it contains both operating and financial synergies. For the purpose of this study, however, we aim to grasp only the value of operating synergies since financial synergies can be consummated by both strategic and financial investors. Alternatively, another large body of research has tried to infer synergies from realized long-term operating and

stock performance following the merger consummation (Ravenscraft/Scherer (1989), Agrawal et al. (1992), Franks/Mayer (2001) and Healy et al. (1992), amongst others). These measures face considerable challenges. First, they crucially depend on the calculation approach of abnormal returns and the respective time horizon employed. Further, the relatively long-time horizons per se lead to noisy estimates since new, merger-unrelated information evolves and companies go out of business causing survivorship bias. Finally, it is questionable whether the typically employed industry benchmarks are appropriate as pointed out by Harford (2005): a merged firm which performs worse than the industry may still do better than the sum of the stand-alone entities would have.

We differ from these approaches by exploiting the change in analyst expectations around the merger consummation date. Analysts are highly informed experts and, compared to management, relatively neutral. We capitalize on their expertise by setting the cash-flow (earnings) forecast for the combined firm after the takeover in relation to the sum of the stand-alone forecasts for the acquirer and target before the takeover. The delta represents a proxy for expected *operating* synergies (expected synergies).

Synergy is a function of the specific fit between the target and bidder. At the announcement date, it is unclear whether a takeover will indeed take place and, if yes, who will be the ultimate winner. Hence, potential analyst revisions around the announcement date should *not* largely capture specific synergies but rather general restructuring potential which shall be realizable by the target as a standalone entity (either by incumbent management due to pressure from the market for corporate control or by more skilled financial investors).[235] The closer one approaches the completion date (CD), the more the general restructuring potential should already be impounded in the analyst forecasts and any remaining revision should mainly be attributable to synergistic gains. Consequently, considering analyst revisions around

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[235] Supporting this argument, Eckbo (2009) stresses: "The attenuating effect of the residual uncertainty about bid success at the initial offer announcement is important: it tends to produce offer premium estimates in the vicinity of 25-30% in Figure 1 when, as shown in the last two columns of Table 3, the true offer premium is about 45-50%" (Eckbo (2009), p 154).

the CD date gives a conservative synergy proxy which largely does not include restructuring potential realizable by incumbent management or (competing) financial investors. This focus around the CD also has the additional benefit that the considered time period between the analyst revision is relatively short. Hence, our synergy measure should not be systematically distorted by either corporate news which are not related to the merger or survivorship bias.

Two synergy estimates are constructed which differ with respect to availability and precision. First, we draw on earnings per share estimates from IBES which are available for the majority of the sample firms (65.9%). The resulting estimates will allow us to get a first sense of synergies in terms of the expected earnings appreciation. Second, we calculate precise cash-flow estimates based on Value Line data which is limited to the larger takeovers in the sample (9.1%). The resulting estimates will grasp the economic magnitude of *operating* synergies precisely in terms of the expected firm value appreciation.

In the empirical takeover literature, forecasts of informed market participants have been largely neglected so far to estimate synergies. Two notable exemptions are the recent contributions of Bernile/Bauguess (2010) and Devos et al. (2009). Bernile/Bauguess (2010) focus on voluntarily disclosed insider projections. This approach naturally brings along selection biases with respect to both disclosure and preciseness of forecasts: managers are only likely to report synergy related estimates if they are likely to be economically sizeable, and even if they do, the disclosure of precise capitalization dates will still vary heavily with its ultimate magnitude. Devos et al. (2009) employ Value Line projections as we also do in one of our analyses. However, their focus lies on differentiating between three sources of potential synergy gains: tax benefits, increases in market power and efficiency improvements.

In summary, none of the two aforementioned studies focuses on the question to what extent expected synergies may be appropriated by the target owners in the form of the takeover premium and hence, neither tackles the premium differential between financial and strategic takeovers. This is the question which we address in this study.

5.2.2.1 Synergy measure based on IBES data

We draw consensus earnings forecasts from the Summary History file of IBES. A full information set consisting of the earnings estimates for the combined entity, the stand-alone target and the stand-alone bidder is obtained for 594 mergers. As previously discussed, we opt for a short event window around the completion date in order to (i) limit the influence of corporate news unrelated to the merger, (ii) reduce the risk for survivorship bias and (iii) to obtain a conservative synergy proxy largely free of general restructuring potential. In particular, our IBES synergy estimate is the current year (FY1) earnings estimate for the combined entity taken immediately after the completion date minus the sum of the FY1 earnings estimate for the standalone bidder and target taken a quarter before the completion date:

$$Syn\_IBES = \frac{(EPS_{Post}^{C} * Shares_{Post}^{C} - EPS_{Pre}^{B} * Shares_{Pre}^{B} - EPS_{Pre}^{T} * Shares_{Pre}^{T})}{(EPS_{Pre}^{B} * Shares_{Pre}^{B} + EPS_{Pre}^{T} * Shares_{Pre}^{T})}, \qquad (2)$$

where EPS_{Post}^{C} represents the first IBES consensus earnings estimate for the combined entity after the completion date, EPS_{Pre}^{B} (EPS_{Pre}^{T}) the IBES consensus earnings estimate for the stand-alone bidder (target) a quarter before the completion date and $Shares_{Post}^{C}$, $Shares_{Pre}^{B}$, $Shares_{Pre}^{T}$ the respective number of outstanding shares taken from CRSP at exactly the same date as the earnings estimates.

It has to be noted that the IBES measure can only serve as a rough, indicatory proxy for operational synergies. As an earnings based measure, the IBES proxy also automatically comprehends financial synergies in the form of incremental tax shield gains, even if their size is likely to be small since the capital structure typically doesn't change much in strategic deals. Additionally, the IBES proxy may be further distorted by specific transaction related expenses if the analysts consider them in their post-takeover forecasts. Generally, analysts are supposed to make their earnings forecasts on a continuing operations basis. Hence, discontinued operations, extraordinary charges and the like shall be discarded in the calculation of earnings forecasts. The question which arises now is whether analysts interpret particular transaction related costs as discontinued and/or extraordinary? For instance, how do certain analysts treat

goodwill depreciations resulting from the merger[236] which generally accrue over multiple years?

Nonetheless, assuming that there are no large systematic differences in the treatment of these costs across analysts, the estimated IBES synergy proxies may still include valuable *ordinal* information for examining the relationship between synergies and takeover premiums.

5.2.2.2 Synergy measure based on Value Line data

We draw precise forecasts of income and balance sheet items from VL's Estimates and Projections file. All non-financial targets and bidders of the public takeover sample are matched to VL. We obtain a full information set consisting of the precise forecasts for the stand-alone target, the stand-alone bidder and the combined entity for 82 mergers.[237] While this sample looks initially small, it is important to note that the respective *operational* synergy estimates shall be highly accurate and thus will allow us to draw sharp inferences.

As previously discussed, we opt for a short event window around the completion date in order to (i) limit the influence of corporate news unrelated to the merger, (ii) reduce the risk for survivorship bias and (iii) to obtain a conservative synergy proxy largely free of general restructuring potential.

Based on the granular data, we are able to construct a precise *operational synergy* proxy which will only consider expected firm value gains arising from the *specific fit between the acquirer and the target*, i.e. gains from economies of scale, increasing pricing power and/or higher growth potential, for instance. Expected gains from financial restructuring, i.e. additional tax shields, will be excluded since these are also

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[236] These goodwill depreciations also usually include transaction-related costs (e.g. fees for investment bankers and consultants) and restructuring costs (e.g. termination payments to employees) which generally are capitalized as part of the overall purchase price for an acquisition.

[237] Financial corporations are excluded since their valuation models differ markedly from the ones of non-financial corporations (Bayazitova/Kahl/Valkanov (2009) and Devos/Kadapakkam/Krishnamurthy (2009)).

available to financial bidders.[238] In particular, the VL synergy proxy will be calculated as the difference between the expected operational gains for the combined entity and the sum of the expected operational gains for the stand-alone bidder and target. In order to arrive at these expected operating gains, we will employ an adjusted compressed present value (ADV) methodology as used by Kaplan/Ruback (1995), Ruback (2002) and Devos et al. (2009). In the following, the detailed estimation process of the VL synergy proxy is outlined in four steps.

First, a 5-yearly series of expected cash flows is constructed for each bidder, target and combined entity. Therefore, we collect VL forecasts for sales (S), operating margin (OM), working capital (WC), depreciation (DEP), capital expenditure (CAPEX), long-term debt (DEBT) and the income tax rate (T). These VL data points are available for the next fiscal year (short-term forecast FY1) and for the fiscal year period 3 to 5 which we consider to be year 4 (medium-term forecast FY4). In line with Devos et al. (2009), these short- and medium-term forecasts are used to replicate the forecasts for year 2, 3 and 5 by linearly interpolating operating profits (S x OM), DEP, CAPEX, DEBT and working capital to sales (WC/S). Based on this information set, we calculate for each target, bidder and combined entity expected yearly cash flows (CF) over the next five years according to:

$$CF = \left[S * OM * \left(1 - T_{avg} \right) \right] - \left[INVEST \right], \tag{3}$$

where $S * OM * \left(1 - T_{avg} \right)$ represents after-tax profits and $INVEST$ is investments in fixed assets and working capital net of depreciation. It is important to highlight that

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[238] In particular large strategic investors (such as publicly listed corporations which we focus on in this study due to data availability reasons) have access to credit markets similar to that of financial investors. For instance, General Electric as a frequent borrower shall be able to raise leverage on similar terms as a financial investor, i.e. it is unlikely that any one of them benefits from a reputational or relationship advantage due to more frequent interactions with the credit market. In any case, even if the aforementioned commodity view of leverage does not hold and financial investors enjoy a reputational edge over strategic investors, then the former would pay higher takeover premiums than the latter (in a competitive takeover market). Consequently, financial synergies cannot serve as an explanation for the *contrary* empirical observation (Bargeron et al. (2008)) that strategic investors pay far higher premiums than financial investors(for further details see also Jenkinson and Stucke (2010) who provide evidence that the tax benefits in LBOs accrue to the company vendors).

these cash flows exclude tax benefits of debt.[239] Thereby the final synergy measure will only grasp firm value changes arising from operating synergies but not from financial synergies which are also available to financial investors.

Second, the cost of capital (K) is calculated for each target, bidder and combined entity. We estimate the capital asset pricing model (CAPM) with a market risk premium of 7%, a risk free rate equal to the yield on the 10-year Treasury bond and the asset beta. For the stand-alone target and bidder, the asset beta is based on the VL equity beta prior to the announcement date (AD) and a debt beta assumed to be zero.[240] For the combined entity, the asset beta is the firm-value weighted average of the target and bidder's asset betas.

Third, the present value (PV) of expected cash flows is computed for each target, bidder and combined entity. With regards to the terminal value (TV), we assume that the cash flows after year 5 grow forever at the rate of the expected inflation (*Inf*, obtained from the Philadelphia Federal Reserve Bank) which translates into

$$PV(CF) = \sum_{t=1}^{5} [CF_t/(1+K)^t] \qquad (4)$$
$$+ [CF_5 * (1+Inf)]/[(K-Inf)*(1+K)^5]$$

Fourth and finally, we take the resulting present values of expected cash flows for the combined entity (C), the stand-alone target (ST) and the stand-alone bidder (SB) and net out the operational synergy estimate in the following way:

$$Syn_{VL} = PV(CF)_{postermerger,C} - PV(CF)_{premerger,SB} - PV(CF)_{premerger,ST}. \qquad (5)$$

Again, it is important to highlight that this measure solely grasps expected firm value changes arising from operational synergies. Expected gains from financial synergies,

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[239] I.e. we restrain from including the interest tax shield.

[240] For the equity value, the market capitalization 63 days prior to the announcement date is used and for the debt value, the last twelve month's long-term debt as reported by VL is employed.

i.e. increased tax shields, are excluded since these are also available to financial investors.

5.2.3 Methodology of calculating the takeover premium

The takeover premium is measured in two ways. First and in line with the traditional literature, we measure the *equity* premium – how much do investors pay on top of the target's equity value. In particular, it is the percentage deviation between the final bid price and a pre-announcement basis price. For the latter, we select the price two months prior to the earliest announcement date to allow for potential bid revisions and market anticipation (Schwert (1996)). Consequently, there won't be systematic premium differences between financial and strategic acquisitions due to systematically different bidding processes. Further, market movements are adjusted for with the S&P500 index (Kaplan (1989a)). For robustness purposes, we also report buy-and-hold abnormal returns (BHARs) from two months prior to the earliest announcement up to the merger consummation date (which is bounded at day 163). As a benchmark, 5x5-Fama-French size and book-to-market portfolios are employed.

Second, we follow a recent approach by Jenkinson/Stucke (2010) and measure an *enterprise value* premium. Such a measure resembles more closely the view of financial investors since LBO execution requires not only the acquisition of the target's shares but also the refinancing of pre-LBO debt. Hence, the cost and consequently the premium basis for investment decisions is the target's enterprise value. The premium on a company's enterprise value can differ considerably from the traditional premium on equity when the pre-LBO company is financed with a significant portion of debt. In particular, we calculate the cash paid on top of the target's market value[241] and scale it with EBITDA, a proxy for cash flow which is available to all capital providers of the firm. This metric presents an intuitive estimate

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[241] Essentially, the difference between the final bid price and the price two months prior to the earliest announcement date is multiplied by the target's outstanding common shares.

of how many cash-flow years it would take to recoup the cash paid in the takeover.[242] Alternatively, we also calculate a second measure which scales the cash premium directly with the target's enterprise value.

5.2.4 Variable definitions

Table 5-2 summarizes the definition of all variables employed in this chapter. The variables are winsorized at the 2% level at the lower and upper tail in order to ensure that outliers do not distort results.

Table 5-2: Definition of variables

This table defines all variables used in this chapter. Accounting data are taken from CompuStat, market data from CRSP, deal information from SDC Platinum and analyst forecast data from Value Line and IBES.

Variable	Description
Aret12	Target's market-adjusted buy-and-hold return calculated over 12 months prior to day -63, the start of the run-up period.
B_Lock	SDC indicator variable set to one if the deal comprehends bidder lockup provisions.
B_TermFee	SDC indicator variable set to one if the deal includes bidder termination fees.
Bankrupt	SDC indicator variable set to one if the deal includes a bankrupt target.
BHAR	Buy-and-hold abnormal return (BHARs) from 43 days prior to the earliest announcement date up to the merger consummation date employing 5x5-Fama-French size and book-to-market portfolios as benchmarks.
Challenged	SDC indicator variable if the deal involved a competing offer.
Debt/Assets	Target's book value of debt divided by the sum of the book value of debt and the market value of equity (Moeller et al. (2004)).
Defense	SDC indicator variable set to one if the deal includes a defensive tactic.
EV(Bidder) / EV(Target)	Enterprise value of bidder measured 43 days prior to the announcement date divided by the respective enterprise value of target.
EV(Target) / EV(Target+Bidder)	Enterprise value of target measured 43 days prior to the announcement date divided by the sum of the respective enterprise values of the target and bidder.

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[242] As a proxy for unobservable future EBITDA, realized EBITDA from the last fiscal year before the transaction announcement is used. Since this proxy is likely to be systematically lower than future EBITDA, the Premium/EBITDA estimates will be biased upwards.

Table 5-2: Definition of variables (continued)

Variable	Description
EV(Target+Bidder) / EV(Target)	The sum of the enterprise values of the target and bidder measured 43 days prior to the announcement date divided by the respective enterprise value of the target.
Hostile	SDC indicator variable set to one if the deal includes a hostile target.
MBO	SDC indicator variable set to one if the deal is classified as a MBO.
MCap	Natural log of the CPI-adjusted (2009 dollars) target stock price times the number of shares outstanding 63 days prior to the announcement date.
Premium	The percentage deviation of the final bid price from the basis price 43 days prior to the announcement date adjusted with the S&P500 over the same time period (Kaplan (1989a)).
PremiumCash	Difference between the final bid price and the price two months prior to the announcement date times the target's outstanding common shares.
PremiumCash/EBITDA	The PremiumCash is the difference between the final bid price and the price two months prior to the announcement date times the target's outstanding common shares. It is scaled with the targets EBITDA from the last fiscal year date prior to the AD.
PremiumCash/EV	The PremiumCash is the difference between the final bid price and the price two months prior to the announcement date times the target's outstanding common shares. It is scaled with the target's enterprise value (market capitalization 43 days prior to the AD date plus the book value of net debt from the last fiscal year date prior to the AD).
Strategic bidder	Indicator variable set to one if the bidder is a strategic investor.
SynIBES	Synergy measure based on IBES data as defined in section 5.2.2.2. Measures synergies as yearly earnings appreciation percentage.
SynIBES_1Q (lowest)	Indicator variable set to one if SynIBES is in the first, lowest quartile.
SynIBES_2Q	Indicator variable set to one if SynIBES is in the second quartile.
SynIBES_3Q	Indicator variable set to one if SynIBES is in the third quartile.
SynIBES_4Q (highest)	Indicator variable set to one if SynIBES is in the fourth, highest quartile.
SynIBES_negative	Indicator variable set to one if SynIBES is equal to or less than zero.
SynIBES_positive	Indicator variable set to one if SynIBES is larger than zero.
SynVL (above median)	Indicator variable set to one if SynVL_Cash/EV(Combined) is larger than the median value.
SynVL (below median)	Indicator variable set to one if SynVL_Cash/EV(Combined) is equal or smaller than the median value.

Table 5-2: Definition of variables (continued)

Variable	Description
SynVL_1Q (lowest)	Indicator variable set to one if SynVL_Cash/EV(Combined) is in the first, lowest quartile.
SynVL_2Q	Indicator variable set to one if SynVL_Cash/EV(Combined) is in the second quartile.
SynVL_3Q	Indicator variable set to one if SynVL_Cash/EV(Combined) is in the third quartile.
SynVL_4Q (highest)	Indicator variable set to one if SynVL_Cash/EV(Combined) is in the fourth, highest quartile.
SynVL_Cash	Synergy measure based on Value Line data as defined in section 5.2.2.1. Measures synergies in absolute dollar value.
SynVL_Cash / EV (Target)	SynVL_Cash (absolute dollar value of operational synergies based on VL data) scaled with the enterprise values of the target company at 43 days prior to the announcement date.
SynVL_Cash / PremiumCash	SynVL_Cash divided by PremiumCash.
SynVL_Cash/EV(Combined)	SynVL_Cash (absolute dollar value of operational synergies based on VL data) scaled with the combined enterprise values of the bidder and target company at 43 days prior to the announcement date.
T_Lock	SDC indicator variable set to one if the deal comprehends target lockup provisions.
T_TermFee	SDC indicator variable set to one if the deal includes target termination fees.
Tender	SDC indicator variable set to one if the deal is a tender offer.
TobinsQ	Target's firm market value assets divided by the book value of assets.
Toehold	SDC indicator variable set to one if the deal involves a bidder that holds 0.5% or more of the target stock prior to the announcement.

5.3   Results

5.3.1   Sample characteristics

Table 5-3 presents takeover premiums paid by the winning bidder. We report results both for traditional equity premiums and the alternative enterprise premiums.

Panel A highlights that financial investors pay significantly less for takeovers than strategic investors Bargeron et al. (2008). This result holds not only for the traditional

equity but also for the enterprise premium measures. For all four takeover measures, the premium differential between the private equity and public operating bidder (private operating bidder) sample are economically and statistically sizeable: for the equity premium measures, the difference in the means ranges from 44% to 58% and for the enterprise premium measures, the respective difference in the means goes so far as to range from 41% to 125%. Further, there is strong evidence that the two groups of strategic investors – public and private operating bidders – pay similar premiums. For three out of the four pricing measures, these two bidder types pay premiums which are statistically not different from each other. Overall, these results indicate that synergies play a crucial role in explaining the premium differential.

Panel B presents the same statistics for the public operating subsamples with available analyst forecast information. For both the IBES and Value Line subsamples, the magnitude of all four premium measures is very similar to the overall public sample. In a few cases, the premiums in the public subsamples are higher than in the overall public sample. Nonetheless, these positive differences will only translate into a higher premium differential between strategic (i.e. public operating) and financial investors. Consequently, the subsequent test of the synergy rationale takes place, if anything, in a more demanding setting.

Table 5-3: Premiums by type of winning bidder

This table shows takeover premiums paid for the targets. Data is reported by the type of the winning bidder. The table reports statistics for private equity bidders (financial investors), private operating bidders (strategic investors) and public operating bidders (strategic investors). Panel A sorts the premiums across the bidder types. Panel B reports subsamples of the public operating bidder subsample for which IBES (ValueLine) data is available in order to construct synergy proxies. All variables are defined as in Table 5-2. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Panel A: Premiums across bidder types

Premium measure	Private equity bidder			Private operating bidder			Public operating bidder			Private equity vs. public operating		Private operating vs. public operating	
	n	Mean	Median	n	Mean	Median	n	Mean	Median	T-test	Wilcoxon	T-test	Wilcoxon
Premium	256	31.3%	25.5%	411	47.9%	40.4%	894	45.1%	38.7%	***	***	ins	ins
BHAR	261	22.6%	21.3%	422	37.3%	34.3%	889	35.9%	33.5%	***	***	ins	ins
PremiumCash/EV	252	26.8%	18.4%	401	36.3%	20.9%	873	37.8%	24.9%	***	***	ins	ins
PremiumCash/EBITDA	222	2.0	1.2	292	3.8	2.0	635	4.6	2.6	***	***	*	***

Panel B: Premiums for private equity bidders and public operating bidder *subsamples*

Premium measure	Private equity bidder			Public operating bidder with IBES data			Public operating bidder with Value Line data			PE vs. PO IBES		PE vs. PO Value Line	
	n	Mean	Median	n	Mean	Median	n	Mean	Median	T-test	Wilcoxon	T-test	Wilcoxon
Premium	256	31.3%	25.5%	592	46.3%	38.7%	82	46.5%	42.0%	***	***	***	***
BHAR	261	22.6%	21.3%	594	39.5%	35.4%	82	42.7%	38.4%	***	***	***	***
PremiumCash/EV	252	26.8%	18.4%	585	42.9%	30.0%	82	45.2%	40.0%	***	***	***	***
PremiumCash/EBITDA	222	2.0	1.2	433	5.0	2.7	81	4.2	2.7	***	***	***	***

5.3.2   The value of synergies

Table 5-4 Panel A presents synergy estimates based on IBES data. As previously mentioned, the measure subtracts from the post-merger earning forecast for the combined firm the sum of the pre-merger earnings forecasts for the standalone acquirer and target. The respective delta is scaled with the sum of the pre-merger acquirer and target earnings forecasts and thus gives a sense of the yearly earnings appreciation due to the merger (in percentage points).

Based on the sample of 594 winning bids by public operating bidders, we find that the median (mean) deal is expected to lead to an earnings reduction of 3.6% (3.0%). This figure, which is based on the consensus of relatively neutral analysts, seems somewhat questionable in the light of the evidence that most transactions do create value and that sizeable target takeover premiums are paid.[243] It appears that analysts do indeed not net out transaction related costs (such as goodwill depreciations) from post-takeover earnings forecasts leading to negatively biased synergy estimates.[244] Nonetheless, assuming that there are no systematic differences in the treatment of these costs across analysts, the estimated IBES synergy proxies may still include valuable *ordinal* information for examining the relationship between synergies and takeover premiums.

Panel B, which sorts the takeover premium according to the synergy measure in quartiles, recommends that the indicative IBES synergy proxy indeed contains valuable ordinal information. Across all four pricing measures, the average and median premium is roughly the same for the takeovers in the first and second synergy quartile and increases from the second to the fourth, both in statistical and economic terms. Considering that there is great heterogeneity in the cross-section of takeovers (for example in terms of bidder competition and target characteristics) which is not taken into account in this univariate setting, the results are noteworthy and lend support towards the synergy rationale.

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[243] Cf. for instance Sudarsanam (2010).

[244] Cf. section 5.2.2.1 for details.

Table 5-4: Synergies (IBES) and premiums

Panel A shows summary statistics for the IBES synergy proxy. Panel B sorts the four takeover premium measures into quartiles according to the IBES synergy measure. All variables are defined as in Table 5-2.

Panel A: *IBES* synergy measure

	n	Q25	Median	Q75	Mean
SynIBES	594	-21.2%	-3.6%	11.0%	-3.08%

Panel B: Premiums splitted according to *IBES* synergy measure

Synergy quartile	Premium			BHAR			PremiumCash/EV			PremiumCash/EBITDA		
	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
Q1	148	36.6%	41.6%	149	33.8%	37.0%	147	25.0%	35.8%	109	2.1	3.2
Q2	148	35.1%	38.4%	148	32.2%	32.8%	146	26.4%	31.0%	108	2.2	2.9
Q3	148	39.6%	48.6%	149	34.5%	39.1%	146	33.0%	48.3%	108	3.1	5.1
Q4	148	46.0%	54.5%	148	47.9%	48.5%	146	39.6%	55.6%	108	4.3	9.0
All	**592**	**38.7%**	**45.8%**	**594**	**35.4%**	**39.3%**	**585**	**30.0%**	**42.7%**	**433**	**2.7**	**5.0**

Table 5-5 Panel A presents details for the second synergy estimate which is based on precise VL data. As previously mentioned, we construct for each of the target, bidder and combined firm 5-yearly series of expected cash flows and the respective discount rates in order to estimate appreciation measures in terms of the enterprise value (for details, see section 5.2.2.2). In particular, the measure will represent the difference between the expected operational gains for the combined entity and the sum of the expected operational gains for the stand-alone bidder and target.

We find that the median (mean) deal is expected to lead to operational synergies of $716 ($1,901) million which translates into an economically meaningful 6.2% (9.7%) of the combined firm's enterprise value.[245] When turning to the central question and relating the value of expected operational synergies to the value of the premium paid, we arrive at the following result for the median (mean) strategic deal: expected operational synergies equal 3.1 (5.1) times the size of the takeover premium. While these estimates may initially look large, they are put into perspective when taking into account that expected operational synergies (the numerator) accrue to both the bidder and the target and that the takeover premium (the denominator) accrues solely to the target. Indeed, when considering that the combined size of the bidder and target[246] is approximately 10 times the size of the target, the operational synergy to premium estimates of 3.1 (5.1) seem reasonable.[247] Overall, since the expected operational synergy gains are substantially larger than the premium paid, there is strong evidence towards the view that operating synergies on behalf of strategic deals may indeed explain the premium differential between strategic and financial takeovers.

The aforementioned estimates are relatively robust to changes in the synergy valuation methodology and the underlying assumptions outlined in section 5.2.2.2. Devos et al.

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[245] Further, the expected operational synergy estimate for the median (mean) deal translates into 126% (224.0%) of the target's enterprise value which can be interpreted as an upper premium bound the bidder is able to offer based on expected operational synergies. The pronounced right-hand skew of the estimate arises from the fact that the sample targets are smaller than the bidders.

[246] These are the stand-alone enterprise values measured before the transaction announcement day.

[247] In turn, these estimates can also be interpreted in the way that the target vendors capture a substantial portion of the expected operational synergies which exceeds their relative size, i.e. they seem to benefit disproportionally more from takeovers.

(2009) show that (i) working capital adjustments in terms of excluding cash and debt in current liabilities, (ii) alterations to the discount rate such as increasing the debt beta from 0 to 0.25 or (iii) increasing the real growth rate of cash flows after year 5 from 0% to 2% changes the synergy estimates only marginally.

Panel B, which sorts the takeover premium according to the operational synergy measure in quartiles, shows that there is a strong correlation between these two variables. For all four pricing measures, the average premium increases across all four synergy quartiles. The results for the median premium are highly similar, only for the enterprise value pricing measures (*CashPremium/EV* and *CashPremium/EBITDA*) the premium does not increase from the third to the fourth quartile. Again, considering that there is great heterogeneity in the cross-section of takeovers which is not controlled for in this univariate exercise, the results imply that operational synergies indeed play a, if not the, central role in explaining takeover pricing.

Table 5-5: Synergies (VL) and premiums

Panel A shows summary statistics for the VL synergy proxy. Panel B sorts the four takeover premium measures into quartiles according to the VL synergy measure. All variables are defined as in Table 5-2.

Panel A: *Value Line* synergy measure and relative size

	n	Q25	Median	Q75	Mean
SynVL_Cash	82	12	716	2,042	1,901
SynVL_Cash / EV (Combined)	82	0.2%	6.2%	19.0%	9.7%
SynVL_Cash / EV (Target)	82	0.9%	126.4%	379.0%	224.0%
SynVL_Cash / PremiumCash	82	0.3	3.1	8.1	5.1
EV(Bidder) / EV(Target)	82	3.0	9.9	28.3	31.6
EV(Bidder+Target) / EV(Target)	82	4.0	10.9	29.3	32.6

Panel B: Premiums split according to *Value Line* synergy measure

Synergy quartile	Premium			BHAR			PremiumCash/EV			PremiumCash/EBITDA		
	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
Q1	21	17.9%	19.6%	21	10.3%	17.4%	21	18.6%	12.9%	21	1.2	1.3
Q2	20	45.0%	41.1%	20	42.5%	37.5%	20	48.3%	46.6%	20	3.7	2.9
Q3	21	56.7%	51.9%	21	48.9%	43.1%	21	55.7%	52.5%	20	5.6	3.5
Q4	20	67.3%	60.7%	20	70.5%	56.4%	20	59.0%	44.6%	20	6.5	3.2
All	**82**	**46.5%**	**42.0%**	**82**	**42.7%**	**38.4%**	**82**	**45.2%**	**40.0%**	**81**	**4.2**	**2.7**

5.3.3 Regression analysis of takeover premium

So far we have shown that the expected operational synergy gains associated with strategic takeovers are substantially larger than the estimated takeover premium. The median (mean) strategic deal is expected to result in operational synergies 3.1 (5.1) times the size of the takeover premium. Whilst the size of the operational synergy gains relative to the takeover premium is interesting in its own right, simple premium rankings by the synergy measures suggests that there may be a cross-sectional relationship between the two variables which may help in explaining the premium differential between strategic and financial takeovers.

We deepen the analysis by estimating cross-sectional regressions in which the dependent variable is the takeover premium and the independent variables include information about (i) the identity of the bidder, i.e. if the bidder is a financial or strategic investor, (ii) the value of expected operational synergies for the strategic subsample and (iii) multiple deal and target characteristics. For each of the four premium measures, we present three regressions. The *first* regression serves as a base case and includes a simple dummy variable which takes on the value of unity for strategic bidders and is zero otherwise. Its estimated coefficient will indicate how large the premium differential is between financial and strategic takeovers for the respective premium measure (controlling for all sorts of variation at the deal and target level). The second regression will split the strategic dummy variable into takeovers with low and high operational synergy potential according to whether the calculated IBES (VL) measure is above or below zero (its median value). Similarly, the third regression will split the strategic dummy variable into quartiles for the IBES and VL measures.

Table 5-6 presents results of the regression analysis using the indicative IBES synergy measure.

Table 5-6: Regression analysis of premiums with IBES synergy measure

This table presents ordinary least squares regressions of the takeover premium on explanatory variables including IBES synergy measures. All consummated deals by private equity (financial) and public operating (strategic) bidders are included in the regressions. All variables including the four takeover premium measures (*Premium, BHAR, PremiumCash/EV* and *PremiumCash/EBITDA*) are defined as in Table 5-2. The numbers in the upper rows represent the regression coefficients. The numbers in the lower rows are t-statistics based on robust White (1980) standard errors. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	IBES-1	IBES-2	IBES-3	IBES-4	IBES-5	IBES-6	IBES-7	IBES-8	IBES -9	IBES-10	IBES-11	IBES-12
	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA
Strategic bidder	0.165	0.207	0.177	2.582								
	(5.48)***	(5.81)***	(4.74)***	(4.27)***								
SynIBES_negative					0.117	0.164	0.121	1.346				
					(3.79)***	(4.45)***	(3.25)***	(2.27)**				
SynIBES_positive					0.232	0.267	0.255	4.783				
					(6.34)***	(6.27)***	(5.38)***	(5.86)***				
SynIBES_1Q(lowest)									0.076	0.113	0.097	1.384
									(2.12)**	(2.62)***	(2.14)**	(1.90)*
SynIBES_2Q									0.119	0.172	0.099	0.992
									(3.28)***	(4.07)***	(2.39)**	1.55
SynIBES_3Q									0.195	0.237	0.209	1.368
									(4.76)***	(4.95)***	(4.11)***	(1.84)*
SynIBES_4Q(highest)									0.259	0.294	0.284	6.241
									(6.44)***	(6.35)***	(5.45)***	(6.64)***
MCap	-0.008	0.007	-0.009	0.034	-0.007	0.007	-0.008	0.018	-0.008	0.006	-0.008	0.096
	0.83	0.53	0.75	0.18	0.75	0.60	0.68	0.10	0.82	0.50	0.66	0.53
Debt/Assets	0.008	-0.040	-0.443	-0.849	0.004	-0.043	-0.446	-0.884	-0.011	-0.059	-0.458	-1.099
	0.13	0.55	(5.48)***	0.57	0.07	0.60	(5.54)***	0.61	0.18	0.82	(5.67)***	0.79

Table 5-6: Regression analysis of premiums with IBES synergy measure (continued)

	IBES-1	IBES-2	IBES-3	IBES-4	IBES-5	IBES-6	IBES-7	IBES-8	IBES -9	IBES-10	IBES-11	IBES-12
	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA
TobinsQ	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.001
	(2.18)**	(3.55)***	1.43	(3.30)***	(2.77)***	(3.98)***	(1.98)**	(2.80)***	(3.01)***	(4.16)***	(2.14)**	(3.04)***
Aret12	-0.108	-0.391	-0.094	-1.624	-0.098	-0.383	-0.083	-1.433	-0.094	-0.380	-0.078	-1.344
	(3.36)***	(10.42)***	(2.40)**	(2.11)**	(3.03)***	(10.16)***	(2.10)**	(1.91)*	(2.93)***	(10.10)***	(2.00)**	(1.86)*
Challenged	0.111	0.126	0.074	1.040	0.108	0.124	0.070	0.953	0.107	0.122	0.067	1.111
	(2.53)**	(2.76)***	1.40	1.31	(2.52)**	(2.74)***	1.34	1.21	(2.50)**	(2.73)***	1.30	1.37
Hostile	0.086	0.146	0.130	-0.569	0.090	0.151	0.135	-0.486	0.102	0.165	0.143	0.070
	0.89	1.48	1.07	0.49	0.94	1.54	1.10	0.39	1.04	1.64	1.15	0.06
Tender	0.030	0.054	0.045	0.135	0.036	0.060	0.052	0.084	0.035	0.060	0.052	0.154
	1.08	(1.66)*	1.34	0.21	1.33	(1.85)*	1.57	0.13	1.30	(1.84)*	1.55	0.26
MBO	0.028	0.054	0.003	0.242	0.023	0.051	-0.002	0.088	0.021	0.048	-0.005	0.084
	0.70	1.10	0.08	0.43	0.59	1.03	0.05	0.16	0.52	0.97	0.13	0.15
Bankrupt	-0.965	-0.796	-0.572	0.000	-0.899	-0.773	-0.497	0.000	-0.894	-0.773	-0.464	0.000
	(10.83)***	(7.82)***	(3.95)***	(.)	(9.77)***	(8.93)***	(3.38)***	(.)	(9.35)***	(8.77)***	(3.05)***	(.)
Defense	0.052	-0.059	0.003	0.889	0.037	-0.073	-0.016	0.438	0.039	-0.071	-0.016	-0.059
	0.44	0.55	0.02	0.54	0.32	0.69	0.11	0.27	0.33	0.66	0.11	0.04
Toehold	-0.064	-0.086	-0.052	-0.681	-0.065	-0.086	-0.052	-0.452	-0.054	-0.075	-0.042	-0.495
	1.57	(1.73)*	1.11	1.24	1.59	(1.74)*	1.11	0.79	1.34	1.53	0.90	0.86
B_Lock	0.004	0.063	0.117	-1.012	0.026	0.081	0.143	-0.333	0.028	0.084	0.148	0.085
	0.04	0.52	0.75	0.56	0.21	0.69	0.93	0.19	0.23	0.70	0.94	0.05

Table 5-6: Regression analysis of premiums with IBES synergy measure (continued)

	IBES-1	IBES-2	IBES-3	IBES-4	IBES-5	IBES-6	IBES-7	IBES-8	IBES -9	IBES-10	IBES-11	IBES-12
	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA
T_Lock	0.117	0.287	-0.060	3.096	0.082	0.256	-0.101	1.963	0.022	0.198	-0.169	1.572
	(2.07)**	(4.35)***	0.80	(2.43)**	1.07	(3.11)***	0.96	0.86	0.32	(2.57)**	(1.78)*	0.56
T_TermFee	0.048	0.037	0.032	0.279	0.049	0.038	0.032	0.287	0.047	0.036	0.029	0.213
	(1.75)*	1.14	0.89	0.58	(1.82)*	1.18	0.91	0.63	(1.73)*	1.13	0.81	0.48
B_TermFee	0.020	0.060	-0.015	-0.822	0.015	0.055	-0.020	-0.913	0.020	0.061	-0.016	-0.881
	0.51	1.37	0.31	1.11	0.39	1.3	0.43	1.22	0.54	1.44	0.35	1.22
Constant	0.533	0.022	0.564	-1.830	0.587	0.032	0.635	-0.313	0.628	0.053	0.658	-0.772
	(2.84)***	0.09	(2.63)***	0.81	(3.22)***	0.13	(2.96)***	0.14	(3.36)***	0.21	(2.94)***	0.32
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	788	793	780	617	788	793	780	617	788	793	780	617
Adjusted R-squared	0.222	0.305	0.210	0.160	0.239	0.314	0.225	0.208	0.246	0.319	0.229	0.247

For all four premium measures the strategic bidder dummy is consistently large and significant (at the 1% level, see regression specifications IBES-1 to IBES-4). In terms of the traditional equity measures, strategic investors pay on average 16.5% (*Premium*) to 20.7% (*BHAR*) higher premiums than financial investors. In terms of the enterprise value measures, the former pay higher premiums of 17.7% (*PremiumCash/EV*) and 2.6 (*PremiumCash/EBITDA*)[248] than the latter. These sizeable effects are in line with the results reported by Bargeron et al. (2008).

Next, we test whether expected operating synergies on behalf of the strategic takeovers may help in explaining the premium differential, and if yes, to what extent. As previously outlined, we therefore employ conservative synergy estimates which shall predominantly capture gains from the specific fit between the target and acquirer but not stand-alone restructuring potential (for details, see section 5.2). Regressions IBES-5 to IBES-8 present results for including two synergy indicators which are set to one if a strategic deal is expected to lead to an earnings gain or loss, respectively. Similarly, regressions IBES-9 to IBES-12 report results if we extend the aforementioned analyses and build synergy quartile indicator variables which are set to one if the strategic deals rank in the respective quartiles (of the IBES consensus estimates). For economy of presentation, the discussion will be limited to the latter set of regressions (IBES-9 to IBES-12).

We find that synergies play a role in explaining the premium difference. In specifications IBES-9 and IBES-10, the equity premium measures increase almost monotonically across the synergy quartiles, both in terms of economic and statistical significance. For instance, regression IBES-10 shows that the quartile of strategic investors with the highest expected synergies (Syn_Q4) pay on average 29.4% higher premiums than financial investors (t-stat of 6.35). This difference continuously becomes smaller across the remaining quartiles of strategic investors. For the quartile of strategic investors with the lowest expected synergies (Syn_Q1), the difference shrinks to 11.3% (t-stat of 2.62%). The results for the enterprise premium measures in specifications A-11 and A-12 are less distinct. In particular, strategic

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[248] As noted in section 5.2.3, we use realized EBITDA from the last fiscal year before the transaction announcement as a proxy for unobservable future EBITDA. Since this proxy is likely to be systematically lower than future EBITDA, our *PremiumCash/EBITDA* estimates will be biased upwards.

investors of the first synergy quartile seem not to pay lower premiums than the ones of the second quartile. Taking the latter quartile as the point of origin, however, premiums again increase steadily across the third and fourth synergy quartile.

One observation across all four specifications (IBES-9 to IBES-12) is that the premium differential for the strategic investor subsample with the lowest expected synergies (Syn_Q1) is significantly smaller than for the overall strategic investor sample (cf. IBES-1 to IBES-4) but it is still significantly positive. There are two reasons why this may be the case: *first,* even after controlling for synergies, there may still be a premium differential due to other potential reasons not controlled so far in the analysis.[249] *Second,* it may be that the IBES proxy may not grasp synergies sharply enough. As already pointed out, the IBES proxy is helpful in getting an initial sense of how expected synergies are related to the takeover premium when applied to a large cross-section of deals. However, it does not precisely estimate the magnitude of synergies. In particular, some analysts may consider in their post-takeover earnings forecast certain factors (e.g. goodwill depreciations) which impair the proxy's informational value. In the following, we address the latter possibility by turning to the precise VL synergy measure. Table 5-7 presents the respective regression results.

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[249] For example, it may be that financial investors offer target managers substantial equity portions in the new company which may induce them to accept lower takeover premiums for their own private benefit at the cost to shareholders. Alternatively, a further plausible factor may be that strategic investors may be more reluctant to step away from deals (for example due to fewer suitable takeover targets or due to private benefit considerations such as empire building).

Table 5-7: Regression analysis of premiums with VL synergy measure

This table presents ordinary least squares regressions of the takeover premium on explanatory variables including Value Line synergy measures. All consummated deals by private equity (financial) and public operating (strategic) bidders are included in the regressions. All variables including the four takeover premium measures (*Premium, BHAR, PremiumCash/EV* and *PremiumCash/EBITDA*) are defined as in Table 5-2. The numbers in the upper rows represent the regression coefficients. The numbers in the lower rows are t-statistics based on robust White (1980) standard errors. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively.

	VL-1	VL-2	VL-3	VL-4	VL-5	VL-6	VL-7	VL-8	VL-9	VL-10	VL-11	VL-12
	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA	Premium	BHAR	Premium-Cash/ EV	Premium-Cash/ EBITDA
Strategic bidder	0.188	0.217	0.179	1.804								
	(3.56)***	(3.84)***	(3.12)***	(2.19)**								
SynVL (below median)					0.060	0.093	0.081	0.065				
					1.2	(1.73)*	1.55	0.1				
SynVL (above median)					0.350	0.375	0.302	4.117				
					(5.05)***	(5.09)***	(3.58)***	(3.14)***				
SynVL_1Q (lowest)									-0.048	-0.023	-0.009	-1.343
									0.82	0.36	0.15	1.41
SynVL_2Q									0.159	0.197	0.163	1.275
									(2.40)**	(2.87)***	(2.49)**	(1.90)*
SynVL_3Q									0.342	0.325	0.263	3.374
									(3.99)***	(3.93)***	(2.58)**	(2.94)***
SynVL_4Q (highest)									0.350	0.418	0.337	4.710
									(4.24)***	(4.31)***	(3.07)***	(2.30)**
MCap	-0.005	0.011	0.011	0.194	-0.009	0.007	0.008	0.140	-0.008	0.008	0.009	0.147
	0.33	0.63	0.72	1.01	0.64	0.43	0.53	0.77	0.57	0.50	0.59	0.83
Debt/Assets	0.107	-0.042	-0.443	-0.240	0.118	-0.033	-0.435	0.012	0.137	-0.018	-0.424	0.205
	1.12	0.33	(3.67)***	0.17	1.26	0.26	(3.60)***	0.01	1.44	0.14	(3.45)***	0.14

Table 5-7: Regression analysis of premiums with VL synergy measure (continued)

	VL-1	VL-2	VL-3	VL-4	VL-5	VL-6	VL-7	VL-8	VL-9	VL-10	VL-11	VL-12
	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA
TobinsQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1.55	(2.45)**	(1.96)*	0.37	1.33	(2.27)**	(1.81)*	0.68	0.98	(1.96)*	1.53	0.98
Aret12	-0.142	-0.389	-0.121	-1.507	-0.135	-0.382	-0.116	-1.408	-0.132	-0.379	-0.113	-1.371
	(3.07)***	(7.39)***	(2.01)**	(1.78)*	(2.98)***	(7.24)***	(1.93)*	(1.78)*	(2.90)***	(7.15)***	(1.87)*	(1.79)*
Challenged	0.105	0.139	0.093	1.448	0.106	0.140	0.093	1.485	0.102	0.136	0.091	1.452
	(2.22)**	(2.41)**	1.54	(1.76)*	(2.35)**	(2.49)**	1.60	(1.94)*	(2.23)**	(2.42)**	1.54	(1.87)*
Hostile	0.151	0.081	0.267	0.368	0.144	0.074	0.262	0.239	0.113	0.040	0.236	-0.164
	1.24	0.65	(2.32)**	0.33	1.42	0.73	(2.71)***	0.21	1.10	0.38	(2.35)**	0.16
Tender	0.014	0.068	0.025	-0.194	0.004	0.059	0.017	-0.394	0.007	0.064	0.022	-0.315
	0.35	1.28	0.57	0.29	0.10	1.11	0.39	0.60	0.18	1.21	0.50	0.49
MBO	-0.038	0.024	-0.065	-0.902	-0.039	0.023	-0.066	-0.928	-0.043	0.021	-0.067	-0.940
	0.91	0.44	1.55	(1.78)*	0.95	0.41	1.59	(1.85)*	1.04	0.38	1.62	(1.84)*
Bankrupt	0.000	-0.585	0.000	0.000	0.000	-0.598	0.000	0.000	0.000	-0.619	0.000	0.000
	(.)	(4.72)***	(.)	(.)	(.)	(4.78)***	(.)	(.)	(.)	(4.85)***	(.)	(.)
Defense	-0.162	-0.290	-0.258	-1.181	-0.260	-0.387	-0.333	-2.508	-0.244	-0.374	-0.323	-2.344
	1.26	(2.21)**	(1.93)*	0.80	(2.22)**	(3.40)***	(2.67)***	(1.90)*	(2.01)**	(3.13)***	(2.41)**	(1.74)*
Toehold	-0.023	0.064	-0.024	-0.562	-0.007	0.080	-0.012	-0.360	-0.006	0.078	-0.014	-0.427
	0.39	0.89	0.39	0.94	0.13	1.13	0.19	0.60	0.10	1.10	0.22	0.72
B_Lock	0.147	0.379	0.214	-0.411	0.235	0.465	0.281	0.742	0.224	0.457	0.275	0.660
	0.98	(2.33)**	1.40	0.24	(1.81)*	(3.36)***	(2.03)**	0.51	(1.70)*	(3.32)***	(1.91)*	0.45

Table 5-7: Regression analysis of premiums with VL synergy measure (continued)

	VL-1	VL-2	VL-3	VL-4	VL-5	VL-6	VL-7	VL-8	VL-9	VL-10	VL-11	VL-12
	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA	Premium	BHAR	Premium-Cash/EV	Premium-Cash/EBITDA
T_Lock	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
T_TermFee	0.003	0.004	-0.019	0.298	0.000	0.001	-0.021	0.246	-0.008	-0.011	-0.030	0.080
	0.08	0.08	0.32	0.74	0.01	0.02	0.35	0.63	0.19	0.22	0.50	0.19
B_TermFee	0.085	0.102	0.043	0.322	0.100	0.117	0.055	0.570	0.116	0.130	0.066	0.726
	(1.70)*	(1.78)*	0.78	0.38	(2.19)**	(2.08)**	1.02	0.73	(2.57)**	(2.31)**	1.28	1.01
Constant	0.090	0.237	-0.030	-1.691	0.112	0.230	-0.032	-1.774	0.137	0.194	-0.062	-2.255
	0.19	0.9	0.12	0.72	0.25	0.87	0.12	0.76	0.3	0.71	0.23	0.8
Time dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	322	326	319	289	322	326	319	289	322	326	319	289
Adjusted R-squared	0.244	0.319	0.158	0.208	0.296	0.348	0.180	0.267	0.305	0.355	0.183	0.279

The results for the base regression models VL-1 to VL-4 remain largely unchanged: the estimated magnitude of the premium differential is highly similar to the aforementioned IBES results for three out of four premium measures; solely in the case of the *Premium/EBITDA* measure is the differential lower but still significantly different from zero. Hence, although the requirement for precise VL data has decreased the sample size, the aforementioned results imply that the regressions with the VL proxy still take place across a very representative setting.[250]

Similar to the regression set with the IBES measure, specifications VL-5 to VL-8 present results for two indicator variables which are set to unity if expected operational synergies are below or above its median value, respectively. Likewise, regressions VL-9 to VL-12 extend this analysis to quartile indicator variables which are set to unity if expected operational synergies rank in the respective quartiles. Again, for economy of presentation, the discussion will be limited to the latter set of regressions. Similar to the IBES results, we find that operational synergies play a central role in explaining the premium differential.

For all four pricing measures, the premium differential steadily decreases from the highest to the lowest synergy quartile. For example, if we focus on regression VL-11 which details results for the enterprise premium measure *PremiumCash/EV*, we can see the following pattern: the quartile of strategic deals with the highest expected synergies (Syn_Q4) pay on average 33.7% higher premiums than financial investors (t-stat of 3.07). This differential steadily gets smaller across the remaining quartiles of strategic deals. Indeed, the quartile of strategic deals with the lowest expected synergies pay on average similar premiums to financial investors as recommended by the statistically insignificant coefficient Syn_Q1 of -1.0% (t-stat of 0.15). We know from Table 5-5 that on average the deals of this quartile are expected to generate operating synergies of less than 0.9% (0.2%) in terms of the target's EV (combined firm's EV). Hence, the regression estimates also appear highly sensible from an

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[250] In fact, one may argue that the limited sample size leads to a very demanding test for the synergy rationale: only if there is indeed a strong relationship between expected synergies and takeover premiums, the small sample shall pick it up.

economic point of view. This conclusion is not limited to the *PremiumCash/EV* measure but is robust to all three alternative premium measures.

Consequently, there is strong evidence in favour of the synergy rationale being a, if not *the* central factor in explaining the premium differential between strategic and financial investors. There seems to be little left in favour of alternative explanations - such as the collusion argument between financial investors and target managers to the detriment of their shareholders - but clearly, this conjecture is subject to a rigorous test.

The above discussion has focused on the test of the synergy rationale. In what follows, we shall briefly discuss the results for the battery of control variables (for both Table 5-6 and Table 5-7) which have been included in the regressions in order to provide a rigorous setting.

With respect to target characteristics, the following picture evolves: we do not find any evidence, that the size of the target (*MCap*) is related to the premiums paid. There is also only very limited support for the notion that higher leverage (*Debt/Assets*) leads to lower premiums. In particular, leverage only seems to impact on the enterprise premium measure *PremiumCash/EV*. This result may be rationalized in the sense that the dollar premium paid (which is the basis for the enterprise premiums) will decrease with higher leverage ratios although the percentage premium (on equity) may stay unchanged. Further, we find some evidence that firms with a high growth potential (*Tobin's Q*) are associated with higher premiums. Finally, there is strong support that a positive share price development in the year before the run-up period (*Aret*) limits the premium upside potential.

With respect to deal characteristics, we find the following results: There is clear evidence that a competitive bidding process (*Challenged*) leads to higher premiums. Further, deals for bankrupt targets (*Bankrupt*) are priced significantly lower. We also find evidence that defensive deals are associated with lower premiums. Finally, there is also some evidence that termination fees and lockup provisions on behalf of both the

bidder and target lead to higher premiums. For all remaining deal characteristics, we find no consistent evidence that they help to explain the premiums paid.

5.4 Summary

This chapter compares the pricing of financial and strategic investors. Consistent with Bargeron et al. (2008), it is first shown that financial investors pay remarkably lower takeover premiums than strategic investors. By examining both traditional equity premium measures and novel enterprise premium measures as suggested by Jenkinson/Stucke (2010), it is established that the differential is not grounded in the premium calculation methodology.

Based on these results, we contribute to the literature by empirically evaluating how much of the premium differential can be explained by expected operational synergies on behalf of strategic takeovers. Grasping the value of this intuitive argument is demanding but to central importance for the discussion: only by discounting for operational synergies in strategic deals, can a well-founded economic comparison of both bidder types and their takeover pricing take place.

Exploiting Value Line analyst revisions around the takeover consummation date, we calculate conservative operational synergy estimates largely free of standalone restructuring potential. When these expected dollar operational synergy gains are set in relation to the dollar premium paid, the median transaction is expected to generate operational synergies 3.1 times the size of the premium paid for the target.[251] Consequently, since the expected incremental value gain stemming from operational synergies is significantly higher than the value of the premium paid, there is strong evidence towards the view that operating synergies can indeed explain the premium differential between strategic and financial takeovers.

In order to draw more direct and robust inference about the impact of operational synergies on the premium differential, we run cross-sectional regressions on the takeover premium and include operating synergy quartile indicators for the strategic

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[251] While this ratio may initially look large, it is put into perspective when considering that the median combined firm to target ratio equals 10.9.

investor subsample (i.e. the financial investor subsample represents the control group) as well as a whole set of control variables in the form of deal-, target-, industry- and year-fixed-effects. The results lend strong support towards the decisive role of synergies. For both traditional equity and alternative enterprise pricing measures, the premium differential is largest for the quartile of strategic deals with the highest expected operational synergies, decreases steadily across the remaining quartiles and is not statistically different from zero for the quartile of strategic deals with the lowest expected operational synergies. Since the strategic deals of the first quartile are expected to generate operating synergies of less than 0.9% (0.2%) in terms of the target's firm value (the combined firm's firm value), the regression estimates appear highly sensible from an economic point of view.

Consequently, we find very strong evidence in favour of the operational synergy rationale being a, if not *the* central factor in explaining the premium differential between strategic and financial investors. This result is of great relevance in light of the increased criticism often directed towards financial investors: that collusion with target managers might be a decisive driver of the premium differential. In almost all financial sponsor backed deals, respective class action complaints are filed by stockholders. However, hardly any succeed. In line with these lawsuit outcomes, the strong empirical evidence for operational synergies indicates that collusion may indeed play rather a minor role in the premium differential but clearly, a rigorous, direct comparison of both rationales is required. Such an analysis represents an interesting avenue for future research. From a more theoretical point of view, the strong operational synergy result is consistent with the view of an efficient takeover market, where target vendors appropriate substantial parts[252] of expected future gains and strategic bidders win auctions when expected operational synergies allow them to outbid financial bidders.

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[252] Cf. footnote 247.

6 Conclusion

6.1 Summary of results and contributions

This thesis draws on transactions of publicly listed companies to address the following three largely unanswered research questions at the intersection of the fields of takeovers and private equity:

1. *What are the investment motives of private equity investors in the distinctive continental European context?*
2. *How much do private equity investors pay for continental European firms?*
3. *Why do strategic investors pay so much more compared to private equity investors?*

The insights gained throughout the empirical analyses of chapters 3 to 5 can be summarized as follows:

What are the investment motives of private equity investors in the distinctive continental European context? It is analysed whether and how the distinctive corporate governance of continental European firms impacts upon the investment decisions of private equity investors. In terms of governance, the focus lies thereby on the ownership and control structure. Typically, firms in continental Europe are held by large blockholders. It is proposed that their stake size and identity influences the investment decision of private equity investors in two ways. First, a large stake endows the largest blockholder with powerful incentives to monitor the management. Such monitoring is likely to make the firm less attractive to private equity investors since there is less remaining value creation potential stemming from agency cost reductions. Conversely, a large blockholder who is not able to monitor the management (perhaps because of a lack of specific skills) may be more intent on selling her/his firm to a private equity investor. *Second*, the largest blockholder may use her/his control rights also to her/his own benefit and extract private benefits from the firm at the expense of remaining shareholders. Given such rent extraction, the largest blockholder is only willing to sell her/his stake at a premium that is high enough to compensate her/him for the foregone benefits. Consequently, private equity

investors may avoid companies whose largest shareholder appropriates private benefits since their stakes may be particularly expensive.

To test these propositions, the author self-collects all private equity sponsored going private transactions completed between 1997 and 2007 for which the required data points are available and identifies control firms via a country/industry/size-matching algorithm.

Based on logistic regressions, strong evidence in favour of both central governance arguments is found. However, this pattern largely emerges only when differentiating between the various types of large blockholders and it only applies to firms whose ultimate controlling shareholder is a family. Further, the chapter aims to shed light on the relative importance of the monitoring and private benefits argument by analysing their marginal effects. It emerges that a one-percent increase in the measure of private benefits of control has twice the negative effect on the takeover likelihood than a one-percent increase in monitoring incentives. This result may explain why the previous literature has found fairly strong evidence of the exploitation of private benefits of control in family controlled firms, but less conclusive results on the monitoring benefits of family shareholders.

In addition to these central governance results, the evidence also suggests that potential tax and incentive benefits stemming from a high debt capacity as well as a low trading volume increase the likelihood of a private equity acquisition.

This chapter contributes to the literature in four main ways. First, it is one of the first studies to examine private equity acquisitions in continental Europe, a region where private equity sponsors have been particularly active. Second, it focuses on the firm's governance structure and recommends that monitoring and rent extraction by the largest blockholder are particularly important investment determinants for private equity sponsors in continental Europe. Third, it also analyses both rationales across different shareholder classes thereby contributing to the sparse literature on which types are more or less prone to monitor and/or extract private benefits. Fourth, unlike

previous studies on going private transactions, this study clearly distinguishes between the tax advantage and the disciplinary role of leverage.

How much do private equity investors pay for continental European firms? The pricing of private equity acquisitions in the distinctive continental European corporate governance context is examined. In line with the previous chapter, the author argues that the concentrated ownership structure of continental European firms affects the pricing of private equity acquisitions in two crucial ways. First, due to her/his sizeable investment in the company, the largest blockholder is likely to have sharp incentives to mitigate the classical manager-shareholder conflict. Given that he curtails managerial malpractice, there is less remaining potential for the private equity investor to create value from the reduction of this agency conflict in the post-buyout company, thereby leading to lower premiums and, hence, lower announcement returns. Yet, not all types of blockholders, such as the government for instance, may engage in monitoring. Second, the largest blockholder may also be tempted to abuse her/his power and appropriate private benefits from the firm at the cost of remaining shareholders. As a result, s/he relinquishes control to a private equity investor only for a proportionally higher premium to offset the surrendered private benefits. Rent extraction by the largest blockholder can be curtailed by the presence of a second large shareholder. Consequently, private equity acquisition premiums and the respective announcement returns are likely to be lower if there is a second large blockholder in the pre-buyout company who confines the discretion of the largest shareholder to consume private benefits.

Based on the same transaction sample from chapter 3,[253] the following results can be deduced: private equity investors pay a final mean premium of 28.3% relative to the market price two months before the announcement date. This value is 3.0 percentage points lower than for comparable US transactions and, thus, is consistent with the monitoring and restriction of private benefits rationales. Further, shareholders gain around the announcement day abnormal returns of 13.0% in the [-1,1] event window.

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[253] The final sample size is smaller due to alternative data requirements.

This value is 7.7 percentage points lower relative to US transactions and, thus, underlines the higher deal completion risk in continental Europe.

With respect to the underlying sources, the cross-sectional regressions lend strong support towards the crucial role of both the monitoring and private benefits argument. In terms of monitoring, the stake of the largest blockholder is negatively related to premiums and abnormal returns. This result endorses the view that large blockholders curb managerial malpractice thereby leaving less manager-financier agency cost reduction potential for the private equity investor in the post-buyout company. When distinguishing between various types of large shareholders, the evidence suggests that corporations, banks and holdings are active monitors but not so the government and, consequently, private equity acquisitions from the former are priced less than the ones from the latter. Interestingly, outsider families also appear not to be active monitors but this result has to be treated with care. As shown in the previous empirical chapter, families appear to have stronger incentives to consume private benefits than to monitor the management. Hence, even though effective monitoring may occur, it could be overshadowed by the extraction of private benefits. The chapter sheds light on the validity of the private benefits argument by exploiting the existence of a second large blockholder in the target's shareholder structure. The simple idea is that s/he can act as a monitor of the dominant blockholder which, in turn, limits the latter's ability to extract private rents and to demand higher takeover prices. In line with this monitor-of-the-monitor argument, the presence of a second large blockholder is found to be negatively related to the premiums and abnormal returns.

Besides the central governance results, there is also strong support that targets with low valuation levels confer higher premiums and abnormal returns. This supports the notion that private equity investors are skilful in both identifying less visible and/or underperforming firms as well as increasing their value under private ownership. Finally, there is also evidence that a thin pre-buyout trading volume amplifies the premiums.

Similarly to the third chapter, this study contributes to the literature in four main ways. First, it is one of the first studies to examine the role of PE investors in continental

European markets. These markets have experienced significant growth and are marked by distinctive characteristics in comparison to the Anglo-Saxon markets. Second, it focuses on the blockholder structure as one distinctive continental European feature and suggests that monitoring and private benefit consumption are crucial pricing factors. Third, it analyses monitoring incentives not only in terms of stake size but also in terms of blockholder identity. Thereby, it contributes to the sparse and inconclusive literature about the types of shareholders that are active rather than passive monitors. Fourth, an interesting feature of this research setting is the combination of the blockholder structure and sharp pricing measures due to market prices. Thereby, the chapter may not only help in understanding the pricing of public private equity targets but also the pricing of private private equity targets who are characterised by concentrated ownership but lack sharp pricing measures.

Why do strategic investors pay so much more compared to private equity investors? The premium differential between strategic and private equity, i.e. financial acquisitions is analysed. It is first demonstrated that the differential is not grounded in the methodology of calculating the takeover premium: it holds for both traditional equity premium measures and novel enterprise premium measures as suggested by Jenkinson/Stucke (2010). For the former, the premium differential ranges from 44% to 58% while for the latter it varies from 41% to 125%.

The author argues that a crucial reason behind the premium differential is expected operational synergies on behalf of strategic takeovers. While this is an intuitive rationale, it is very hard to grasp empirically. To estimate it, analyst revisions around the merger consummation date are exploited and, thereby, the majority of limitations encountered by traditional approaches are circumvented. In particular, the measure is calculated as the difference between the expected operational gains for the combined entity and the sum of the expected operational gains for the stand-alone bidder and target. In order to arrive at these expected operating gains, the author constructs 5-yearly series of expected cash flows, discount rates and terminal values based on precise Value Line forecast data and employs adjusted compressed present value methodology. By focusing on the analyst revisions around the merger consummation

date, the resulting operational synergy proxy mainly picks up gains from the specific target-bidder fit, i.e. it is largely free of standalone restructuring potential.

This approach yields an expected operational synergy estimate of $716 million which equals approximately three times the size of the premium's dollar value. This figure lends strong support towards the notion that operational synergies play a, if not the central role in explaining the substantially higher premiums paid by strategic than financial investors.

To examine this proposition more directly and thoroughly, cross-sectional regressions are run on the takeover premium with quartile synergy indicator variables and a battery of controls on the right hand side. The results underline the decisive role of operational synergies in explaining the premium differential. For both traditional equity and novel enterprise pricing measures, the premium differential

- is largest for the quartile of strategic deals with the highest expected operational synergies,
- decreases steadily across the remaining quartiles and
- is not statistically different from zero for the quartile of strategic deals with the lowest expected operational synergies.

Since the strategic deals of the latter, i.e. the lowest quartile, are expected to confer marginal operating synergies of less than 0.9% (0.2%) in terms of the target firm's (combined firm's) value, the regression estimates appear highly sensible from an economic point of view. Consequently, there is very strong evidence that operational synergies explain the premium differential between strategic and financial acquisitions. This is consistent with the view of an efficient takeover market, where target vendors appropriate substantial parts of expected future gains and strategic bidders win auctions when expected operational synergies allow them to outbid financial bidders.

This study contributes to the literature in four main ways: First, it examines the unresolved issue why financial investors pay substantially lower takeover premiums than strategic investors, a question which has drawn much interest by academics,

practitioners and regulators alike. Second, it tests the robustness of the premium differential against the novel enterprise measure of Jenkinson/Stucke (2010): the result stays intact. Third, this study argues that operational synergies on behalf of strategic acquisitions are a crucial determinant of the differential and tests this proposition rigorously. In particular, analyst revisions around the merger consummation date are exploited. This methodology circumvents the majority of limitations encountered by traditional approaches and results in a sharp operational synergy estimate largely free of standalone restructuring potential. Fourth, the strong results in favour of the operational synergy argument suggest that alternative explanations, such as the often cited collusion conjecture between financial investors and target managers, may play a rather minor role in explaining the sizeable premium differential, but clearly, more research is required with respect to this question.

6.2   Outlook

Thus far, history has seen the takeover tide rising and falling six times. While the financial crises stopped the unprecedented activity of the last wave, recent statistics deny the notion of the post 2007 takeover market as a calm one: in each year, the global aggregated transaction value amounted to or surpassed $2.0 trillion.[254] Indeed, takeover activity in the first quarter of 2011 has risen to a sizeable $800 billion again and, thus, represents the strongest quarter since the early 2008s.[255] While the aforementioned statistics are mainly attributable to strategic investors, the renewed rise in takeover activity is likely being spurred on by financial investors. Private equity will draw on the sizeable capital commitments of $500 billion and given the improved credit market conditions, LBO activity arising solely from existing funds is likely to be

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[254] Cf. ThomsonReuters deals report November 2010, p. 2 (values are inferred from graphs), see http://online.thomsonreuters.com/DealsIntelligence/Content/Files/MA%20Snapshot%20November%202010.pdf, last accessed on March 29 2011.

[255] Cf. ThomsonReuters deals report April 2011, p. 3, see http://online.thomsonreuters.com/DealsIntelligence/Content/Files/1Q11_MA_Financial_Advisory_Review.pdf, last accessed on May 1 2011.

in the range of \$1.5 trillion over the next few years.[256] In sum, these figures illustrate that takeover waves are approaching faster and transactions are becoming a more constant phenomena.[257] In turn, deal-making in terms of tactics and strategy will evolve rapidly and require adequate regulatory response which underlines the unaltered need for impartial and thorough academic analyses of takeovers.[258] In this context, while there are numerous interesting research questions, the subsequent recommendations will focus on a few avenues which directly evolve from this thesis and are deemed most fruitful.

First, given the long-standing discussion of target managers' conflicts of interests in private equity backed transactions,[259] putting these conjectures to a rigorous test would be of particular interest. To investigate if, and in the case of yes, to what extent collusion between private equity investors and target managers poses a problem to company vendors, one approach would be to analyse the expected change in managerial ownership around the takeover. Therefore, comparisons should be made between the ownership change of managers who leave the company (and thereby have a personal incentive to increase the bid price in the takeover negotiations) and of managers who are invited to stay on after the buyout (and thereby have a personal incentive to keep the bid price in the takeover negotiations at a low level[260]).[261] In addition, it would be crucial to take into account the presence of so-called "special committees of disinterested directors". These are sometimes but not always installed

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[256] Cf. Bain report March 2011, p. 2 and p.35, see
http://www.bain.com/bainweb/PDFs/Bain_and_Company_Global_PE_Report_2011.pdf, last accessed on April 15 2011.

[257] Cf. Davidoff (2009), p. 16.

[258] Cf. Davidoff (2009), p. 16.

[259] Cf. section 5.1 for a more extensive discussion and anecdotal evidence.

[260] Certainly, the manager's incentive to keep the bid price at a low level depends ultimately on whether her/his expected net wealth change from the buyout is positive. In any case, even if the sample would include a "stay-on manager" for whom the expected net wealth change is estimated to be negative, this negative cash value simply represents an incentive to negotiate for a rather higher than lower bid price and thus would be cleared against the "stay-on managers" for whom the net wealth changes are estimated to be positive.

[261] In particular, one would measure their expected ownership change in terms of stock- and option-based compensation.

by the target's board to lead the takeover negotiations. They consist of directors who have no ties to the target or the bidder, nor will they receive any equity interest in the new company. Consequently, such special committees mitigate the collusion potential in takeover contests. By merging both pieces of information, a first collusion proxy would have been generated. In relating it to the takeover premium, evidence would be shed on the question of whether, and in the case of yes, to what extent, managers may face a conflict of interest in private equity acquisitions.

A second avenue would be to focus efforts further on grasping the value of expected synergies and understanding how it pours into takeover pricing. When compared to its utmost relevance, our understanding of synergies and their relation to takeover pricing is still limited.[262] This thesis has contributed in this area by exploiting the change in analyst cash flow forecasts around the merger consummation date. However, besides this approach, there are further largely unexploited, forward-looking sources of information that could help in this respect. For instance, analyst forecasts of stock prices per se (which are available for large cross-sections) or option prices (which provide data on a more frequent basis) warrant further investigation as to their value.

Finally, another highly valuable avenue would be to analyse empirically the complex takeover bidding process. Gorbenko/Malenko (2010) and Dittmar et al. (2010) provide interesting recent contributions in this field but the way different bidder types interact in terms of the number, timing and underlying valuations of their bids is as yet still poorly understood. In this context, it would be particularly interesting to analyse proprietary information from advising investment banks. Precise deal documentation from sell-side mandates encompassing the whole bid history would enable us to gain highly valuable insights. Access to such data would greatly help in understanding the complex bidding process.

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[262] Cf. section 5.1 for a detailed discussion.

A. APPENDIX

Appendix Chapter 3

Chapter 3, which is joint work with Ann-Kristin Achleitner, André Betzer and Marc Goergen, is forthcoming in the European Financial Management Journal under the title "Private Equity Acquisitions of Continental European Firms: the Impact of Ownership and Control on the Likelihood of Being Taken Private". The reader is referred to chapter 3.

B. APPENDIX

Appendix Chapter 5

Table B-1:Control variables across bidder types

This table represents all control variables across bidder types. All variables are defined as in Table 5-2. *, ** and *** denote statistical significance at the 10%, 5% and 1% level, respectively. "ins" refers to insignificant".

Panel A: Control variables across bidder types

Variable	Private equity bidder			Public operating bidder			Private equity vs. public operating	
	n	Mean	Median	n	Mean	Median	T-test	Wilcoxon
MCap	264	11.31	10.64	900	11.19	10.61	ins	ins
Debt/Assets	255	50.2%	50.5%	809	51.2%	48.8%	ins	ins
TobinsQ	255	789.85	659.65	815	1025.69	780.83	***	**
Aret12	257	-8.0%	-14.6%	886	-7.4%	-13.4%	ins	ins
Challenged	264	14.8%	0.0%	902	6.9%	0.0%	***	***
Hostile	264	1.1%	0.0%	902	3.7%	0.0%	**	**
Tender	264	32.2%	0.0%	902	46.6%	0.0%	***	***
MBO	264	28.4%	0.0%	902	0.0%	0.0%	***	***
Bankrupt	264	1.5%	0.0%	902	0.1%	0.0%	**	**
Unsolicited	264	4.5%	0.0%	902	3.8%	0.0%	ins	ins

Table B-1: Control variables across bidder types (continued)

Panel A: Control variables across bidder types

Variable	Private equity bidder				Public operating bidder				*Private equity vs. public operating*	
	n	Mean	Median		n	Mean	Median		T-test	Wilcoxon
Defense	264	2.7%	0.0%		902	17.7%	0.0%		***	***
Toehold	264	11.0%	0.0%		902	8.8%	0.0%		ins	ins
B_lock	264	1.5%	0.0%		902	15.6%	0.0%		***	***
T_lock	264	0.0%	0.0%		902	0.3%	0.0%		ins	ins
T_termfee	264	57.2%	100.0%		902	52.9%	100.0%		ins	ins
B_termfee	264	12.9%	0.0%		902	8.2%	0.0%		**	**

(Table continues on next page)

Table B-1: Control variables across bidder types (continued)

Panel B: Control variables across private equity bidders and public operating bidder *subsamples*

Variable	Private equity bidder			Public operating bidder with IBES data			Public operating bidder with Value Line data			*PE vs. PO IBES*		*PE vs. PO Value Line*	
	n	Mean	Median	n	Mean	Median	n	Mean	Median	T-test	Wilcoxon	T-test	Wilcoxon
MCap	264	11.31	10.64	594	11.49	11.07	82	12.05	11.96	**	**	***	***
Debt/Assets	255	50.2%	50.5%	547	46.9%	43.2%	79	46.8%	46.0%	*	**	ins	ins
TobinsQ	255	789.85	659.65	554	1181.91	932.83	81	1292.74	1211.71	***	***	***	***
Aret12	257	-8.0%	-14.6%	593	-10.7%	-15.5%	82	-8.8%	-10.2%	ins	ins	ins	ins
Challenged	264	14.8%	0.0%	594	7.9%	0.0%	82	11.0%	0.0%	***	***	ins	ins
Hostile	264	1.1%	0.0%	594	4.4%	0.0%	82	14.6%	0.0%	***	***	***	***
Tender	264	32.2%	0.0%	594	54.2%	100.0%	82	69.5%	100.0%	***	***	***	***
MBO	264	28.4%	0.0%	594	0.0%	0.0%	82	0.0%	0.0%	***	***	***	***
Bankrupt	264	1.5%	0.0%	594	0.2%	0.0%	82	0.0%	0.0%	**	**	ins	ins
Unsolicited	264	4.5%	0.0%	594	4.7%	0.0%	82	11.0%	0.0%	ins	ins	**	**
Defense	264	2.7%	0.0%	594	18.4%	0.0%	82	19.5%	0.0%	***	***	***	***
Toehold	264	11.0%	0.0%	594	10.9%	0.0%	82	14.6%	0.0%	ins	ins	ins	ins
B_lock	264	1.5%	0.0%	594	15.3%	0.0%	82	12.2%	0.0%	***	***	***	***
T_lock	264	0.0%	0.0%	594	0.3%	0.0%	82	0.0%	0.0%	ins	ins	ins	ins
T_termfee	264	57.2%	100.0%	594	60.8%	100.0%	82	72.0%	100.0%	ins	ins	**	**
B_termfee	264	12.9%	0.0%	594	8.4%	0.0%	82	14.6%	0.0%	**	**	ins	ins

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